BIO-ENVIRONMENT - ECONOMIC DIMENSIONS

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1. Precedents

The first UN Conference on Human Environment, held in Stockholm fifteen years ago, addressed urgent calls to the governments. Later that year the UN General Assembly endorsed the documents of the conference in a resolution. The Stockholm decisions are to be seen as the first international move in history to lay the foundations of global environmental protection, and assign definite tasks to the leading agencies of each country.

The result of environmental protection achieved over the past decade and a half can be summarised as follows:

- The International Organisation of Environmental Protection, UNEP, was set up as a new member of the family of UN bodies. Specific problems of environmental protection were also included in the working programmes of the other UN agencies such as WMH, WHO, UNESCO, UNCTAD and its regional organs (e.g. UNECE, CECD). New ideas were born, new methods designed, new proposals made for the standards: international control networks have been set up and international research projects have been or are being completed.
- In nearly every country in the world environmental protection has become a political issue with its relevant laws, regulations and system of institutions.
- As a result of the above facts, the volume of pollutant emission has been reduced in various areas, environmental protection has been given more attention and has been incorporated in the systems of macro- and micro-economic decision-making.
- In a majority of countries the problems of environmental protection feature in the media almost daily: in various public schools more profound knowledge is taught on the questions of the environment.
- In scientific research the environment is no longer relegated to the periphery, but features in budget-supported research projects as well.
- Several bi- and multilateral agreements have been concluded. Upon the initiative of the Economic Commission for Europe the government signed the Geneva Convention in 1979 which controls long-range air pollution extending over frontiers. The UN General Assembly set up a special committee (World Commission for Environment and Development) in 1983 to make a report for the 1987 autumn session of the UNO on a global environmental strategy up to 2000 and beyond.
- The two main European economic integrations, the European Economic Community and the Comecon have thrashed out several environmental problems in their respective areas and decided on action programmes and research projects.

Naturally, the above summary is nowhere near a complete list of moves and achievements. However, I think that not only the positive aspects of the phenomena have to be revealed, but putting them under the magnifying glass one has to analyse the shortcomings and recent problems as well. These, unfortunately, are also numerous. Let me pick out but a few:

> The recently accelerating progress of science and technology (especially in biology, agriculture and chemistry) has repeatedly raised the question of whether their tangible results are produced under properly controlled circumstances; whether the risks or dangers so far not demonstrable put possibly causing great harm in future are being taken into account.

It has often been witnessed that the introduction of significant and well-established regulations is faced with extreme difficulties and hard opposition as they affect existing interests or induce counter-interests.

It is not at all rare that regulation gives rise to an ambivalent situation in realistic implementation. This is when decision-makers ignore the extreme complexity of the environment, its deterioration or remedying, including the fact that regulating the environment means intervening with the familiar, routine mechanisms of the economy for a novel and different purpose which logically entails a new mechanism, that of bargaining, or finding loopholes in legislation. Regulation has often failed to eliminate the contradictions between environment and economy.

Neither is it rare to find unrealistic goals set either within a country or at an international level (e.g. the reduction of sulphur dioxide emission by 30% by 1994 in EEC countries).

In the field of global risks, e.g. increasing carbon dioxide content of the atmosphere, depletion of the ozone layer, desertification, pollution of the oceans, very few, if any, achievements can be registered when we consider how complex the possible solutions must be. Very little change can be detected in consumer behaviour the consequences of which have a complex impact on the environment by hindering the protection of natural resources, including the biological ones. The moves taken so far fall behind the historically necessary and feasible ones that might facilitate the emergence of a new Global Economic System, which the international aspect of environment protection would urgently require.

1986 was a bad year for the environment. Both Chernobyl and the rivers Rhine and Oder warn that international co-operation must be urgently improved. When talking of the problems, we must also mention that the work of the international organisations is often slow with a lot of "idle running", and also, several contradictions and interest conflicts are reflected in environment protection.

The lists of shortcomings and achievements could well be continued, but I think it is very hard to make a precise balance and see in which direction it is inclined. One thing is, however, certain: we must go on advocating the recognition that we are all responsible for the protection of the environment and the future of the earth.

Interestingly, the concept of environmental protection is expanding. At the beginning, the emphasis lay on pollution and pollutants while other factors, though not ignored, were not considered integratable in regulations. Pollution was the easiest to recognise, several of its adverse effects being long apparent. It is also true that the control of pollution was comparatively easy.

Though with a slight delay, the protection of natural resources (the rational utilisation and control of mineral, energy, soil and forest reserves) which often provoked hotter debates both nationally and internationally than the issues of pollution was soon integrated in environment protection. We must add that priorities are indeed hard to define and regulations hard to work out amidst the contradictions and conflicting interests in the global problems. At the same time, it is a laudable development that natural resource management has been introduced in several countries as a method of economic policy.

Another area, that of the bio-resources central to our conference, has long been discussed, but the integration of these resources, especially the genetic ones, in the protection of the environment only began recently. Undoubtedly, the problems of this area (not only those of the vanishing species but those of the new species possibly produced by biotechnology) will call for extensive national and international moves and will certainly create novel difficulties and conflicts of interests.

2. Some Theoretical Approaches

After these preliminary remarks which, I think, may give a more profound insight into the problems, let me enlarge upon the economic dimensions of the bio-environment. The necessary condition for the survival and operation of a human society is the organic and inorganic environment, therefore the interaction between society and environment is basically, though not exclusively, realised in the economic activity. Economy, or economic activity, has a complex environmental involvement.

It follows from this that ever since human society has existed, there has been a specific contradiction between environment and economy. The utilisation - and in an extreme case the destruction - of the environment and within it the bio-environment, has run parallel with the history of mankind. Fundamental biological needs - water, food, clothing, housing - determined the human activities from the very beginning. In contemporary terms, the fulfilment of these needs is concentrated in the functions of the economy.

The workings of the economy have always produced environmental problems and contradictions specific to every stage of historical progress. Of course, the relationship between economy and environment varied in profundity, content and the extent of damage from period to period, the difference being marked first of all in dimensions and adverse effects. Apparently, the environment was differently burdened when only a 100,000 people lived on our planet than today with over 4 billion people. Even today there are great regional differences depending on the level of economic development, whether the country is economically highly advanced or developing, what technologies are adopted, what the level of general consumption is. Yet the process of satisfying the human needs did not necessarily call for the present extent of exploiting and polluting the environment, and even less of endangering the bio-environment.

The environmental risks of today's economy are chiefly technological. As is well known, up-to-date technology has largely, but not necessarily, contributed to the alteration and destruction of the bio-environment. However, technology, as any phenomenon, can be viewed from another angle as well, from that of its potential use in the protection and even restoration of the bio-environment. But this cannot be translated into practice unless there is an economic mechanism that can guarantee the application of technologies in conformity with the environment.

When discussing the economic aspect of the bio-environment we must stress certain features of the economy that are particularly antagonistic to the environment.

One of the major interests of the economy is to ensure and improve its efficiency, which in a marked economy is driven by competition. In planned economies the motivation to increase is a social requirement as well. Efficiency can be heightened in various ways including the

cheapest and most favourable utilisation of nature even if this entails wasting the environment. In the course of development, for example, the selection and improvement of plant species with large yields was the aim. For this goal a simplified nature (monoculture in the extreme case) replaced the original complexity of the ecological system, barring the reversibility of the old system with all technical means.

The development of nature goes on in slow evolutionary processes. In the economy, however, the goal is fast development (return of capital) in the interest of reproduction on an increasing scale. This is one reason why even today the overriding objective of the economy is to attain short-term goals. (Even in a planned economy where the economy is adjusted to long-term goals the short-term interests have predominance.)

The absolute and relative speed of economic advancement also entails the acceleration of technical development with its well-known or still hidden dangers and adverse effects. The reverse of this is also true: technical progress is an essential factor in economic growth besides capital and the labour force (this is what the economic growth theories also prove).

Perhaps the most frequently quoted difference between the environment and the economy is the latter's aim to maximise production for which it exploits the natural resources as well. At the same time production works with a great loss since it is very rare to transform 100% of some raw material into a finished product (the efficiency rate of energy production, for instance, is 50%). As opposed to the economy, the ecosystems are balanced, working without waste as the waste of one system is the resource of the other. Economy has so far been unable to create the perfect recycling of materials, that is production without loss or waste as is the case in nature, despite promising technological attempts.

Over the recent decades when the problems of the environment have become more and more strikingly conspicuous, international literature has frequently pitted the so-called ecological approach against the economic one. Natural scientists have often blamed economists saying that the main source of the deterioration of the environment is economic growth. Another accusation has been that economics has been only peripherically concerned with the environment. A frequent argument has been that for economists (including those involved in practical areas) the environment has no value, so production paid no price for using it. Especially fierce criticism was levelled at the Marxist labour value theory.

Let me shortly respond to these views. As for the place of the environment in economic theories, it really was not included among the central issues. But why? Because economics as a social science is basically concerned with social relations and therefore it deals with property, value, commodity and money relations, with price, economic laws, distribution and economic growth. Yet several economists (J.K. Galbraith, K. Boulding, F.J. Mishan, G. Myrdal, etc.) already warned of the adverse effects of economic growth on the environment in the 60's, pointing out the increase of cases in which the advantages of economic growth would be weakened by the effects of the destroyed environment on man and the quality of his life.

As for critics attacking economic theories that allegedly do not recognise the value of the environment or its elements, I think they fail to grasp the problems in their whole complexity. To use the contemporary terms, nature (hence the bio-environment) provides a wider or narrower range or production forces depending on the stage of social and economic development (in the traditional division of production forces into capital, labour and land, land representing the production force supplied by the environment). It is, however, true that the environment has certain elements that economics cannot interpret.

Another definable content of the environment as an economic category is that it consists of a set of use values in the economic sense. Marx refers to this when saying: "Labour is not the source of all economy. Nature is just as much the source of use-values (and material economy is indeed made up of these) as labour which is only the manifestation of one natural force, human labour force."* Thus certain elements of the environment that appear as factors of production have immediate use-values as they satisfy human needs.

One has to bear in mind, however, that the produced commodities have another value which they acquire through the addition of labour, the so-called exchange-value.

The producer motivated by the possible profit concentrates on the exchange-value, ignoring the use-value. This might explain why the use-values of the environment were demoted to the periphery of the value system underlying our society and economy.

To the question of whether economic development and the concomitant technical progress must necessarily entail the pollution of the environment the following answer may be given.

Its absolute necessity is impossible to prove; it is not a general rule at all that economic growth and technical progress should inevitably imply extensive environmental pollution, and conversely, neither can it be seen as a general rule that the protection of the environment can only be ensured by necessarily curbing the economic growth. The point is that large-scale environmental pollution is a concomitant of a definite stage of economic growth and technical progress (ensuring the primacy of value production). It would be a retrograde view to claim that economic growth and technical progress as such are to be blamed for environmental pollution whereas only their definite modes produce the causes.

When talking of the values of the environment one must separately treat those that cannot be replaced artificially, that is, only nature can

reproduce them or even nature is unable to do so.

According to Marxist economics, the values of goods whose multiplication or reproduction is quantitatively limited are so-called rarity values not interpretable by the labour value theory. Those elements of the environment that cannot be reproduced (e.g. the genes of certain species with importance to society) do have values, indeed, their economic value may be very great (their extinction might exponentially harm mankind), yet the values of these cannot be derived from causes explained by the labour value theory.

To end my discussion on theoretical approaches, let me add an opposing remark. If bio-technology becomes capable of producing new species, these will value (not only use-value) on the basis of Marxist labour value theory as well, provided that they appear as commodities.

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* Marx: "Critique of the Gotha Programme"

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