

CHAPTER III

THE ECONOMICS OF THE COMMON HERITAGE

At the heart of the Marine Revolution and the new order for the oceans is the concept of the Common Heritage of Mankind.

In proposing the concept to the First Committee of the General Assembly, in his historic address of November 1, 1967, Ambassador Pardo of Malta said, he chose not to elaborate on the legal and economic content of the concept at the time. The content of the Common Heritage of Mankind as a legal norm must be defined not by the individual State but by the international Community, he said on a later occasion (SID Journal, Special Issue on Ocean Management and the Law of the Sea, December 1983).

As finally embodied in the United Nations Convention on the Law of the Sea, 1982, the concept has five implications:

First: non-appropriability: the common heritage can be used but not owned. It is an area where there is no property.

Second: a system of management in which all users share.

Third: an active sharing not only of financial benefits but also of the benefits derived from shared management and transfer of technologies. The second and third points change the structural relationship between rich and poor nations and traditional concepts of development aid.

Fourth: the concept of Common Heritage implies reservation of ocean space for peaceful purposes, and

Fifth: it implies reservation for future generations.

The purpose of this chapter is to indicate that the concept of the Common Heritage could well become the nucleus of a new economic theory, applicable not only to the oceans but to a new economic order in general. The oceans are our great laboratory for the making of a new order. If they encourage new thinking among scientists, technologists, lawyers, experts in international institutions, and ideologists, it is not surprising that the same should apply to the economists.

Our analysis of the economics of the Common Heritage will be based on a previous Report to the Club of Rome, Orio Giarini's Dialogue on Wealth and Welfare: a response, as Aurelio Peccei summarizes it in his Preface, to the challenge of our time "which demands not only a fresh, diverse concept of ourselves and our world, and of our place and responsibility in it, but also a vision of our economy, as new and revolutionary as the Einstein cosmology was in comparison with the Newtonian concept."

Giarini starts from the assertion -- incontestable -- that neither the neoclastic nor the neo-Marxist, nor the Keynesian school of economic thought offers tools adequate for the analysis of the present economic situation, let alone for a solution of its problems. The economics of the last three centuries, he points out, is essentially the economics of the Industrial Revolution, first phase, of Western Europe -- "the discipline of industrialization" -- and deeply rooted in Western philosophical thought and its value system. In a world that has moved on to a new, basically different phase of the Industrial Revolution and in which Western thought has lost its preponderant influence, this type of economics has little to offer.

< the world is now less and less the extension of a one-sided, "universal" (essentially eurocentric), culture or power. It is a global, interreacting system which will inevitably produce a new culture and -- by consequence -- a new

economics.

More specifically, an economic system that destroys its own resource, destroys itself. The "added value" it produces as measure of the GNP, is misleading, since much of this "added value," in reality, is negative: is a "deducted value." Workers employed in the manufacture of anti-pollution gadgets, for example, add to the GNP, but not to the real wealth of a nation, by merely compensating for damage done earlier.

In the long term, physical dependence on nonrenewable resources is an untenable economic proposition.

Giarini proposes a new concept of wealth and welfare and a new measure for economic value, comprising GNP, comprising capital, but far more comprehensive. This he calls D&P, Dowry and Patrimony: A "stock" of goods and services comprising natural (living and nonliving) as well as man-made (material and nonmaterial) goods and services. Rather than restricting itself to the "monetarized sector," as the economics of the Industrial Revolution had to do, (which, incidentally, coincides, and is linked to, the formation of the modern nation-State), his economics covers the whole spectrum of monetarized and nonmonetarized activities and deals with the dynamic interactions between them. His theory represents a *synthesis between ecology and economy*, "a new discipline of welfare derived from the synthesis of economics and ecology."

Two further points about D&P.

Unlike GNP, Giarini says, "the concept of D&P cannot be reduced even with the best will to a specific nation-state dimension: National histories and traditions as well as resources of any kind coincide only very partially with existing political institutions." The economics of industrialization, of the monetarized sector, and the concept of the nation-State, are all going through the same process of transformation.

Secondly, D&P is not a a fixed or given quantity, but it is in a state of dynamic equilibrium, determined by the interaction of its manifold components. Wealth and welfare, based on an *optimization of D&P*, is a product of resources, capital and labour in the most comprehensive sense. The optimum balance between the amount of labour, technology, and capital varies according to various constraints. " D&P is never really fixed," Giarini observes, "All its components are continuously subject to a process of accumulation and depletion. To better grasp this reality, we must view it dynamically and not just as a photographic image." He rejects Adam Smith's dualistic distinction between "circulating" (small) and "fixed" capital comprising machinery and real estate. His dynamic concept of D&P postulates a shift from an "analytical," linear or causal, to a "systemic" approach to economics," "which is not just a matter of theoretical debate but reflects change in the real situation, with its feedbacks, where all action is continuously modified by its effects, and where each element has a different behaviour (inertia) in time."

If D&P and deducted value are two of the key concepts of Giarini's economic edifice, the third one is "utilization value."

The traditional concept of value, that is, the "exchange value" of a good or service, is not applicable in his system -- and in the world we live in; for it is based on the cost of resources and labour to the moment the product is completed and ready for exchange. It does not include deducted value. It does not include the cost of disposal for waste and the recycling of usable parts. "The real value in all this sytem is not the production value of the final product because the real final product of the entire process of production is a total amount of waste. What counts and what has value is the period of utilization of the products and services: this is the positive part of the balance sheet.... The economic problem, then, is not to optimize merely the cost of production but rather to

optimize the total utilization value."

The cost of waste disposal is rapidly rising, and "the possibility of converting waste into usable 'by-product' is gradually diminishing. Specialisation is also restricting the adaptability of waste utilization."

The sectoralized "free-enterprise" system, where each economic enterprise aims at maximising profits in its own sector, and let the devil take the hindmost, is in fact incompatible with a rational use of resources, with an optimization of utilization value, and with a maximalization of recycling and waste utilization. This requires a systemic approach, aiming at increasing D&P and public welfare as a whole. "Polycultures," as they are planned and realized in aquaculture, reconstructing whole ecosystems, where one species feeds on the waste of another and every "ecological niche" is utilized, are needed for industry as well: Factory linkage, planned and integrated in such a way that one feeds on the waste of the other. This is not possible under a free-enterprise system.

The system frustrates not only the rational use of resources, it frustrates the rational use of technology as well.

Among the pathologies of the present system. Giarini mentions "gigantism", that is a trend toward bigger and bigger, ever more complex technology (nuclear plants, oil rigs, supertankers and containers, etc.). On the one hand, these require huge investments (in billions of dollars each): which changes the relationship between the "productive sector" or "private sector" and financial institutions and, ultimately, the State. On the other hand, they affect the nature of the insurance and counter-insurance business. Statistics show, Giarini points out, "that the decrease in the number of accidents (frequency), and the increase in the maximum possible level of loss are an indication that the situation tends essentially to be unmanageable." The new science of "risk

management" is an outcrop of this pathology and, just like pollution economics, it produces deducted value, not real wealth and welfare. The enormity of the risk is a measure of the vulnerability of the whole system.

Giarini has some penetrating observations about the use of Big Technology in developing countries: In order to "modernize," developing countries have to buy foreign technology, and for this, foreign currency is needed. To acquire foreign currency, production is geared for export, not for domestic needs. This process does not enhance development: on the contrary, the rural population is usually completely left out of it, and the poor get poorer. In the industrialized countries, in fact, the process was exactly the reverse: They started by producing for their domestic market and then built up international commercial strength with the production that exceeded domestic demand.

The question is not, Giarini states, that of having a chemical plant, but of running the plant to produce products that add to local wealth and welfare. It is a question of the economic system, not of the technology employed. In an integrated system, aiming at an increase in real wealth and welfare, even capital-intensive technology, by raising productivity, can contribute to D&P: because profits, which are expatriated under the present system, can be invested in other sectors of the economy, generating employment or occupations producing welfare.

Giarini does not enter into the question of *ownership*: He does not analyse the implications of his theory on the concept of ownership -- perhaps because he thinks the question irrelevant. Ownership, like sovereignty is in a process of transformation, if not dissolution. In many aspects it has become illusory and irrelevant. It is a *static* value. It might nevertheless be useful to underline that what has a *utilization* value, is to be *utilized*, managed, and what has no exchange value need not be *owned* in the classical Roman-Law sense. His theory, implicitly, is a theory of non-ownership: which is one of the reasons that

make it the economic theory of the Common Heritage.

Based on the three key concepts of D&P, deducted value, and utilization value, Giarini's theory provides new tools for the analysis of the basic reasons of the contemporary pervasive economic malaise: reasons that elude the analytic tools of traditional economics, restricted as they are to the *monetary* segment of the far wider spectrum of economic activities.

On the one hand, the traditional theories do not take into account the important contribution of "free" goods, such as air, water, land, to the economy; nor do they include in their calculations and projections the so-called "grey" economy, cutting across the borderline between monetarized and nonmonetarized transactions and including everything from the housewife's work to undeclared moonlighting jobs to the drug traffic: a segment that involves hundreds of billions of dollars annually -- perhaps as much as 15 percent of the global GNP. Nonmonetarized transactions are increasing in volume and scope as the world economic and financial crisis deepens. Thus the business page of the *Süddeutsche Zeitung* recently (December 20, 1983) carried the headline, "Barter on the Upswing in Consequence of Debt Crisis." The German firm Thyssen reported that there was no chance for expanding the market in domestic trade, but great opportunities were offered by the possibilities of getting into the rapidly expanding *barter* trade, in line with the already concluded deals of "Romanian steel for coffee from Columbia." "One has to take reality as it is, when there are only five or six currencies left that are really convertible. In this situation there is only one solution, and that is a return to the primordial form of trade," called, in mongrolized Anglo-German, "barter-Geschäft."

On the other hand, traditional economics fails to take into account the nonmonetary roots of the present inflation. Among these, Giarini lists: unprecedented growth in

production and consumption, overheated by advertising which creates artificial demand, and by Keynesianism which wards off cyclical recessions otherwise slowing down growth. He lists the insane explosion of military spending; and the diminishing returns of technology which appears to be unable to compensate for the over-exploitation of the natural resource sector of our D&P. "These nonmonetary factors are the basic roots of worldwide inflation. They have brought within our horizon increasing scarcities of food and raw materials, and environmental problems which can be overcome only by huge investments and rising costs of production." But neither inflation, to finance increase in wages, costs and prices, nor credit restrictions such as rising interest rates, which not only stop inflation but bring the whole economy to a grinding halt, can solve the problem. Monetary policies alone are unable to cope with problems whose roots are nonmonetary.

Giarini is prudent in offering solutions, and, obviously, there are none that could be offered dried-and-cut and ready for use. But he does give indications of policies apt to insure that the production of added value to GNP should not simply be a transfer from the nonmonetarized to the monetarized sector of the economy and that the real balance between added and deducted values should not be negative.

With regard to the monetarized sector he suggests that, in the long term, a global monetary system: a global currency is inevitable, and might be approached through regional efforts. Besides this, however, he has a series of suggestions for strengthening the nonmonetarized sector and integrating it beneficially into the economy as a whole. "For future years, the main strategy should be to mobilize capital and D&P jointly.... Recognition of the economic relevance of D&P and capital, of the necessity of stimulating their positive, as opposed to their negative synergy might be of help in providing a more soundly based theoretical framework for a world economic policy combining solidarity, cooperation, and self-reliance."

There are many ways in which the input of the nonmonetarized sector could be strengthened: by encouraging the activities of voluntary organizations in social services; assistance to the elderly; child care, education; cultural activities. At a time of increasing structural unemployment -- Giarini shows that it is practically impossible to create enough "jobs" for the rapidly growing world population -- one may have to look for the creation of occupation rather than jobs. This implies a whole new look at the problem of labour and its needs which must be met by other means if they are not covered by wages.

Giarini has little faith in the present system of *income tax* as a means of redistributing income. Complex and burdensome as it has become, it encourages evasions and the emergence and growth of the "gray economy." He favours a tax on consumption, which of course is different from a "sales tax." A sales tax favours the rich and weighs on the poor; a tax on consumption can be progressive and enhance redistribution of income.

Again, to strengthen the nonmonetarized sector, Giarini suggests that taxes could be paid in cash or in kind: in social services. For examples, doctors might perform a certain number of operations free for the community, instead of paying a tax. He suggests that the whole tax system be brought closer to the grass roots: decentralized. "Decentralization would provide a remedy to the extent that it led to the creation, close to the citizen, of civil-service posts occupied on a rotation basis, with everyone becoming a citizen-administrator in turn. Moreover it would be desirable for wage-earning to be replaced gradually and partially by honorary work."

In a footnote, Giarini refers to three other important aspects or implications of his theory, with which, due to lack of space, or because they have been covered amply by other authors, he does not deal in greater detail:

- problems and perspectives of collaboration between public and private institutions;
- regionalization at the continental level and its contribution to a world system (he refers in particular to a world financial system).
- International taxes.

This summary cannot do justice in any way to the comprehensiveness, the historical perspective, and the philosophical depth of Giarini's theory. It may suffice, however, as a basis for indicating the fundamental importance this new approach to economics may hold for the marine economy. The oceans offer a paradigm for the application and further elaboration of the theory; and only a new economic theory, like the one attempted by Giarini, will be able to cope with the problematique of marine economic policy.

There are four major reasons for this.

First, it is clear that the "Marine Revolution" has brought an unprecedented injection of D&P into the world economy and the economies of States. The oceans cover three quarters of the world, and the potential of aquatic food, of minerals, metals and energy, is mind boggling. Whether this massive injection of D&P has occurred under national or international jurisdiction, will, in the long term, not be as important as it seems today. The question of "sovereignty," in the long term, is as irrelevant to economic development as the question of "ownership."

Second: The mineral resources of the deep seabed, to start with, have been declared by the United Nations to be the Common Heritage of Mankind, and there are some startling similarities between this concept as it has been developed by its principal author, Arvid Pardo, and Giarini's concept of D&P.

Common Heritage, Pardo has stressed time and again,

"implies freedom of access and use on the part of those taking part in the heritage, but also regulation of use for the purpose of conserving the heritage and avoiding the infringement of the rights of others; inherent in the regulation of use is, of course, the responsibility for misuse. The concept finally implies the equitable distribution of benefits from exploitation of the heritage."

Pardo's concept of Common Heritage is as *comprehensive* as Giarini's. It includes not only resources: it includes also *values*. It includes also scientific research.

Similarly, his concept is *dynamic*, like Giarini's. The content of common heritage is "determined pragmatically in relation to felt international needs." It is not limited to a complex of real or potential resources. "World resources," he points out, "should not be conceived in a static sense." New resources are being constantly created by technology." (For all the foregoing, see Pardo, The Common Heritage, Selected Papers on Oceans and World Order, 1967-1974. Malta: University Press, 1975). The similarities are striking.

Thirdly, the Marine Revolution postulates a *synthesis between ecology and economy* as a *precondition for its lasting success*. The monitoring of changes in the ocean environment and the surveillance of activities apt to induce such changes is a mandatory, essential, integral part of any scheme for the management of marine resources. The United Nations Convention on the Law of the Sea, dealing, for the first time in history, with all major economic uses of the oceans, contains also the first ecological framework for the protection and conservation of the marine environment, with precise allocations of responsibilities, liabilities and enforcement procedures. This is indeed one of the most innovating and forwardlooking aspects of the Convention, but it was dictated by the very nature of things. The rational use of marine resources is physically impossible without due consideration of the marine ecology, including the behaviour

and movement of living resources, and physical and chemical oceanographic conditions.

Fourthly, all major economic uses of the oceans interact. A sectoral approach to ocean economics is obsolete and has become impractical. Offshore oil production impacts on fisheries. Trawling impacts on the laying of cables and pipelines. Aquaculture developments, the construction of artificial islands and installations may interfere with shipping lanes. Offshore and inshore interact. The management of ports and harbours, of sea-borne trade, of tourism, are all integral parts of one single ecologic system; and changes in any one of them will induce changes in all others. Multiple uses of single marine technologies have been shown to increase productivity and profitability. Cost/benefit analyses and projections cannot be sectoral. They must be broadly interdisciplinary if they are to work at all. The very concept of the "Economic Zone" embodies this "problematique" of the oceans: For the Economic Zone is not a "fisheries zone," nor a zone for the protection of the environment or a dumping zone or a mineral mining zone. It is a zone for the management of all economic and ecological uses of the sea, considered in their interaction. The same concept is enshrined in the Preamble to the Convention, where the Signatories state that they are "conscious that the problems of ocean space are closely interrelated and need to be considered as a whole."

It is for these reasons that the oceans provide a unique occasion to apply and test Giarini's theory, and that his economics may provide a seminal input to the development of the common heritage concept. In legal and constitutional terms, the United Nations Convention on the Law of the Sea pushes developments far in the direction of Giarini's thinking: it is, in fact, ahead of him. The legal and institutional framework -- no matter how imperfect in reality -- is there, and to this we shall return in the next chapter. The economic content must now be elaborated: in the Preparatory Commission and in other fora. It is going to be a long and difficult process, and Giarini's theories may

give some guidance.

As a base strategy, it will be recalled, Giarini recommends, for future years, "to mobilize capital and D&P jointly," based on the "recognition of the economic relevance of D&P and capital, of the necessity of stimulating their positive, as opposed to their negative synergy, within a theoretical framework for a world economic policy combining solidarity, cooperation, and self-reliance."

Could there be a more striking, a more concrete, a more immediately practical example of such a policy than joint, international investment of capital in the utilization of the Common Heritage of Mankind?

The amazing fact is that we are not talking about dreams of an idealized future: the *legal, institutional, and operational framework* for the enactment of such a policy *has been created*: exists; operates. We have an interim regime for exploration, research and development in place in the form of the Preparatory Commission for the International Seabed Authority and the International Tribunal for the Law of the Sea.

This Commission, as is well known, was established by a Resolution adopted by the Third United Nations Conference on the Law of the Sea, together with the Convention, the "Constitution for the Oceans."

The Commission is composed of all the Signatories to the Convention (132, at this time), plus a smaller number of Observers, that is, delegations of States who have not yet signed the Convention but have signed the Final Act of the Conference.

The task of the Commission is to *manage transition*, in the interim period between the signing of the Convention and its coming into force, which requires 60 ratifications and is likely to take a few years.

The Commission is presently studying the modalities of establishing a Joint Venture for Exploration, Research and Development (JEFERAD) first proposed by the Delegation of Austria. This undertaking -- a new form of industrial/scientific cooperation between North and South -- should mobilize investments of \$200 million for a five-year interim period

- to engage in exploration of a mine site for the future Authority;
- to create a Technology Bank for the future Authority to which private and State companies may, at fair and reasonable commercial prices, cede technology the Authority will need once the Convention comes into force;
- to train personnel from developing countries both in the new discipline of welfare derived from the synthesis of economics and ecology and the sciences on which marine technology is based.

The exploitation of the resource is, in a way, a secondary goal and, in any way, at least a decade and a half in the future. What is of immediate importance is the joint mobilization of capital and D&P or Common Heritage: a Common Heritage comprizing *resources* as well as *science and technology* and *ethical values*.

When it comes, the exploitation of resources will not fall into the traditional pattern of exhausting a nonrenewable resource. In the economy/ecology of the ocean, as we have seen, minerals and metals are a continuously renewable resource. 8

Deducted value there will be, and the problem is to minimize it, through careful monitoring of the marine environment, through imaginative and constructive processes of waste recycling; or by minimizing waste through processing on the ocean floor; and through realistic and

forward-looking measures to protect land-based producers of metals and minerals, whose earnings will be adversely affected by ocean mining. This cannot be achieved through limiting the production of ocean mining nor through the payment of compensation as presently considered by the Commission. The location, in time and in space, of commercial-scale ocean mining is too uncertain at present to permit the adoption of precise measures of this kind. If ocean mining is carried out in areas under national as well as international jurisdiction, limitations on, and compensation for, production in the international area would be meaningless. It is quite certain, nevertheless, that ocean mining will affect prices, at least of some metals (certainly cobalt and manganese) and will cause displacements. The best way to minimize the harmful effects of these displacements is to use the interim period to plan for alternative earnings: to facilitate the *diversification of the economies* of those developing countries which depend overwhelmingly on the export earnings from one commodity (e.g., Zambia, Zaire, Zimbabwe). In Chapter III, some measures were suggested to cope with this problem, among which, the establishment of a Revolving Fund for industrial diversification, in which UNIDO, UNCTAD, UNDP, the World Bank and the Jamaica Commission should cooperate. On the precedent of the Revolving Fund for the Exploration of Hard Minerals and Geothermal Energy in Developing Countries, this Fund should initially be financed by voluntary contributions. It should finance industrial enterprises in the affected land-based producer countries -- for instance, in bio-industries, which have an enormous potential for the future, are not highly capital-intensive, and might offer to developing countries an opportunity for "phase skipping," that is, passing into the most advanced phase of the industrial revolution, without "recapitulating" (and never catching up with) the previous and already obsolete phases.

In return -- again, following the pattern of the Revolving Fund for Mineral Exploration -- countries benefitting from the assistance of the Fund, would contribute to the replenishment of its capital by paying one

percent of the revenues from the industries created by the Fund, once their products come on stream. In the case of the Revolving Fund for Mineral Exploration, such payments are made over a period of 15 years.

The developing land-based producer countries, dependent as they are on earnings from the export of one or two commodities which are of no value for internal consumption, fall into the pattern described by Giarini above. The measures proposed here might go a long way towards redressing this unfortunate course of economic negative development. The liberation of developing countries from the grip of the post-colonial extraction economy may indeed be one of the unheralded by-products of the marine revolution.

Here again, it is not so much the monetary value of the Common Heritage that matters. In dollars and cents, this value, for the foreseeable future, will be marginal: almost negligible, if measured against the economic needs of development cooperation. It is the *concept* that matters, and the methodology this concept suggests, that might be instrumental in turning things around.

As a means toward strengthening the nonmonetarized sector of the economy, Giarini suggests the creation of productive "occupations" rather than "jobs." "Occupations that produce real value which, however, need not be monetarized but could contribute equally to real wealth and wellbeing."

Could there be a more striking example for this kind of economic activity than aquaculture?

Aquaculture fully straddles the boundary between the monetarized and the nonmonetarized sector. It includes, on one side, capital- and energy-intensive production of luxury items, such as prawn, or pearls, largely for export; on the other side, the small farm, Indonesian or Indian style: the family farm; or the Chinese-style community farm, where everybody pitches in, but nobody really is a full-time

four-season paid fish farmer and production is largely consumed by the family or the village community. The possibilities of expanding this type of activity, as was pointed out in Chapter III, are enormous: an increase in D&P, largely through the valorization of the nonmonetarized sector, which also would serve as a starting point for reversing the absurd post-colonial extraction-economy situation where countries, heavily dependent on fish protein for their nutrition, let their fish be fished out by foreign fleets and then spend their precious foreign exchange earnings to import canned fish.

Nonpaid labour plays an important role in other aspects of ocean management as well.

The *monitoring of the marine environment* and the *surveillance of activities* apt to induce detrimental changes in the environment requires the voluntary cooperation of professional scientists, of fishermen, mariners, of environmental organizations and concerned citizens. The recent establishment of a self-policing Association of Greek Ship-owners to protect the marine environment in the Mediterranean is a good example. Police action, while necessary, cannot entirely solve the problem of enforcement. It must be complemented by voluntary action and self-enforcement. In a recent book, *La sécurité en mer*, Philippe Boisson wrote (Dunkerque: Graphic Foto Edition, 1981), "It would appear that respect for technical rules and regulations depend essentially on the valor and conscience of seamen. Considering the immensity of the oceans and the difficulties of controlling them, the fear of the policeman remains ineffective." An outstanding Japanese environmental expert and fighter, Jun Ui of the University of Tokyo, stresses the need for a "decentralized and self-governing system," in which scientists, and environmental grass-roots movement, and concerned citizens monitor and fight, not only pollution but also the interest- and pressure groups around the polluting industries -- and he uses Japan as a striking example -- which try to block an effective environmental policy. The requirements of ocean management, again, may

give an impulse to much broader socio-political activities (nonmonetary), aiming, in this case, at a structure close to the grass roots very much like the one postulated by Giarini.

One aspect, which Giarini indicated but, perhaps, could develop further, is that the new emphasis on the nonmonetarized sector, on unpaid productive "occupation" rather than on paid, even though often unproductive "jobs," requires *more social service*, which, in turn, may straddle the monetarized and nonmonetarized sectors. Undoubtedly, material incentives have to be offered to nonpaid workers, such as free housing, food bonuses, or life-long scholarships for adult education and free medical services. In a number of oil producing countries, such measures have already been taken. Doctors who, in Giarini's scheme, should have the option of paying their taxes in the form of unpaid services to the community, might be directed to render them particularly to the unpaid worker. In a decentralized, self-managing socio-economic system, such procedures become quite practical.

Giarini has high hopes for the success of *regional integration*, enhanced by a multiplicity of concrete common problems. The establishment of regional unified currencies may be a step toward the creation of a world currency, an essential tool to bring some order into the monetary chaos of our time.

Ocean management requires regional integration more than any other sector of the world economy. It is in fact impossible, unthinkable, without regional cooperation and integration. Fish do not recognize the political boundaries of coastal States; nor does pollution; nor do ocean currents and winds and weather. And oil fields and mineral deposits may straddle boundaries. The management of living resources strictly calls for regional cooperation: cooperation between coastal States and through international organizations such as the regional fishery commissions, which presently are all actively engaged in strengthening and restructuring their

activities to be able to respond to the new and increased demands made on them by coastal States: demands for assistance in management, in manpower training, technology transfer, legislation and policy coordination.

The protection of the marine environment, equally, depends on regional cooperation and integration of policies, for ecological as well as for economic reasons. The ecological reasons are obvious. The economic reason is that unilateral anti-pollution measures might put an industry at an economic disadvantage, rendering it noncompetitive. Such measures must therefore be international and enforceable on all the industries in a given region -- or they cannot be taken at all.

Marine scientific research, likewise, cannot be conducted successfully on a strictly national basis, for ecological as well as economic reasons. Since the ecological system to be researched ignores national boundaries, so must the researcher, and regional arrangements must be made accordingly. Oceanographic research, furthermore, is too expensive to be carried out individually by most nations, especially in regions of developing countries. The cooperative use of oceanographic ships and regional oceanographic institutions is the only solution to this problem.

All this is provided for in the United Nations Convention on the Law of the Sea and is vigorously being pursued by the Regional Seas Programme, initiated by UNEP in cooperation with about 110 coastal States, all the U.N. Agencies engaged in ocean activities, and a great number of other intergovernmental and nongovernmental organizations.

One could also imagine that the regional communality of interests, the establishment of joint management systems and of joint mechanisms for monitoring, surveillance and enforcement, might generate, as a by-product, an element of disarmament and arms control. The movement for regional ocean de-nuclearization is rapidly gaining momentum -- in

the Pacific and Indian Oceans, in the Baltic, in the Mediterranean. The same mechanisms established to monitor the ocean environment, to assure surveillance of peaceful uses of the ocean and enforcement of compliance with rules, standards and regulations, can be used for the monitoring, surveillance and enforcement of arms control and disarmament measures: The machinery is being put into place. all that is needed is the political will to use it. It is encouraging that at least one of the Superpowers favours such a development.

That the Regional Seas Programme, and the related programmes by FAO for regional fisheries management and IOC for regional cooperation in marine-scientific research -- do not move as rapidly and straightforwardly as pure reason might want to dictate, is natural. There are inertias, there are countercurrents. Reality moves painfully slowly, and the daily labour of the shaker and mover is beset with continuous frustration. It is only in the longer perspective -- let us say, ten years -- that one can measure success or failure, and as Giarini, quoting Tolstoi, notes, changes are perceived when they have already taken place and not when they are under way.

What can be clearly perceived already today -- roughly a decade after the idea of the Exclusive Economic Zone was first conceived -- is that its lasting significance is not national aggrandizement: not that it was "the biggest grab in history," as the late Lord Ritchie Calder called in commenting on the Caracas session of the U.N. Conference on the Law of the Sea in 1974 -- its lasting significance is that it *institutionalized the transition from a laissez-faire system to a system of economic ocean management* which, by its very nature, because of the *inextricable interactions between its ecological and its economic components*, transcends national boundaries and accelerates regional integration. Since this development has to start from the "here" and "now," it is quite logical that it should start from economic zones under national jurisdiction, since nation-States are the basis from which

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we must work and move forward towards their integration, rather than starting from the establishment of strong international institutions for which, in many cases, a realistic basis did not yet exist and which are the end of the process rather than the starting point.

Giarini sees the need for international taxation, and favours a taxation system based on *consumption*.

We have, for the past fifteen years, proposed the establishment of an *Ocean Development Tax*, based on the *uses of the oceans*, that is, in a way, on *consumption*: utilization and consumption of ocean space and resources. There should be a one-percent tax on fish caught, oil extracted, minerals produced; goods and persons shipped; water desalinated, recreation enjoyed; waste dumped, pipelines laid, installations built: all the major commercial uses of the ocean. *Not* on subsistence fisheries; *not* on scientific research. This tax should be levied on *activities*, no matter where they take place: in areas under national or international jurisdiction: a functional, not a territorial tax; to be levied by Governments and paid over to the competent ocean institutions (FAO, UNEP, IOC, IMO, the Seabed Authority) for the purpose of building and improving *ocean services* (navigational aids, scientific infrastructure, environmental monitoring, search and rescue, disaster relief, etc.)

Taxes, we stressed at that time, must be directly and tangibly linked to useful services: Otherwise nations (or individuals!) will refuse to pay them. On the other hand, services cost: they must be paid for. They must, therefore, be linked to some form of taxes. To base contributions to the ocean institutions on the usual U.N. scale of contributions, seemed rather meaningless as it lacked any tangible links with the use countries make of the oceans and what they get out of them. The system should be flexible and decentralized, between the few global ocean institutions and regional systems providing services.

with the establishment of Regional Funds to pay for the services it is to provide. The establishment of an ocean development tax would strengthen these funds. It might also contribute to the creation of regional monetary systems or currencies.

The proposal was hailed, at the time, as "an extremely important, interesting suggestion, and perhaps a very promising proposal" by Ambassador Jorge Castañeda of Mexico (later, Foreign Minister of Mexico). "If we act intelligently, it has a fair chance of becoming a reality in the near future." (Pacem in Maribus II, 1971).

J. Alan Beesley of Canada said: "Lawyers feel they must solve the problems they are facing now. We must, in 1973 [when the L.o.S. Conference was to start] try to solve problems we are going to face in the future. And if we think of the problems of the future, this very radical and revolutionary idea of an ocean development tax is not nearly as futuristic and academic as it now might seem to be."

And Silviu Brucan of Romania said: "It is in my opinion one of those new daring proposals that are bound to gain ground in international life because it is based on the progressive forces at work in world politics and rides the wave of the future."

Beesley, and the Canadian Government, pursued the idea to some length in the Seabed Committee.

Beesley introduced the proposal in the Seabed Committee in March, 1971. He suggested that States "begin to pay over to the interim international machinery [the Seabed Committee]

a fixed percentage of all the revenue they derive from the whole of the seabed area claimed by them beyond the outer limit of their internal waters. One percent of such revenues, for example, could produce many millions of

dollars for the benefit of the international community and the developing countries in particular, as much as 15 million dollars a month, according to some sources. The revenues from the coastal State would constitute a sort of 'voluntary international development tax' to be paid over in the period pending the adoption of a multilateral treaty on the limits of national jurisdiction and the creation of an international regime for the seabed beyond national jurisdiction.

I realize that this suggested...step is radical and even revolutionary in nature. The Government of Canada for its part would be prepared to take it.

While his official proposal was restricted to the mineral resources of the continental shelf, he pointed out that

a different range of issues would be raised by that second possibility which we are in fact prepared to discuss, but there is no Canadian governmental position on the imposition of an ocean development tax on the living resources of the sea. This is another question we are considering.

The proposal died a quick death in the Seabed Committee. But its spirit lived on.

During UNCLOS III, the delegation of Nepal introduced a similar proposal -- again, restricted to nonliving resources -- for a tax that should be paid to a Common Heritage Fund which should have contributed to compensating for the inequities inherent in the establishment of the EEZ, which gives too much to a few States -- mostly rich -- and so little, or nothing to many others, the poorest among them. The Nepalese proposal gathered respectable support: cosponsorship by 13 States and support from many others; but it, too died. Perhaps the timing was unfortunate: as so many good ideas, they come either too early or too late. In 1981, when the Nepalese proposal finally came to the floor, it was too late for innovations or major changes in the Draft Convention.

The moment for the Ocean Development Tax may come -- must come -- after the Convention has come into force. At that time -- perhaps at the first Conference of States Parties to elect the judges of the Tribunal and the members of the Commission for the Continental shelf -- the Tax could be introduced as an additional optional protocol: linked to specific services to be rendered by specified ocean institutions.

An Ocean Development Tax, generating a few billion dollars of international revenue, whether in currency or in ocean management services, would go a long way in strengthening the new international economic order, compensating for the iniquities inevitably inherent in the present EEZ allocations and carrying us beyond the present, somewhat colonial, or post-colonial, or neo-colonial trend of dividing the common heritage to the advantage of the Haves and the detriment of the Have-not States. An Ocean Development Tax would embody one of the basic concepts of the Economics of the Common Heritage.

The management and conservation of marine resources, comprising living and nonliving resources, the marine environment and the related marine sciences, technologies and services, constitute the most important addition to D&P, Dowry and Patrimony, in the history of economics. Thus the development of the economics of the Common Heritage, including the establishment of appropriate infrastructures to give it effect, could give a most significant impulse to the further development of the economics of D&P. A great deal of research will be needed in this new field: on the need, and the cost, of subregional, national, regional and global services for the effective management of the marine environment and its resources; on the monetary and nonmonetary inputs into these services; on deducted values arising from negative synergisms of conflicting uses of ocean space and resources, from present technological gigantism, risk management and pollution economics; from

conflicts between military and peaceful uses of the marine sector of the economy; on the utilization value of services provided and means of production created (aquaculture facilities and technologies; mining ships and technologies, OTEC plants, food and mineral and energy potentials, etc.); on the generation of secondary or subsidiary industries (canning; construction; pharmaceuticals; petrochemicals; landbased transportation, etc.). Obviously much of this material exists, and all that has to be done is to reorganize, recast it in the context of the new theory. While further developing and refining the economics of the Common Heritage, such a work would provide guide lines for the implementation of ocean economic policies which are badly needed.

For reasons of political expediency and realism, the concept of the common heritage of mankind was first embodied and institutionalized in the very restricted sector of the almost mythical manganese nodules. In spite of strong counter-pressures and inertias, the concept is rapidly expanding: to embrace *all* marine resources and services -- whether we call them by the name of common heritage or not. Thus Shigeru Oda, of the International Court of Justice, recently wrote (American Journal of International Law, October 1983, Vol.77, No.4)

Meanwhile, with regard to seabed mineral resources, a new international regime of the deep ocean floor has been emerging from the discussions of UNCLOS III for international control of these resources based upon the basic concept of the common heritage of mankind. Who can say that the same trend will not be followed in regard to ocean fishing? Surely, discussions similar to those now taking place on seabed mineral resources will eventually be held on the new concept of the common heritage of mankind as applicable to ocean fishing.

Outer Space and the moon and its resources have already been declared to be the common heritage of mankind and if and when technology advances sufficiently to make these resources economically interesting a machinery will have to be established to manage them. Antarctica will follow. The proposal has already been tabled, by Malaysia, in the General Assembly of the United Nations. The ball is rolling, and cannot be stopped. Other basic goods and services, like food and energy, will follow, until the concept of Common Heritage, with its institutional infrastructure, coincides with that of D&P. We will then have moved to a system of economics, based on new concepts of value, of ownership and sovereignty, as different from traditional economics as Einstein's physics is from Newton's.