

SISTER NATURE

NATIONAL NATURE DAY

Protection of the environment and economic development

Address by the Governor of the Bank of Italy

Antonio Fazio

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The attention of international public opinion was first drawn to the protection of the environment and consideration of its economic aspects in the seventies, with the emergence of environmental problems of a global nature and recognition of the need to tackle them by means of internationally agreed policies.

In addition to raw materials and energy, the ability to absorb pollution and waste and ecological and climatic stability must be considered economically important environmental resources; health and the environment are also closely related.

Experience has shown that economic growth can be reconciled with protection of the environment, especially in the highly industrialized countries, where the progressive dematerialization of the economy has brought some improvement.

The environment can be seen as one of the main emerging markets. From a constraint imposed on enterprises, protecting the environment can become an incentive both to develop new sectors with considerable potential and to redefine traditional ones. Environmental policies can overlap with policies for the development of industry and services.

1. The economics of natural resources and the environment

The impetuous growth of the world economy after the Second World War led to doubts about the ability of the environment to withstand the impact, not least in relation to the spread of industrialization to the less developed countries, with their rapidly growing populations.

Until the early seventies the main contributions to economic theory with regard to natural resources and the environment were still those of classical and neoclassical economists. On the one hand, reference continued to be made to the concepts of absolute

or relative scarcity of natural resources formulated by Malthus and Ricardo, on the other, the emphasis was on the improvements in production techniques and organization that, according to Marshall, the increase in the prices of scarce goods was bound to stimulate.

In 1970 the Club of Rome commissioned the Systems Dynamics Group of the Massachusetts Institute of Technology to construct a mathematical model of the world economy with which to carry out a series of simulations. The members of the Club had drawn up a long list of potentially critical factors, including malnutrition, pollution, terrorism, the arms race, resource depletion, urban degradation, economic instability, racism and juvenile delinquency. The objective was to study the links between these problems, analyze their causes and indicate possible remedies.

The Limits to Growth, a report prepared for the Club of Rome by a group of experts directed by Dennis L. Meadows, of which more than seven million copies have been sold, catalyzed the debate on the relationship between economic growth and the environment and drew some conclusions.

Economic progress was forecast to reach a limit in the long term if the prevailing trends in world population, industrialization, pollution, food production and resource depletion continued unchanged.

The report did not consider the trends observable in the world economy, population and environment to be unalterable, but noted that the sooner corrective measures were taken the greater would be the chances of success.

The energy crisis of the seventies put the question of non-renewable resources into the political limelight.

In the model constructed by Meadows, the limited availability of essential resources meant that the increase in consumption necessarily tended towards zero, thus contradicting the main proposition of the “theory of optimum growth” that was in vogue at the time.

The neoclassical economists were among the most critical commentators, again because of the failure to consider the stimulus that the scarcity of resources would give, via the price mechanism, to technological innovation and the search for alternative materials and products. In their view the depletion of natural resources could be offset by an increase in man-made capital.

Theory has always seen environmental degradation as a situation in which economic agents impose negative externalities on society; because there are no prices to provide the incentives needed to reduce polluting emissions, the ability of the environment to absorb them is permanently under excess pressure. From Pigou onwards the imposition of a tax on polluting activities has been considered the way to fix an appropriate price.

Analysis of the limits to growth came to the fore again at the beginning of the eighties with the publication by a group of researchers commissioned by the US government of the *Global 2000 Report to the President* (1982). Based on simulations of the trends of demographic, economic and environmental variables, the report concluded that, unless the prevailing trends were reversed, by 2000 the world would be overpopulated, polluted and ecologically unstable, and that, despite the growth in material output, in many respects the world's population would be poorer.

The study had a substantial political impact. Even before it was published, President Carter discussed its main conclusions with other heads of state; subsequently, he set up a working group to identify corrective measures. The Report also stimulated academic debate and in 1984 a group of independent researchers published a counter-report entitled *The Resourceful Earth* with an optimistic scenario for the planet's future.

In the last two decades the world has had to grapple with a series of new environmental problems, including the change in the climate due to global warming, deforestation, acid rain, desertification and the degradation of river basins.

These phenomena are both effect and cause of the interactions between economies and ecosystems, which are much more complex than the conventional models of pollution and the depletion of resources had envisaged. It has become evident that resources that in theory are renewable may prove not to be so in practice. Awareness of the global nature of resource- and environment-related problems has increased; the study of ecology has developed; the concept of the sustainability, or resilience, of the ecological system has been introduced.

2. Sustainable growth

In its 1987 report entitled *Our Common Future*, the World Commission on Environment and Development, established under the aegis of the United Nations and chaired by Gro Harlem Brundtland, defined sustainable growth as that which “meets the needs of the present without compromising the ability of future generations to meet their own needs”.

The report stressed the need to give absolute priority to the essential needs of the poorest parts of the world and observed that technology and social organization can be inconsistent with the ability of the environment to absorb the effects of human activity. No ecosystem can be maintained intact, but it is necessary to preserve the ecological basis for growth.

Those who advocate the theory of sustainable growth are sceptical about the economy’s self-correcting mechanisms because the market fails to put a price on the degradation of ecosystems and public resources.

Environmental goods have some specific features. There is great uncertainty about the possibility of achieving technological progress that will increase the substitutability between natural capital and man-made capital; some of the harm done to the environment is irreversible. Environmental damage may suddenly become manifest when it exceeds some unpredictable threshold.

Lastly, there is the question of equity; the need to improve the standard of living of the poorest populations and that of future generations.

As for the possibilities opened up by technological progress, the picture is not clear: there are those who contend that economic activity will inevitably require an increasing quantity of natural resources; others have greater confidence in the possibility of altering the relationship between economic growth, the consumption of raw materials and energy, and the ability to absorb and recycle waste.

On the one hand, there is a highly formal theory of growth concerned with how to keep an economy on a path of steadily and rapidly rising output; on the other, a less formal theory combining notions of sociology, anthropology and political science.

The concept of development is much broader than that of economic growth; it includes qualitative factors related to the institutional and socio-political structure. Development consists in a set of socially desirable objectives that may change over time; it embraces ethical values.

The condition of sustainability can refer to material wealth, natural capital and man-made capital or just to natural capital. In the latter, narrower, sense it is necessary to transmit the same amount of natural resources to future generations. In other words, it is necessary to leave intact the potential of the environment to produce wealth, so as to allow future generations to choose between using and not using the natural heritage, between different levels of material well-being and quality of the environment.

The two approaches are based on different conceptions of well-being and intergenerational responsibility.

The concept of sustainability can be even more demanding: the preservation of species and ecosystems may be desirable independently of any relationship with the economic system, making it necessary to ensure the stability of ecosystems and not just of levels of consumption.

Knowledge should be directed less to promoting a continuous expansion of consumption and more to ensuring the symmetry of the relationships between man and the ecosystem.

3. *Environmental policy*

In line with the general and widely accepted objective of sustainable growth, environmental policy serves to pursue specific objectives: the use of renewable resources, including the ability of the environment to absorb polluting emissions, must not exceed its regenerative capacity, whether natural or fostered; the use of non-renewable resources must be determined in relation to our ability to replace them with new technologies or renewable resources.

Environmental goods are public goods *par excellence*. The costs incurred in defending the environment benefit everyone. In this field only public action can coordinate widespread interests and decide how the costs are to be shared out.

In order to set a price on goods for which there is no market, it is possible to grant economic incentives, impose specific costs or lay down rules and prohibitions.

Where feasible, solutions based on producers' and consumers' economic advantage are to be preferred to rules and prohibitions. Measures that incorporate negative externalities in production costs or provide incentives for technological innovations that are beneficial to the environment are likely to prove more effective.

But the price signal must be strong and the expected response sufficient to modify behaviour to the extent required. Hence, in general there is a limit to the effectiveness of environmental taxes and other economic mechanisms when the problems to be tackled do not allow partial or gradual adaptation.

In practice intervention to date has mainly been in the form of rules and prohibitions, partly because they have often proved socially and ethically more acceptable and better able to distinguish between economic interests and values.

It would be an illusion to believe that public intervention is cost-free in terms of efficiency, that it is always the most rational response to the new demands expressed by society. It has to overcome informational problems and requires foresight. Ways must be found to achieve complementarity between public regulation and the ability of the price mechanism to provide incentives.

This interaction is of great importance in complex questions such as that posed by agricultural policy. Appropriately, in the nineties a start was made on remedying the distortions caused by measures to support farm incomes based on guaranteed prices and export subsidies. A lower level of protection for the products of countries that use land intensively would probably bring an overall gain for the environment.

Benefits can also stem from granting direct income support to those who remain to “defend” land that, if abandoned, would be prone to hydrogeological degradation.

Stringent rules are still needed to combat the adverse effects of excessive use of fertilizers and pesticides in crop and livestock farming. High quality farming is potentially capable of reconciling environmental needs with the competitiveness of our productive systems.

Agricultural affairs link up with international economic policy issues that involve many other activities. They take us into the domain of global public goods and the question of a more open system of international trade.

The removal of tariff and technical barriers for some categories of product can contribute not only to the overall development of the countries concerned but also to the global environment by allowing less advanced countries to undertake new productive activities, thereby reducing the intensity with which natural resources are exploited.

The road to take is that of multilateral negotiation, along the lines of the arduous progress being made in international fora. The recognition of a common interest is the first step towards tackling the issues regarding the sustainability of world economic growth and reaching agreement on how the sacrifices are to be shared among the participating countries.

The question of non-renewable resources has been brought to the fore again by the rise in oil prices. Participants in the recent meetings of the International Monetary Fund and the World Bank indicated their intention of holding talks with a view to formulating coordinated public measures, which, together with the autonomous decisions of producers, can remedy the new shortfalls in supply, through the orientation of economic agents' behaviour and the search for technologically advanced solutions and alternative materials and sources. The time scale must be short or bottlenecks will block the development of countries that have only just begun to emerge from a state of backwardness and whose destinies are important both on grounds of equity and because we are increasingly linked to them by the globalization of trade.

4. The promotion of sustainable growth

The relationship between living standards and environmental conditions is not a simple one. Many of the environmental problems faced by developing countries, such as certain types of water and air pollution, are a direct consequence of poverty.

Improved living standards increase people's willingness to pay for a cleaner environment; this is not possible where man's essential needs are not met.

On the other hand, where regulations and environmental policy measures are inadequate, refuse will accumulate and emissions of harmful gases will tend to increase as the economy grows.

The industrial countries have gone some way towards decoupling economic growth from the use of natural resources, but much remains to be done; for instance in reducing the emission of gases responsible for the greenhouse effect. Developed countries are frequently faced with problems and costs that derive from the failure to consider environmental issues when taking economic decisions.

For growth and the environment to be compatible, ecological considerations must become a part of collective and individual decisions and conduct.

In Europe the need for coordination between environmental, economic and sectoral policies is explicitly recognized in the Treaty establishing the European Community.

The sectors having the greatest impact on the environment have been identified in the *Fifth Action Plan for the Environment*, which incorporated the recommendations of the 1992 Rio de Janeiro summit.

The European Commission now constantly monitors and evaluates these issues.

At the end of last year the Commission was able to report some progress. There has been an improvement in the quality of water and emissions of many substances held to be responsible for destroying the ozone layer have been reduced. In some respects and sectors, however, the pressure on the environment has not been eased; in fact it is tending to increase. It is the Commission's belief that unless environmental issues are tackled at their roots and unless all the interested parties and the entire community do their part, growth will become unsustainable.

Changes in climate are probably the most complex environmental issue. The last century saw a sharp rise in atmospheric concentrations of greenhouse gases such as carbon dioxide. The European Union's contribution to the total emissions by developed countries was estimated at about 25 per cent in 1990: the Kyoto protocol set a reduction

of 8 per cent on the 1990 figure as the target for the years 2008-2012. Projections up to 2010 point, instead, to further increases, making more drastic measures necessary.

In the European Union natural resources and biodiversity — i.e. all the existing animal and vegetable species, their genetic heritage and the ecosystems of which they are a part — are still being threatened by urban development and polluting agricultural techniques. The marginalization and abandonment of some traditional crops also constitute a risk. The reform of the Common Agricultural Policy and the criteria for allocating structural funds are helping to overcome these problems.

Italy possesses a magnificent natural heritage. Its conservation is a measure of the country's progress, civic-mindedness and cultural sensibility.

The laws governing the environment have brought considerable improvements in the quality of water. The number of heavily polluted rivers has fallen, but the issue of water resources and their management is complicated by the fragmented and inefficient distribution system; the state of the network is unsatisfactory.

Unregulated urban development gives rise to a concentration of environmental issues. The levels of acoustic and atmospheric pollution are tending to rise. The growth in the production of refuse is outpacing that in income.

The last few years have seen some issues become more pressing while others have emerged: we still know too little about the damage potential of three quarters of the most widely used chemical products; the know-how for producing genetically modified organisms may bring benefits, but concern about the means for controlling their effect on health and the environment is intensifying.

Economic growth calls for increasing quantities of energy, notwithstanding the decline in the energy intensity of output. According to the OECD, between 1973 and 1998 the energy requirement of the EU member countries rose by 25 per cent, while

GDP grew by 70 per cent. The bulk of energy production is still supplied by non-renewable sources, which have a profound effect on the environment. In Italy they still account for 88 per cent of overall consumption.

In the transport sector the main source of energy consists of oil products; in the last ten years the rapid expansion in the numbers of vehicles has offset the benefits of the technological improvements that have been made. Policies to alter the balance between the various means of transport are necessary, especially in urban areas.

5. The production of goods and services to protect the environment

In the developed countries the demand for environmental and health goods is rising; its elasticity with respect to income is greater than one. There is a greater willingness to bear the cost of public measures to protect natural resources.

Demographic changes are reshaping the composition of demand, increasing that for goods to meet the needs of a population whose non-working lives are now longer; they require greater investment in health-related services and in those for the elderly.

The supply of environmental goods can come from dedicated activities in both the public and the private sectors; such activities are becoming an important part of the economy.

The Ministry for the Environment estimates that about 1 per cent of GDP is accounted for by goods and facilities that reduce the use of raw materials and environmental damage and by clean-up activities.

A broader definition of the field would include the defence and preservation of the land carried out by agriculture and public investment aimed at protection of the soil and reforestation. It should also take account of the production and distribution of renewable

energy, of activities aimed at conserving the natural heritage and those that guarantee the enjoyment of parks and green spaces. Taken together, these activities are of greater economic importance than the narrowly-defined environment industry itself.

More and more firms are already implementing plans involving product and process innovation with a view to earning the so-called “green certificate”. Voluntary agreements between firms, their trade associations and the authorities are an investment in good repute. Industry is being encouraged to use its technological know-how to achieve results that public sector measures could not otherwise achieve. Farming is turning increasingly to biological products of proven origin and quality. Food processors are investing more in improved health checks on raw materials, processing, conservation and packaging.

The sector is producing international specializations, in which Italy is frequently in the forefront. It is both probable and desirable that the quality food market will continue to develop. The process of liberalizing international trade in agricultural commodities and food products for general consumption must continue.

Environmental conservation policies can foster the development of productive activities, rather than clash with them.

Grasping the opportunities offered by protecting the natural heritage can help bring a further gradual dematerialization of the economy. This process is closely linked to the shift in demand towards services and — so far as industrial products are concerned — towards goods with a higher value added and service content.

The development of information technology and telecommunications helps to reduce the impact of economic activity on the environment, by permitting more sophisticated quality control at every stage of production, the use of fewer materials and less space, and less physical transportation of both persons and information.

Major opportunities are being opened up by policies for urban and long-distance transport, programmes of urban renewal in large cities and the enhancement of their historical centres, measures to protect landscapes and natural environments, and action to prevent hydrogeological degradation.

By caring for our woodlands and for all the elements of a hydrogeological equilibrium, we can reduce the human and economic costs that recent events have highlighted in all their gravity. Safeguards and preventive measures must be put in place and controls strengthened.

Each year Italy's natural and artistic heritage attracts large numbers of tourists. Last year almost 75 million persons stayed in Italian tourist structures. The full potential of tourism is nonetheless still largely underdeveloped in many areas of the country.

The Mezzogiorno is two fifths of Italy's total surface area; it has three quarters of the total coastline and 56 per cent of all the archeological sites. But it has only 20 per cent of total overnight stays, and an even lower percentage of foreign tourists.

The South suffers from shortcomings in every kind of infrastructure. In proportion to its population and surface area, the level is about half that of the Centre and North for energy, water resources and communications. There is also a wide gap in the health, educational, cultural and recreational infrastructure of the South in comparison with the rest of the country. Supply is both inadequate and underused.

The Southern Italy Development Programme recently adopted aims to make the best possible use of natural, environmental and cultural resources and allocates to this goal about one quarter of the public-sector investment provided for in the Community Support Framework for the period 2000-2006; together with Italian funding, this makes a total of about 20 trillion lire.

Never again must procrastination, an inadequate project development capability and administrative unpreparedness risk squandering opportunities for growth. Such favourable circumstances are unlikely to be repeated.

6. Conclusions

Environmental issues intersect with Italy's growth prospects. Costs will have to be borne, but major opportunities can be created.

It is a challenge to fulfil the individual and collective needs associated with caring for health and the environment. It could be the objective of a sort of reconstruction plan aimed at improving the quality of city life, providing infrastructure consistent with Italy's international role, making more rational use of the territory and better exploiting Italy's natural and cultural comparative advantage.

It has been suggested that, in comparison with earlier times, today's social legacy consists much more of knowledge, equipment and institutions than natural resources. Public works, a stable social fabric and the richness of the cultural heritage can help us to fulfil our intergenerational duty.

Intergenerational solidarity is one of the founding values of voluntary organizations such as *Sister Nature*, which has brought us together here today. The non-profit sector can help to spread a proper approach to the environment. If suitable returns can be guaranteed, banking can contribute to exploiting our environmental and cultural heritage.

Policies are an essential part of this process. They must direct behaviour so as to reconcile economic development with environmental protection. The public must be informed and participate, starting with the young, who are more open to idealistic values. Cooperation between the various levels of local and central government is of fundamental importance.

We can contribute to the growth of the less developed countries — to whose lot we are more sensitive nowadays — by transferring know-how and technologies that will have less impact on their natural resources while increasing productivity. A considerable boost can come from new international trade agreements to give these countries greater access to our markets.

A great Pope taught us that the name of peace is development. Assisi is the chosen venue for the promoters of peace. Here, as Dante wrote, “a sun was born into the world Therefore let him who names this place not say *Ascesi* ... but *Orient*, if he would name it rightly”.

The antinomy between nature and production, beauty and progress, tradition and modernity can and must be overcome. In this a sublime vision can be our guide:

Praise to thee, my Lord, for sister Moon and the stars ...
Praise to thee, for sister Water,
which is very useful and humble and precious and pure ...
Praise to thee, my Lord, for our sister Mother Earth,
who nourishes and cares for us,
and produces diverse fruits with coloured flowers and grass.

This Canticle, which St. Francis sang seven centuries ago, will help us to rediscover harmony.