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AN ENVIRONMENT & DEVELOPMENT GEOGRAPHY FOR THE IEF ACTION

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1. After the Earth Summit of Rio de Janeiro.

My report could have been limited, as was my initial intention, to the following points: 1) to present the International Environmental Fund (IEF) proposed as a multilateral instrument for the protection of our common Earth and for human progress, in preparation for the Earth Summit 1992 ; 2) to define some directions regarding the geographical studies needed for the IEF action and for the environmental policies promoted by individual Governments.

In fact the proposal, even if not approved by the Summit, remains in my opinion substantially valid and all the more so if we don't consider this Summit as a unique, unrepeatable occasion, the last resort for the planet, but we consider it as a moment - a very important one - in a negotiation process which must go on to become practically permanent and in any case no longer limited to a few solemn moments spaced out in time

However, after the Earth Summit let me start with some opinions and comments on the results so far obtained.

Sentimentally, like many other people in the world, I consider them rather unsatisfactory. I would have liked something more: some more daring choices (such as those contained in the IEF proposal) capable of leading towards the overcoming of the contradiction typical of the last twenty years: the contradiction between the undoubtable growth of environmental knowledge and the continual growth of the environmental degradation of the planet.

Rationally, however, I must acknowledge that little more could have been expected and this for different reasons which, as I feared, led in many cases to an ideological and instrumental use of environmental problems.

Not considering here the lack of interest and commitment shown by many Governements - starting from the European ones, which are nearer to me - I will only take into account some of the reasons that somehow concern the political responsibility of the scientific world in their approach to environmental problems and their solutions.

The first reason concerns the objectives of the global change and the line of action suggested: some of them still remain too vague to allow concrete political decisions and even more so the financial back-up needed. A more appropriate

estimate of financial needs is, as we shall see, one of the main requirements also for the perfect functioning of the IEF mechanism.

A second reason is that the Conference didn't limit itself to solely examining the problems recognised by all of us, or at least to the problems for which there is a high concensus, regarding their diagnosis and their cure, and regarding the necessity of agreed multi-lateral intervention. It also threw in problems and processes that are still controversial at a scientific level. As was to be expected (and scientifical advisers, as well as diplomats, should have been well aware of it), these controversial issues brought us to unprofitable disagreement between supporters of different theories and this became an alibi to avoid concrete decisions.

Obviously, contrasts are normal in our field in that they are the essence of scientific development and we certainly mustn't hide them. It is necessary, however, to adopt a certain caution in order to avoid political and ideological exploitation of scientific controversies. This caution is even more needed when, as is the case in environmental problems, the controversy refers mainly to interpretation which may change the terms of a problem but doesn't necessarily deny its existence or its seriousness under other aspects.

In this connection we have to consider that some controversial phenomena (such as, the increase of Carbon Dioxide in the atmosphere, over which some experts disagree on the theory of the Greenhouse Effects) are due to processes (like the high consumption of combustible fossils by each of the rich countries, and the particularly intense de-forestation in a lot of poor countries) that have other negative consequences for the entire world eco-system, and for all humanity (Air Pollution, Acid Rain), not only for the territories from which these misdeeds originate.

Leaving aside the effects of the increase in carbon dioxide, de-forestation produces such profound climatic modifications and such devastating effects on the soil as to induce the necessity to intervene to change the processes by which it has been caused, and to allow a sound management of the world's forests. Regarding the native tropical rain forest, their destruction has to be stopped because humanity cannot allow the most important "biological mines" of the earth to go up in smoke.

Regarding the emission in the atmosphere of carbon and of other toxic substances that endanger the life of humans and all other living things, it is not only a question of reducing the level but also of regulating and of carrying out international checks because whoever pollutes and damages the atmosphere damages the fundamental right of all other countries or men to a healthy environment. The rapidity of the rise in polluting energy consumption that modifies the atmosphere destroys the possibility of an adaptation of the human respiratory apparatus. We must realise that the man of history, if he does not change the model of economic and social development, will destroy the man of nature.

If all Nations, that have the same right to use the atmosphere, were to emit the same amount of Carbon as do the richest countries, human life on Earth would be impossible. Therefore it is evident that the net emission of carbon dioxide must be contained and regulated, and then it is important to introduce at a world level a mechanism of international justice that takes account of the inequality of the net emissions of carbon dioxide, that give a good general indication of the consumption of natural resources and of the damage brought to our environment.

A third reason why the results of the Conference were unsatisfactory and much below our expectations is that it wasn't possible to avoid the sterile opposition between rich countries and poor countries, between the North and the South of the

world. This opposition led to revengeful behaviour from the South and the closure of the ranks of the North, and the efforts of the people who really wanted to find positive answers to environmental needs were in vain. This conclusion was certainly predictable, considering that the South had been waiting for over ten years for further negotiations, after the failure of the "North-South dialogue", a dialogue which has never actually begun, aimed at the building of a new, more just, international order.

A positive contribution towards the mitigating of the above contrasts could have also come from the scientific world. In the first place, it would have been necessary to recognize that the responsibility for environmental misdeeds and the situation of the planet, cannot be attributed solely to the ruling classes of the North but also to those of the South, in spite of the imbalance of appropriation of natural resources by different countries.

We must also think that the serious processes of environmental degradation that are occuring in Developing Countries are not only due to unsustainable imported technologies (by now these are imported with the concensus and often with an evident co-responsability by the local upper class); but they are often, and in certain cases mainly, caused by inadequate, environmentally inappropriate, traditional technology which the growth of population and their needs have long outgrown. Infact, the most specific environmental problems of the countries of the South - such as de-forestation, erosion and degradation of soils, over-grazing, desertification, flooding, and lack of water, etc - find their prime cause in the same poverty, which is not only the fault of external factors (like the inequality of the financial and commercial international system). This poverty is also due to internal factors (like for example the unequal partition of property and lands and of other unjust social relationships that block the coming of a model of internal development), which are no less important than external factors.

2. The proposed IEF - International Environment Fund.

This proposal, presented and discussed at the "U.N. Workshop on Creative Financing for Environmentally Sound Technologies" held in Belèm (Brazil) in December 1990, set as its aim the satisfaction of two fundamental requirements:
1. to regulate the international environmental system;
2. to fund the protection of the natural environment, the sustainable development and particularly the creation and diffusion of environmentally sound technologies; especially in developing countries, where the development of sustainable technologies, difficult even in developed countries, becomes practicaly impossible because of the lack of necessary finance (Adamo, 1990)

"The proposed I.E.F. would be a global fund dedicated to Our Common Heritage as originally conceived by the Commission on Environment and Development under Norwegian Prime Minister Margaret Gro Harlem Brundtland. The Fund should be administered by an authority delegated by the World Bank who in turn should be asked to convene a conference of the various funding sources such as the IMF, the regional development banks, the central banks of industrialized countries, the development assistence agencies of industrialized countries, including those which devote funds to international non-governamental organizations." (UNCSTD, 1990)

The proposed I.E.F. would act as a compensation fund and a regulator of environmental balance between nations, based upon criteria of equity and

international justice. This would be supplied by countries that are, environmentally speaking, debtors (essentially the industrialized nations) in proportion to their environmental deficit and to their pro-capita income, and should finance the relevant projects and the environmental policies of the countries that are environmental creditors, in relation to their environmental surplus, to their pro-capita income, and to their efforts in favour of protecting the environment of all humanity.

For the immediate constitution of the I.E.F., it is proposed to use:

1. the funds pledged to the "Global Environmental Facility" (World Bank-UNDP-UNEP);

2. the sources arising from the mechanisms of debt conversion as proposed by the Craxi Report (1990): firstly of the debt conversion into a multilateral institution, but also the bilateral public loans. About these, infact, this Report suggests the possibility of converting parts of the service of the debt into offset funds, to finance projects for environmental protection and sustainable development. The management of these funds, which could also constitute an initial basis to begin the politics of sustainable development, we propose to be entrusted immediately to the I.E.F.

3. part of the public aid or, better still, the equivalent of its possible increase. This part we propose to use immediately for the I.E.F. could be equal to 0.25% of the Gross National Product (G.N.P.) of the developed countries; if these countries decide finally to keep their promise, and to rapidly bring their aid up to a minimum of 0.70% of the G.N.P., as required by the same Development Aid Commitee of the O.E.C.D.

4. private donations which could be stimulated by international investment in eco-bonds, launched by the United Nations with the collaboration of the Non-Government Organizations (N.O.G.s)

Revenues then should be represented by the following headings:

A) voluntary private contributions, such as direct donations and the possibility in rich countries of deducting a small tax free amount from profits and personal income;

B) rent and royalties, paid by rich States and private companies (such as biochemical and farmaceutical industries): respectively for the concessions to use vast regions of tropical rain forests - to be conceived as biological (and climatic) "mines" and water supplies, and to be cared for as scientific parks - for research purposes, for the gathering of natural substances and the economic exploitation of research results.

C) part of the revenue from individual states, generated by the eco-tax, a tax (indirect) which is gradually making headway in industrialized countries (at least in some of them) and which is under discussion in the European Parliament. The eco-taxes should concern the consumption of the following categories of goods:

C.1) noxious products (eliminable and non-eliminable),taxation to be restricted, for the moment, to fossilized and other combustibles (carbon tax), to clorofluorocarbides (Cfc-tax, a temporary tax payable up until total elimination), and to some heavy minerals (such as cadmium);

C.2) goods which are under-priced by the market and do not reflect the physical scarcity of the non-renewable natural resources used in their manufacture, such as certain rare minerals (for which the taxable sum should be shared between the fund and the producing country);

C.3) goods which are under-priced with reference to the physical quantity of the renewable natural resources employed (for example, the extension of occupied soils); for the moment we could cite some agricultural products typical of tropical countries (or even a product prevalently exported by developing countries) and in particular products for which the terms of trade have deteriorated (ex. coffee, cocoa, leather, cotton, etc.) and for which demand is not very elastic;

C.4) goods produced in rich countries with the aid of customs duties and state subsidies, to the detriment of the economies of poor countries and the environment; in particular, this proposal of a swing away from economic protectionism towards nature protection, might concern some of the products over which the Uruguay Round is currently in deadlock, and help to get the situation moving.

Evidently the sum payable to the I.E.F. differs according to each type of product taxed and to the category of each country. With regard to the much discussed carbon tax (Pearce, 1989a; Brown, 1990), I.E.F. debtors should be those countries with a net pro-capita emission of carbon that exceeds one ton per annum. Their payments, in proportion to the quantities in excess of these limits, could be defined with reference to the rough cost of reforestation which would, in theory, allow the absorbment of a corresponding quantity of carbon-dioxide.

Outgoings are represented by various forms of financing, the distribution of which is based upon criteria which can be inferred from the proposals for revenues and which, a part from a sense of fairness, also take into account the policies practised by environmental creditor countries.

The following financial supports should not be neglected:

I) public and private companies' projects: tax relief on loans and export guarantees, respectively for various forms of investment directly in the sector of sustainable technologies (better still if through international joint ventures) and for the transfer of such technologies;

II) projects and programmes of the Governements of the said States, of international Organisms and of N.O.G.s: for research into sustainable technologies, the environment in its geographical aspects and in its relationship to development; for research into prevention work and environmetal recovery, for the diffusion of sustainable technologies, training programmes and projects of sustainable development.

III) transfer to tropical countries of rents and royalties for pluvial forests actually destined to be Scientific Parks and transfer in any case of yearly loans (gained from the carbon tax) proportional to the environmental benefits coming from the reduction in deforestation (taking 1991 as a basis). The above would represent such a financial flow as to discourage alternative uses. Its assessment would imply an appropriate

geographical classification of forest regions, as we have to take into account the different "marginal opportunity costs" (Warford, 1989; Pearce, 1989b).

IV) loans at special rates to the States and extra funds to the Firms for the reconversion, diversification and economic development of those countries that will be subject to economic loss due to environmental policies of industrialized countries and also due to the implementation of the above proposals. The latter can only be carried out gradually.

It may be useful , in conclusion, to make explicit some other aspects of the background implicit in the proposal of the I.E.F. and some its implications.

The insitution of this Fund - finalized to regulate the international environmental rapport and to finance the environment in its plurality of aspects and in its different geographical scales - bases itself upon a systemic conception of the world and in particular upon the principle of interaction between the different phenomena of the Earth's reality and between the Earth's regions.

In other words, from this conception, that has been the foundation of the geographical sciences since the first half of the 1800's, are derived certain considerations:

1. The problems occuring on a "global" scale, privileged by multilateral conventions, result from the interaction of local, regional, national, continental problems and actions. Therefore, its solutions imply plans of intervention on all levels, starting from the local scale.

2. The problems of each of the kingdoms of nature or "spheres" (atmosphere, hydrosphere, litosphere, biosphere) in which we divide the geosphere (the Earth's reality in its entirety), are often the result of processes that are developed also in the other spheres. Therefore, the implementation of most of the international conventions on the environment (already or still to be approved - each of them in general are related to one sphere only), implies integrated projects regarding many different aspects of the interconnected world reality.

3. In particular, we cannot afford global problems unless we solve those related to the poor countries. These countries cover a great part of the world's territory, and comprise a large percentage of its population; moreover, it is here in which future demographic growth is concentrated. It is therefore evident that the protection of our common Earth and human progress does not only involve a greater degree of cooperation between the countries of the North and the South, but the latter also need more solidarity and resources from the former.

We have to understand that the countries of the South cannot realize on their own the necessary investments for the development and the diffusion of technology (of product, of process, of organization) that is environmentally more sound than we have at present.

This is why, to establish a definition of a first environmental budget between nations (in order to proportion the payments from each nation to the I.E.F.), we cannot afford to wait and take elaborate measurements and to make sophisticated indexes. If there is the will of the Government of countries that are environmentally in debt, it is sufficient for the present to use the data of the net emission of carbon per inhabitant, integrated with that of the average income. We have to adjust this data on the basis of the annual variation tax of the forestry biomass - so that we can encourage the reduction of de-forestation, or even better so that we can increase the forestation.

However, it has to be clearly underlined that if steps are to be taken towards solving the planet's environmental problems a great effort, even if not financial, must be made on the part of the Developing Countries in pursuing politics of sustainable development and in complying with their international committments. Without this committment, the international co-operation and the financial sacrifices entailed for the consumers of the North would have no sense, neither would it find the necessary concensus.

Regarding this last theme it must be clearly understood that it is also necessary for the consumers of the rich countries to have complete trust in the management of the fund and that they can effectively check and see the concrete results obtained. It is therefore indispensable that before and after the implementation of environmental plans there be a careful evaluation, and a more widespread diffusion of information.

On the other hand, environmental political action and all the financial effort that is necessary to put it into effect would have no sense unless it were first established that all the investment projects, especially those financed with public help, should be coherent with the concept of sustainable development and should be therefore submitted to a preventive evaluation of environmental impact.

The programmes and financing for the environment would be in vain without a gradual but radical change in the economic policies (which, at present, are made up of fiscal and credit incentives, and customs barriers), that artificially increase the possibility of profitable activities, distort the markets, and finish by generating waste and degradation of natural resources and environment both in developed and developing countries (Repetto, 1988).

Such efforts will be equally in vain unless the diffusion of unsustainable technology, or at least, technology banned by the environmental norms of the country of origin is not impeded in developing countries (through strict control of investments and international transfers of technologies, incoming and out-going).

On this subject, it should be underlined that the "Tradeable Permits" are unacceptable, although they are indicated as one of the useful potential mechanisms for funding sustainable technology and development as is outlined in the Report of the UNCSTD (1990). Without counting the fact that these Tradable Permits could suggest a new macro-regional vision of a neo-colonial type, they in no way discourage the reduction of waste and consumption of rich countries. This reduction should be one of the fundamental directions of a really sustainable development on a world scale. Tradable Permits do not encourage in developing countries a policy of environmental protection and especially of useful investments in the increase of productivity (of soil, of work and of used energy), which is the other fundamental direction of sustainable development on a world scale.

The mechanism of Tradable Permits and also that of consumption rights (which are based on the logic of he who can afford to pay for whatever environmental damage he causes, may pollute as much as he likes) are however in contrast with the proposal of the I.E.F., taking from this fund a crucial part of the revenues upon which it counts.

According to the proposal of the I.E.F., the environmental debts (which belong to the whole world community and not to one or more chosen countries) have to be put in a common Fund and managed multi-laterally, utilized for the financing of the environment and sustainable technologies in the creditor countries, to the advantage of the whole world community.

3. Implications for geographical studies.

The present knowledge of environmental problems, of their solutions and the financial needs they imply, however rough it may still be, is sufficient for the immediate constitution of the IEF and for the start of its activities. But its future development will require the realization of a wide programme concerning multi-disciplinary research and study, in which geography will play a crucial role.

In fact, due to the global and systemic nature o the geographical space and to the physical and human nature of the elements that make it, geography lends itself to acting as interface among various disciplines, therefore fulfilling the essential and delicate task of coordinating the works concerning both the definition of problems and solution planning .

Besides, even if new research and development is needed in many scientific fields, a large part of the work needed consists essentially of collecting and arranging geographically, in a systematic way, well-known socio-territorial phenomena and processes. Mostly, these need to be re-classified in comparable terms, according to their geographic scales and to scales referring to different decision levels; of course, this work must be done using the indicators and the parameters most suited to the requirements of the IEF.

In this regard, geography is required to give a very important contribution: not only concerning the promotion and evaluation of concrete projects to be financed; but also concerning specific IEF requirements, in its role of regulator of the International Environmental System and as a transnational institution which should carry out an important activity as financial adviser and assistant to Governments for the realization of National Environmental Programmes.

In particular, within these specific functions, geography should give contribution in order to:

- assess environmental debts and credits, and so for defining the international environmental balance; in the future this operation is likely to become much more complex than is shown in the initial scheme, for the hopeful introduction of prizes that may act as incentive to individual countries;
- evaluate the potential fund attainable from each kind of financing sources in each country;
- evaluate the financing mechanisms more suitable for each kind of countries and problems;
- calculate the financing needs of each country and each issue; particularly for the development of Environmentally Sounder Technology and for projects of natural resources management and recovery.

All this implies on the one hand a higher development of studies regarding financial, fiscal and commercial geography, with the following objectives:

- to better define the possible IEF revenues (particularly those mentioned under heading C in the previous paragraph), and to try at the same time to mitigate the contradictions of the international economic system;
- to identify and to stimulate financing mechanisms alternative to those of the IEF, and preferably market ones.

On the other hand, in order to be useful and suitable to all the IEF needs, geography will have to provide a unitary representation of global environmental problems, even if they imply the application of different study scales, in that they are the result of interaction of local, national and regional problems. This evidently means that the various problems, however object of separate studies, will have to be

defined-evaluated according to the same scale of values at world level, corresponding to a priority scale of action.

Besides, for each kind of problems, areas of action will have to be defined and graded according to the present local state of the natural environment, to the gravity/speed of the degradation processes in act therein, to the degree of environmental unhealthiness of locally used technologies.

This geography cannot be identified either with environmental geography or with developmental geography, even if are needed, as well as studies from many other disciplines. It is the geography of the social problems created by the relationships between environment and development: it evaluates on the one hand economic development in its environmental impact, and on the other, it considers the environment as a whole of conditions/possibilities for economic development. It is an active geography that we can simply define as a geography of sustainable development, which not only proposes a unitary recomposition of geography, with the help of cybernetics, but also reproposes, energically, its political role of strategic knowledge.

In order to be more effective and able to meet the operational needs of the IEF, this geography will have to pass from the representation of problems, defined according to their specific nature and gravity, to a new representation of them (at least of those which have priority) according to the costs and benefits of their possible solutions and to financial needs.

A geographical description of environmental needs in monetary terms - which can be built up with the cooperation of experts in all kinds of work - is certainly historically relative and needs to be continually updated, not so much due to price increases as to technical progress and external problems.

Finally, in order to fulfill its tasks - that is of "discovery" as the slogan of the last International Geographical Congress (Washington, 1992) says - geography cannot but keep up with the times: it has to re-draw its world maps and its atlas, as the world changes and our way of looking at it changes as well together with our needs to transform it.

In spite of the many difficulties that still exist, a geography capable of doing all this today (in the time of powerful development of Geographical Information Systems) is no longer a dream.

At same time, the perspective of a better world, based on a more just international order which is implicit in my proposal, is no longer necessarily a utopia. With the fall of the Berlin Wall it has become a concrete possibility and it can even become a reality if, as I hope, the radical changes in the world become fully understood and accepted also by the most powerful country in the ex-Western world.

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