
Our Future Environment

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Scientific data points to the formation of planet Earth about 4.5 billion years ago. The first putative micro-organisms appeared some 3.5 to 3.0 million years ago. Almost 2 million years have elapsed since the appearance of the first humans (*homo habilis*), while only 500,000 years separate modern mankind from early *homo sapiens*. The most ancient civilizations are reckoned to be only a few tens of thousands of years old. It is thought that the Earth is the only planet in the universe that supports life, at least in the form of higher order organisms familiar to us. All the necessary conditions for life exist on Earth. Mankind can exist too, without any difficulty, if it acts in moderation and cares for and preserves the environment. Indeed, mankind did this. During the several million years of his presence, early man co-existed in harmony with the environment, obtaining from it all that was necessary for existence and not inflicting any irreparable damage upon it. In recent times, however, especially beginning in the second half of this century, conditions have changed abruptly; so much so that it has become necessary to introduce special measures.

Our Environment Today

We can compare the Earth today to a fruit in which a worm has appeared and which is going to perish as a result. The worm consumes and destroys that

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which supports it; both the worm and the fruit confront the same fate. Such a comparison can tell us a lot about the rapid and unlimited exploitation of natural resources—including non-renewable resources, especially fuel deposits (oil, coal, peat, and natural gas), metals, and chemical raw materials—whose formation by natural processes has taken millions of years. Scientists and specialists claim that oil and natural gas reserves could be exhausted by the middle of the next century if the present rate of consumption continues unabated.

The increase in population which is taking place today throughout the world, especially in the developing countries, will itself accelerate the depletion of mineral reserves. In parallel with this, mankind's malign influences on the environment will further increase: desertification due to the felling of forests, the reduction in biodiversity and the variety and scale of air, and pollution of water and ground. There will be increased global climatic change, further destruction of the ozone layer, more landscape damage, more accumulation of dangerous waste materials, further soil erosion, and a greater reduction in soil fertility. All of this can bring growing impoverishment to populations, which can lead to outbreaks of military activity with serious consequences for the environment and for mankind. Mankind may itself destroy its own living environment. The civilized world has recognized the reality of this danger for some time. Environmentalists, scientists, and public and political figures have drawn attention to the growing deterioration of the environment. They have raised the alarm and have enkindled an active movement to preserve a healthy environment.

Sustainable Environmental Development

It is now ten years since the Gro Harlem Brundtland Commission report, *Our Common Future*, which recognized the principle of sustainable development of the environment, was presented to the United Nations. In spite of the active efforts of environmentalists, it appears that there have been no dramatic changes from the perspective of environmental protection, although there have been some impressive results. It is probably necessary periodically to analyze progress in the protection of the environment throughout the world as a whole, in its various regions, and in its independent states. It is necessary to evaluate critically the broad principles and, if necessary, to re-prioritize them and to correct policies and strategies.

Political Changes in the Contemporary World

Political changes of the greatest import have occurred in recent years through-

out the world: the collapse of the Soviet Union, of the socialist countries, and of the Warsaw Pact; the end of the Cold War; the reduced polarization of countries that were divided by allegiance to differing military blocs; and the increased aspirations towards cooperation and collaboration, including in the field of environmental protection. In place of the former socialist camp in Europe, the Newly Independent States (NIS) formed while the Commonwealth of Independent States (CIS) replaced the Soviet Union. These changes engendered great hopes about the future development of the world, hopes which have only partially been realized. The reality is harsher than was expected. The dismantling of the old political systems and their replacement by new models is proceeding with extreme difficulty and with great pain in most

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CIS countries and in central Europe. New problems have arisen. To illustrate them, we need only recall the wars in the former Yugoslavia, Moldova, and the Caucasus inspired by communists and powerful imperialist circles. Military activities in Croatia, Bosnia-Herzegovina, Nagorno Karabagh (Azerbaijan), Abkhazia (Georgia), Transdnestria (Moldova), and Chechenya (Russian Federation) have resulted in tens of thousands of casualties, including civilians—children, the elderly, women, and the ill and infirm—and extensive material losses, and at the same time have constituted a terrible blow to the economies and have served the destruction of the environment. War is still raging in the North Caucasus and in Tajikistan. The danger of war has not been removed in Transcaucasia, and military action could be renewed in Nagorno Karabagh and Abkhazia, where raids by undisciplined armed groups formed by separatist governments are continuing. Separatist leaderships have found considerable backing from reactionary forces in Russia, from whom they receive financial, material, and other assistance. And all this is happening before the eyes of the civilized world, which gives rise to significant doubts about our abilities to protect mankind from disasters, especially from the environmental point of view.

In a number of the countries of the Commonwealth of Independent States, democratization is more talk than fact, and a nostalgia for the Soviet Union and a wish for the reinstatement of an imperial and authoritarian regime have arisen. The significant victory of the communists and other nationalists in the Russian Duma elections has exacerbated the situation considerably. Conditions could get even worse if these political forces are victorious in

the forthcoming presidential election. This could result in renewed confrontation between states, the renewal of the Cold War, increased rearmament (including weapons of mass destruction), the encouragement, support, and supply of arms to extremist regimes, and other such actions so familiar from the not-too-distant past. Unfortunately, the first signs of this are already appearing.

In CIS countries the creation of an open and just state system, based on a free market economy and on open competition, is proceeding at a slow pace and has run into great difficulties. There are several reasons for this, including extremely important psychological factors and the ideological inheritance from the past. Once again the governments of the CIS countries, for the most part, comprise former Party functionaries. For many of these, democratization is more forced than it is in their nature. It is difficult today not to talk of democratization, a precondition for financial and political assistance from the West.

Ruling circles with this kind of mentality try their utmost to retain control over the land and other natural resources, and to hold a monopoly of power in the agricultural, industrial, transport and energy sectors, and in almost all areas of science and social affairs. Corruption and the plunder and misappropriation of private and public property is rife. At the same time, the destruction of the old and the snail's pace of progress towards the new have destroyed the economy and have led to the total impoverishment of a large part of the population. In these conditions of poverty, requests for the protection of the environment are put on the back burner and are very far from popular with both governments and the people.

A transformation in the supply of cheap natural resources threatens the countries of the CIS. Many international corporations and companies have rushed here to obtain these resources. To cite examples would take us far from the point, but one should be aware of oil and natural gas deposits in the region of the Caspian Sea, and its forests, fish, metal deposits, and the like.

Several companies from developed countries are attempting to bring industrial waste products into the Newly Independent States to be dumped or reprocessed, including highly toxic and radioactive waste. Low quality, often useless fodder and medicines past their sell-by date have been imported into some CIS countries for sale. The impoverished populace is forced to think less of the well-being of the environment than of their own health and that of the next generation.

The exercise of power has become even less "ecological" as a consequence of these very severe economic and social crises than it was in the time of the former Soviet Union. The Green movement has had to come to terms with a reduction in its active protection of the environment. The possibilities

have been severely restricted for governmental and non-governmental organizations to influence the protection of the environment. Their inputs to the elaboration of both strategy and policies for the economic development of the state, and also to the realization of concrete economic programmes, are restricted. Within the power structures the view is widely held that the problems of environmental protection are not the most pressing ones and that their resolution can wait. The principles of sustainable development of the environment are unpopular—one hears expressed sentiments such as, “It’s no time now to talk of the environment,” and, “First the economy and then the environment.” In spite of these words, if one listens further, one realizes that these speakers are no less environmentally minded than the next.

But political and economic development is not without its problems elsewhere in the world. There are still major ideological disputes between states, even between the major military superpowers. There are attempts at territorial break-up and at the occupation of countries rich in minerals. Useful examples of this trend are Iraq’s attempt to conquer Kuwait, the military exercises in the Taiwan Strait, the repeated violations of the military accords governing conduct in the demilitarized zone between North and South Korea, and the strong reaction on the part of the Russian Federation towards the eastward expansion of NATO. It will be extremely difficult to achieve the aim of sustainable development without resolving problems of this sort first.

At the same time, however, the great positive movements in the world—both national and supra-national—including those devoted to environmental protection, cannot be left without mention. There are many examples to support this. From the point of view of sustainable development and the protection of a healthy environment, of all that has happened in recent years it is worth singling out the unanimity expressed in the documents of the pan-European conferences in Lucerne (1993) and Sofia (1995) by environmental protection ministers, and also in the ratification by many countries of conventions such as the Rio Declaration (1992) on global climatic change, the conservation of biodiversity, transboundary issues, and the like. These developments are encouraging for environmentalists.

Reasons for Environmental Damage

Environmentalists, scientists, and prominent figures in political and public life have spoken and written on numerous occasions about the underlying reasons for the growing deterioration of the environment. There should be no doubt that the potential of the Earth’s resources to satisfy mankind’s growing demands is not unlimited. There will be no significant renewal of natural resources on a human timescale and, in time, reserves will be exhausted. The

Earth cannot satisfy mankind's demands if the rise in population continues unabated.

Without going into detail we should recognize that the main reasons for the poor state of the environment are psychological and lie in man's own egocentric nature and his yearning for a better life.

For most of the world's population, the level of general education, especially in ecology, is still low. The primacy of man's instinctive actions is apparent in his everyday domestic actions. He often does not foresee the consequences that a particular course of action can have for himself, for his family, and for future generations. Faced with today's problem, he often forgets the necessity to care for the future.

Circumstances can bring together political leaders and the state in the settlement of local or national economic and social problems. For example, they can face an energy crisis at a state level and work on a solution, but without foreseeing the potential consequences: acid rain, pollution of the environment, increased soil erosion, deleterious effects on their own territory or that of neighboring countries, or environmental damage on a global scale. Such leaders do not comprehend, or do not wish to know, that damage to their resources can bring to nothing their striving for national progress.

Are There Any Solutions?

Several fundamental difficulties in the struggle to protect the environment and to preserve its resilience have arisen as a result of the fact that mankind must defend itself and the environment from its own actions by recognizing

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the primacy of consideration for the future over individual interests. Compromises must be reached, whether at the expense of the individual family or clan, of the state or other institution, or of society as

a whole. Mankind should recognize that the overriding principle underlying its activity should be care for the well-being of future generations and the supremacy of the principle of sustainable development. Mankind's stewardship of the Earth must follow the precept of careful husbandry of natural resources, both from the quantitative standpoint and from taking into account the ability of the environment to recover from damage. It must also solve the problem of growth in the population and in the number of families.

The history of mankind makes it perfectly clear that the realization of

these principles will be extremely difficult. This is exemplified by today's high population growth rate in those countries where poverty, widespread hunger, high infant mortality, and frequent epidemics are rife. There is no let up in wars and disputes between states. But, in spite of this, it is entirely possible to realize the principles of sustainable development. Conviction is necessary, as are targeted organizational activities followed through sufficiently successfully by local, regional, national, and international governmental and non-governmental environmental protection bodies, including organizations functioning under the aegis of the UN.

It is unnecessary to state the extent to which both general and more specialist ecological education contributes to success. This is being put into practice in a number of countries with a well-developed education system: in primary schools, in colleges, in higher education, and in rearing children at home. It is also put into practice through ecology seminars, conferences, and other gatherings using public information channels, and through specialist and popular text-books and other publicity materials.

Environmentalists should ensure that the population is regularly kept completely and objectively informed about the local and regional environment. Society should be guaranteed the right to participate in any stage of the decisionmaking and implementation processes where there is a possibility of damage to the environment, its own health, or the well-being of future generations.

Scientists and specialists are today in possession of a relatively large amount of quantitative information on the potential natural resources by type, whether renewable (water, plants, animals, etc.) or non-renewable (oil, gas, coal, etc.), for individual regions, countries, and the world as a whole. Sufficiently accurate calculations have been made of how such resources could satisfy the demands of the population given the rates of consumption. There have also been studies of how such "demands" can be quantified. The maximum possible quantities of a whole range of substances that can be absorbed by the atmosphere, water, and the earth have also been calculated—that is to say, the ability of the environment to recover from pollution. However, the resource potential and the resilience of the environment need to be calculated more accurately with scientific conviction for individual regions, countries, and the world. The corresponding figures for maximum possible resource consumption and pollution levels need to be elaborated. We must also acknowledge the necessity for these limits to be enshrined in legislation. Steps should be taken based on this data to reduce absolute demand and consumption, to replace non-renewable with renewable resources, to utilize alternative energy sources—solar, wind, water, geothermal, and biomass—to develop energy- and resource-efficient technologies, and to replace for future re-use liv-

ing organisms taken from nature.

The implementation of the basic necessities of environmental protection should be compulsory for all states. It should be guaranteed by a suitable legal framework in which national legislation is harmonized with broader laws and by international conventions and agreements, the supremacy of which is recognized in national law.

Suitable structures and mechanisms must be set up by states to monitor the implementation of legislation and demands to protect the environment. To realize this, it might perhaps be necessary to set up a network of regional structures under the auspices of the UN that would provide the necessary overview in cooperation with national governmental and non-governmental organizations.

Wide legal powers should be granted to government organizations together with realistic means to exercise them so that these bodies can be included in the elaboration of state policy, strategy, and individual programs, and so that, where competent, they can be involved at all levels in their implementation. Activities of any kind that might have a negative effect on the environment should be subject to checks by environmental protection experts. Their conclusions should be an essential input before any measures are undertaken. Licences issued by environmental protection bodies governing the use of natural resources should also be obligatory, and such state bodies should be granted the power of veto over commercial activities.

It is clear that the implementation of the measures outlined in this article will not be easy and will meet with much opposition, but the means to realize them—whether political, moral or economic—are available to the civilized world. For example, the powerful leverage of transitional economies is widely acknowledged today, as has been that of the IMF, the World Bank, and other international financial institutions. These levers, in conjunction with the positions of donor countries with respect to financial aid, have greatly influenced Third World countries. In practice, the writing-off of foreign debts is also very important if funds are to be freed for environmental protection. Moral pressure on political leaders is no less important a factor.

In conclusion, I would like to express the hope that my fundamentally optimistic view of the future, for which there may not always be an abundance of concrete supporting evidence, will be justified in the long term. ☉