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REPORT

ON

"THE ENVIRONMENT IN CENTRAL AND EASTERN EUROPE: THE ROLE AND RESPONSIBILITIES OF LOCAL AND REGIONAL AUTHORITIES

(Rapporteur: Mr A. Molnar, Hungary)

presented by the
Committee on the Natural and Built Environment
of the former CLRAE

EXPLANATORY MEMORANDUM

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INTRODUCTION

The CLRAE Committee on the Natural and Built Environment decided, early in 1993, to prepare a report on "The Environment in Central and Eastern Europe: the Role and Responsibilities of Local and Regional Authorities".

Although the distinction is somewhat artificial, the Committee decided to divide the report into two sections:- one relating to the environment in the Baltic area and the other for all countries other than the Eastern Baltic riparian states.

The Committee appointed as Rapporteur for the Baltic area report Mr Markku Pohjola from Finland and, for the report for other countries in Central and Eastern Europe Mr Arpád Molnar from Hungary.

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For the following report prepared by Mr Molnar for the principal countries in Eastern Europe and part of Central Europe, the basic structure of the report was agreed at a meeting of a working group on the environment in Central and Eastern Europe, created by the parent Committee on the Natural and Built Environment, at a meeting in Siófok (Hungary) in June 1993.

The group felt that, in order to have a full picture of the role of local and regional authorities on environmental protection in the countries concerned, information should be obtained on wider considerations.

Both the group and the Rapporteur therefore proposed that the report should be structured around the following principal areas:

- The physical state of the environment
- The current situation on environmental protection
- New principles and new approaches
- Raising public awareness, mobilising support for environmental protection and education for the environment
- Multilateral co-operation and international organisations.

Using as a basis a model reply drawn up from Hungary by the Rapporteur, Mr Molnar, the relevant authorities in the relevant countries were asked to produce material relating to the above aspects.

Replies have been received from: Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and Slovenia.

However, additional material from the Czech Republic arrived too late for incorporation into the current report and will be published as a supplement after the Session of the Congress. Similarly, extensive material from Romania has been only partly included. The full text will be published as a subsequent supplement.

It is also the case that the material from some countries does not address each of the five chapters.

The Rapporteur has included, at the end of the report, a conclusion which brings together the principal trends.

He has also included in the conclusion a section on the specific role of local authorities, as a supplement to the information on this question which appears at different points throughout the report as a whole.

THE PHYSICAL STATE OF THE ENVIRONMENT

A. THE PHYSICAL STATE OF THE ENVIRONMENT

1. ALBANIA

The pollution of the urban environment has become a real concern in some of the main cities of Albania. These problems and the inappropriate conditions actually encountered derive from the wrong policy followed by the ex-communist system, for the development of town planning, trade, industry and from the inefficient use of energy resources.

Centralised planning, budget restrictions and the control of prices led to the deterioration of the urban environment and to a massive decrease in the quality of people's lives.

The practices used during the last 46 years are another example of the failure of the communist system not only in economy but also in environmental administration.

In spite of international assistance already received, there is still a lack of legal and institutional frameworks for local authorities and a lack of an environmental monitoring system. There are economic and financial difficulties in carrying out the programmes and achieving an effective control for the pollution of the urban environment.

2. BULGARIA

The natural and built environment in Bulgaria were heavily exploited during the 45 years of the communist regime and totalitarian government. The aim "to prove the advantages of the communist system" led to the unscrupulous industrialisation of the Bulgarian economy, polluting the air, the water, the soil and leaving mountains of solid waste, regardless of the consequences.

i. Air

There are a number of serious environmental problems caused by the industrial sector, particularly heavy industry. Air pollution is one of the worst. Production of ferrous metals (mostly in Sofia and Pernik) emits 74 tons of dust, 33,000 tons of SO and 40,000 tons of NO_x into the atmosphere annually. Non-ferrous metallurgy produces a considerable amount of toxic metals, emitting 4 billion cubic metres of gases into the atmosphere. Chemical industry pollutes the atmosphere with fluorine compounds, ammonia, H_2S, CS_2, phenols, hydrogen sulphides - methylmercaptans and dioxins. 980 tons of fluorine compounds are emitted annually. Cement plants throw out 100,000 tons of dust every year. Energy production makes use of fossil fuels and emits 1.3 million tons of SO; 0.15 million tons of NO_x; 0.02 million tons of CO; and 0.19 million tons of dust into the atmosphere. This is due to the use of old technologies and old and worn-out technical equipment.

Only 60% of the population have central heating in their homes. The remaining 40% use different types of heaters, polluting the atmosphere with about 100,000 tons of SO, 700,000 tons of NO_x and 110,000 tons of dust annually.

There is also a significant air pollution problem associated with car, bus and truck transport, especially in the larger cities. 17% of the transport in the country is automobile transport. The motor vehicles are old and worn-out. They emit 930,000 tons of CO; 95,000 tons of NO_x; 150,000 tons of carbohydrogens (C_xH_x) and 200 tons of lead into the atmosphere annually. In some towns, the share of the automobile pollution is greater than the share of the industrial one.

Some of the most polluted towns in Bulgaria are: Sofia - Kremikovtzi; Varna - Devnya; Bourgas; Rousse; Dimitrovgrad; Vratza; Pernik; Pleven; Pazardjik; Kurdjali; Srednogorie.

It is necessary to emphasise that the problem of air pollution refers to areas around large industrial or energy plants and factories (emitters of gases), whilst certain regions have clean air and such problems are practically unknown to them.

ii. **Land**

Pollution of the land is also a problem in Bulgaria. About 60% of the arable land is polluted with chemicals, fertilisers and metals. Contamination from heavy metals such as lead, zinc, copper, arsenic and others represents a serious danger to people, crops, cattle and wildlife in many communities throughout the country.

Industry has deposited heavy metals on 100,000 hectares of agricultural land. More than 47,400 hectares are contaminated in excess of norms. 61.3% of contamination is due to industry; 34.68% to agricultural chemistry and 4.1% to transport.

Due to the system of cooperative farming during the last 45 years, arable land in Bulgaria was reduced by about 30%.

Nearly half of the soil in Bulgaria is genetically of low-acid type and because of incompetent exploitation about 30,000 hectares of soil was salted.

There are about 60,000 hectares of desolate land, the sloping areas are not cultivated because of lack of appropriate technical equipment.

In recent years, about 11,000 tons of various pesticides (herbicides, insecticides and fungicides) were imported annually at the cost of 50 million US$. In the last 12 months, the cost of pesticides has increased tenfold, effectively reducing their application. Whilst this has a comparatively positive effect on nature conservation, it has a negative impact on agricultural production, causing mixed feelings both for farmers and nature conservationists.

In the mines, the so-called geo-technological method was applied and, as a result, 2.5 million tons of sulphuric acid (H_2SO_4) were deposited into the adjacent soil.

Nuclear power production in Kozloduy pollutes the nearby territory with radioactive substances.

Forests in Bulgaria represent 35% of the territory of the country, with about 3,873,550 hectares. The high percentage of forests ranks Bulgaria on a high European level. But 41% of the forests show different stages of defoliant damage.

iii. **Water**

Information about the state of groundwater is received from 200 stations: around the Black Sea from 23 stations; around the Danube river from 21 stations and around the underground waters from 276 stations.

Data shows that water pollution affects the Black Sea, the Danube river and the 13 major rivers in the country. Only one river can be considered comparatively clean. Six rivers are seriously polluted with ammonia, oil, pharmaceutical waste, copper, nitrogen trioxide, etc. The most polluted rivers in Bulgaria are Ogosta, Iskar, Vit, Osam, Mesta and Struma.

During the period 1944-1958, uranium mines poured their waste water directly into the rivers and, via the irrigation system, polluted vast territories. Nowadays there are waste depositories, but they only decrease the pollution without stopping it. This leads to the pollution of underground water, often used for drinking water.

As a result of over-fertilisation in agriculture, there is a great amount of nitrates in the soil as well as in drinking water - up to six times the permissible concentration.

There are towns like Svishtov and Dimitrovgrad where the amount of MnO in drinking water is from 10 to 100 times greater than the permissible level.

A total 1,011,781 cubic metres of water have to be purified (mechanically, chemically or biologically) daily, because of pollution caused by the chemical industry alone.

Another basic polluter of river waters is the lack of effective sewage facilities. Only about 150 towns with more than 50,000 inhabitants have sewage systems and only 30% of these systems adequately perform their functions.

Lately, the data from river water monitoring shows a slight tendency of less pollution due to the decrease in industrial and agricultural pollution.

The waters of the Danube show an increase in pollution near the towns of Vidin, Svishtov and Rousse. The waters of its tributaries are polluted as well, especially Lom, Iskar, Vit and Yantra. The nuclear power plant (NPP) near Kozloduy uses 150 cubic metres of water per second for cooling. The temperature of the water flowing back into the river is 15°C higher than its normal temperature. The Black Sea is a landlocked sea. The biggest river feeding it is the Danube. Every day, 81,300 cubic metres of waste water used for daily needs and 87,900 cubic metres of waste water used in industry flow into the sea from Bulgaria alone. The Bourgas Bay is polluted by petroleum products; emissions are up to 100 times greater than the permissible concentration. It is also polluted with heavy metals and radioactive substances.

iv. Solid waste and landfill problems

More than 2 billion tons of solid waste are stored in 300 large and 1,300 smaller landfills in Bulgaria. 65.6% of this waste is from the mining industry; 30.2% from energy plants; 3.5% from the chemical industry. Huge waste piles exist beside almost every industrial enterprise, usually on agricultural land. Most Bulgarian communities have serious landfill problems - the landfills are often located on unsuitable sites; badly equipped (or without any equipment); inappropriately maintained. These open landfills contribute to water and soil pollution; their high concentration and slow process of decay practically turn them into everlasting non-renewable sites.

During the last few years, in spite of the decrease in industrial production, there exists a tendency for increase of waste, due to problems of a technological, economic and social nature.

v. **Nuclear energy problems**

The NPP in Kozloduy is located on the Danube river close to the Romanian border. It produces almost 40% of Bulgaria's electricity output. When the plant was constructed, safety considerations were of secondary importance. Lately, an evaluation by the International Atomic Energy Agency was made, which indicated significant safety problems. Further steps to improve its security should be undertaken immediately. The construction of a second NPP near Belene (also on the Danube) was stopped by intense public protest

vi. **Impact on human health**

About 12% of the population (1.1 million) live in so-called "hot spots" - areas with the most serious environmental problems, due to ferrous and non-ferrous metallurgy, chemical and cement factories. Citizens of these most polluted communities suffer from respiratory diseases, skin diseases, cancer and other illnesses, not to mention specific "professional" illnesses existing among the workers of some industrial branches and mining.

For many years, information about the impact of pollution on human health was prohibited. The results of recent medical investigations in some badly polluted towns and villages produced terrifying data. For example, because of the Lead and Zinc Plant near Plovdiv, the amount of heavy metals in the blood, hair and nails of children living there exceeds the permissible concentration from 5 to 50 times and is a great threat to their health. According to specialists, children from such areas will inevitably suffer from some socially significant disease and their average life expectancy will be 50 years.

3. CZECH REPUBLIC

The fact that the former socialist organisation of the Czechoslovak economy disregarded economic and social laws led to structural and regional anomalies, which have recently been exacerbated by the break-up of the Federation.

As recently as 1990 the Czech and Slovak Federal Republic was near the bottom of the European league table where the total energy consumption index was concerned, with a Gross National Product of US$ 1 million, which indicates the degree of production efficiency and also the corresponding strain on the environment. The transformation of the economy in the Czech Republic, where market conditions now prevail, has given primacy to the principles of modern structural change: less dependence on energy resources and raw materials, rational exploitation of manpower and energy, and reduced damage to the landscape and the environment.

The quantity of energy produced per head of population, and the structure, technology and modes of exploitation of energy represent one of the main indicators of the threat to the environment.

The state of the environment, and particularly the air, in the Czech Republic is one of the most disturbing in Europe. The REZZO (register of sources of air pollution) system, which is now part of the ISKO (air quality information system) data base, has since 1991 been supplying valuable data to the international project CORINAIR 90, which is a joint European Communities (EC) and UNECE (United Nations Economic Commission for Europe) computer system.

The emission levels set out below were supplied to REZZO by personnel in charge of air-polluting industries. They therefore comprise some mistakes, but this is a minor problem as REZZO has been in operation for a number of years and the air protection inspectorate has checked on the data. However, the emission levels on particles and sulphur dioxide are probably rather lower than higher.

Sulphur dioxide. The maximum emission level was noted in 1982 (2,322,174 T), but since 1984 the quantity of emissions has been gradually decreasing. The largest decrease was in 1990 (1,876,000 T) as a result of the economic changes, the decline in production and other factors. In 1994 a further decrease in emissions was registered (1,775,561 T).

Dust. Emissions have regularly decreased, from 673,000 T in 1989 to 591,617 T in 1991.

Nitrogen oxides. From 1985 (795,000 T) to 1989 (920,000 T), nitrogen oxide emissions increased in parallel to the development of road traffic. In 1990 and 1991 emissions gradually dropped to 725,000 T.

Carbon monoxide. There has been a similar increase in these emissions, probably owing to the growth in road traffic: 885,000 T in 1989 to 1,101,920 T in 1991.

The impact of road traffic on the environment is to some extent confirmed by the parallel increase in CxHy emissions, from 139,000 T in 1988 to 228,000 T in 1989 and 227,160 T in 1991.

On the basis of macro-economic data and with the help of derivative factors, a preliminary evaluation of overall emissions of carbon dioxide from industries using combustion and related activities in the Czech Republic gives the following results: 186,712,000 T in 1985: 163,871,000 T in 1990, and 153,830,000 T in 1991.

Analysing the air pollution situation throughout the territory of the Czech Republic, it is noted that:

- the most serious sulphur dioxide pollution occurs in the basin at the foot of the Ore Mountains (Podrusnohorior), Erzgebirge, particularly in the districts of Teplice, Most, Chomutov and Prague city centre;

- the most serious nitrogen oxide pollution occurs in Prague, in the basin at the foot of the Ore Mountains, in the Ostrava region and in a number of other towns;

- the most serious aerosol particle pollution occurs in the Ostrava region, in Prague city centre and in the basin at the foot of the Ore Mountains.

These data pinpoint three particularly threatened areas in the Czech Republic: the basin at the foot of the Ore Mountains, Prague city centre, and the north-east section of the Ostrava region.

i. <u>Noise</u>

Noise is an important factor for the quality of any urban environment, and it may be considered as the element which is the most deleterious to the health of local populations. Currently, over 90% of noise stems from human activities, with 80% caused by means of transport, particularly motor cars. In some regions the noise is predominantly caused by aircraft, although we should not overlook rail transport, particularly in the immediate vicinity of rail junctions.

Comparing all areas of the country, the populations subjected to the highest levels of noise are as follows: Prague (46.1%) and Northern Moravia (29.6%).

ii. <u>CFCs</u>

CFC-12 is the ozone damaging agent with the highest rate of consumption in the Czech Republic. Nevertheless, in absolute terms, the consumption of these agents decreased in 1992 to 51% of its 1986 level. Consumption continued to decrease until 1991. The 1992 increase was due, in the case of CFC-11, to increased imports and the production of polyurethane (PUR) thermal insulating foam used i the construction industry, and in the case of CFC-113 to its use as a chemical semi-finished product. The high prevalence of CFC-121 and HCFC-22 is due to their use in imported refrigerators; CFC-1214 is used in producing

medicinal aerosols. Consumption of methyl chloroform (1, 1, 1- trichlorothane) has increased as a result of high demand from the chemicals industry. In 1992 the total consumption of CFCs was 2,702.5 T.

The high rate of energy and raw material consumption in the Czech Republic is also reflected in excessive waste production. Waste is neither sufficiently recycled nor properly stored. Waste processing programmes showed that the total annual production throughout the Czech territory in 1991 was 188,200,000 T, of which 71,300,000 T were made up of soil and slag and 21,100,000 T of hazardous waste, ie 11.2% of all waste. In comparison with data from abroad, total production of hazardous waste - 1,957 kg per inhabitant per year - exceeds that of developed countries by 1 or 2%. The maximum levels of such waste are produced in the regions of Brno, Ostrava and Central Bohemia.

iii. **Waste**

Municipal waste is made up of a mixture of refuse from residential areas, municipal amenities and industrial estates. In all the Czech Republic in 1991 produced a total of 4,877,000 T of municipal waste, which represents 2.6% of all waste produced and corresponds to 472 kg of municipal waste per inhabitant per year.

Of all municipal waste, only 0.3% is recycled and 0.4% used to make compost. 2.9% is incinerated and 96.4% stored in dumps.

iv. **Water**

In 1992, 8,710,000 inhabitants of the Czech Republic, or 84.5% of the total population, were supplied with water through municipal mains services, and 7,500,000 inhabitants, or 72.5% of the population, resided in dwellings connected to the municipal sewage mains. These two data also cover small water and sewage systems directly managed by the municipalities. Compared with the figures for 1991, this represents a 0.5% increase in the number of inhabitants connected to the water mains and a 0.4% increase for those connected to the sewage mains. In 1992, the municipal mains systems handled a total of 1,172,900,000 m^3 of water.

If annual water use is compared with annual water supply, there is an ongoing decline in the quantity of water supplied and invoiced. This decrease in use concerns both households (where individuals are beginning to feel the need to save water) and industry, where this effect is reinforced by the transformation and restriction of production activities.

For four successive years the negative hydrological conditions have persisted, necessitating a slight reduction in the quantity of drinking water supplied in over 600 local areas.

Drinking water quality is a serious problem. The requisite measures to improve water quality were identified on the basis of analyses of water treated in 1991. Water quality can be modified not only through treatment technology (which is sometimes limited by the quality

of incoming water) but also by improving the quality of surface and underground water, which is extremely poor because of excessive pollution. It has been ascertained that 106 water treatment centres, handling a total capacity of 4,750 l.s-l, are at risk.

If the requisite sums for renovation (estimated at 1992 rates), ie approximately 47,000 million Kc, were made available, the rate of compliance with quality standards could be raised from the current 62.5% to 88%. An investment of 45,000 million Kc could improve the most important indices from the health angle: instead of the current 95.6% we could achieve 99% of the total volume of water treated.

In 1992, 5,058 (5,086 in 1991) sources of sewage pollution were recorded, according to the BOD5 rating (biochemical oxygen demand), 5,000 (4,971) sources according to the "particles in suspension" rating, 313 sources comprising petroleum substances, and 1,070 sources comprising anorganic salts in solution.

A number of cases have been noted of raw sewage being discharged into the Elbe (31%), and this applies to some fairly large towns.

v. **Land**

In 1992 a slight decrease was noted over the previous year in ploughland in most parts of the Czech Republic. The most noticeable decrease (2% to 4%) was recorded in the districts of Northern Bohemia as a result of opencast coal-mining. Overall losses in terms of ploughland, however, remained fairly limited because land which had been used by now exhausted mines reverted to their original agricultural role.

Until 1990 the average consumption of chemical fertilisers (calculated in pure nutritional materials) could amount to approximately 200 kg per hectare. This volume dropped noticeably in 1991, to only 65 kg per hectare. This volume dropped considerably in 1991, to only 65 kg per hectare. This has led to a price rise for chemical fertilisers and a reduction in the doses used, spurred on by ecological considerations. The same considerations have led to a reduction in pesticide consumption.

The destruction of the Czech forests by air pollution is as follows, at 30 June 1992: conifers accounting for 48.72% of the total area, or 56.16% of resources) - with symptoms: 28.07 to 28.83%; slight damage: 15.50 to 20.96%; medium damage: 4.11 to 5.46%; severe damage: 0.70 to 0.76%; very severe damage: 0.15 to 0.09%; broad-leaved trees, (accounting for 11.13% of the total area, or 7.95% of resources) - with symptoms: 8.89 to 6.16%; moderate damage 2.05 to 1.23%; medium from 0.10 to 0.11%.

vi. **Some positive trends**

The introduction of the market economy in 1991 decreased the productivity of the entire national economy, particularly the activities of industrial sectors consuming raw materials and energy. Reduced demand means reduced production and consumption of fuel and energy.

In 1992 the Czech Republic consumed an estimated 1,797 PJ (petajoules) of energy. This represents a drop of 15.7% as compared with 1990. The reduction concerned all types of fuel and energy, particularly solid fuel (9.8% as compared with 1991). Only the consumption of liquid fuels increased, by 5.9%.

The energy utilisation structure is beginning to improve: the rate of consumption of solid fuels is decreasing and that of fuels less harmful to the natural environment increasing. Amortisation of the costs of coal-mining is continuing, which means that the rate of utilisation of national energy resources is decreasing. The drop in industrial and agricultural production and the compensatory increase in building activities, which mainly concern road and other transport, are reflected in a corresponding total consumption rate and a major decrease in the quantity of fuels and articles produced by means of energy processes. In the long term the upward trend is electrical energy consumption will be sustained by the increasing supplies of household appliances. The welcome decrease in industrial demand is reflected in a 3.3% decrease in the overall production of electrical energy, with a 4% drop for steam turbine power stations. The proportion of energy production for steam turbine power stations has continued to fall, now being at 76.5%, and the proportion for nuclear power stations has risen to 20.7%. The damage to the Northern Bohemian landscape has also been lessened with the closure of a number of coal-fired power stations.

Conditions in the Czech Republic are not conducive to developing methods of electricity production using geothermic resources, wind energy, etc. Furthermore, the hydrological conditions rule out the construction of large hydro-electric power stations.

4. HUNGARY

The state of the environment improved to some extent in some areas and degradation processes slowed in the most heavily polluted areas. Total energy consumption decreased in Hungary almost by 20% in 1991. Similarly, the air and water pollution as well as the soil degradation and waste production showed signs of decrease. It should be emphasised, however, that these partial improvements are the consequence of the economic difficulties which caused the shutting down of one third of the large polluting and energy squandering industries.

i. Air, water and soil

The air is seriously polluted in nine regions of the country. Whilst these regions cover only 8% of the country's physical area, they affect 4,000,000 people (nearly 40% of the population). At the beginning of the 1990s, Hungary was the second highest emitter of SO_2 per capita and the third highest of NO_x in Central and Eastern Europe. Emission of both pollutants per $1000 of Gross National Product in early 1990 was almost 9 times higher than the average in the countries which make up the European Communities in the West. In short, the low levels of per capita productivity in Hungary, coupled with the high levels of air pollution per unit of productivity creates a severe obstacle for investment. The transportation sector also contributes heavily. Vehicles that are inefficient and lacking emission controls cause serious air quality problems in major urban areas. Finally, the heavy use of coal for domestic heating further adds to the poisoning of the country's air.

Recent reports on Hungary indicate a slowing of surface water pollution or even a slight improvement during the last decade. Encouraging, as well, has been the improvement in the water quality of the largest Hungarian lake - Lake Balaton. However, clean-up operations and pollution control and prevention around the lake will still need to be continued over the coming years. In contrast to the picture for surface water, the quality of ground water in Hungary has been continuously declining. The condition of ground water appears to be a key environmental quality issue for Hungary.

Several factors create hazards for soil in Hungary: wild and water erosion, acidification, heavy use of chemical fertilizers and pesticides, salinization and recurrent agricultural use of heavy equipment. Most of these causes are related to deforestation, economic activities and urbanisation. Together, these factors contribute to the serious decline of soil fertility. Approximately 55% of the soil is jeopardised by different degrees of erosion in Hungary.

About 50% of the soil is affected by air-borne pollutants causing undue acidification.

Industrial pollution has caused serious decline of productivity of natural resources such as soil and forests. About 22% of all forests in Hungary are already damaged in different degrees by acid rain and the productive yield of forests shrinking. Pollution also presents a serious threat to the bio-diversity of the region endangering the survival of various species.

ii. **Waste**

Waste management, both industrial and municipal, poses problems of equal difficulty in Hungary. The inefficiencies of the past economic system produced substantial waste, which was only partly recycled or re-used (the average of the country was no more than about 20%). State enterprises did not have effective incentives to minimise and recycle waste. For that reason, the major method of dealing with waste was and still is just land fill dumping - in many cases in poorly selected sites. A special problem exists with hazardous wastes, consisting of both toxic and low-level radioactive materials. Serious instances of ground water contamination have already happened; such as with mercury and with pesticide contamination throughout the agricultural areas. There is a widely held concern among Hungarian environmentalists that the known cases are just the "tip of the iceberg".

iii. **Impact on human health**

There is growing evidence of adverse impacts on human health in the most polluted areas. For many years such data was prohibited from publication. Although no on questions the linkage between pollution and human health, the precise changes of metabolism due to environmental contamination in human organisms are, in many cases, not well known. Despite present limitations of medical research, there are several demonstrable features of the most polluted areas in terms of human health and life expectancy. There is growing evidence of higher morbidity rates of respiratory diseases, cancer and circulatory diseases among the inhabitants of the most polluted areas.

5. POLAND

50% of the population of the Baltic drainage area lives on the Polish side of the Baltic Sea. It is understandable therefore that the anthropogenic load is high. However, per capita, this is one of the smallest loads.

i. Water

Open waters:

The Polish Economic Zone, which is one of the southern parts of the Baltic Sea, is under the influence of large scale phenomena and is not directly subjected to the anthropogenic influences. Its quality depends on large scale phenomena: climatic influences, exchange of water through the Danish Straits, type of water, mixing conditions etc.

During 1993 salinity was rather uniform and ranged from 7.5% to 7.8%. Surface Waters were well aerated during the whole year, around 100% and higher saturation with oxygen, up to 140%, during spring blooms. Secchi depth in open waters ranged from 5-7 m during the blooms, up to 15 m in late autumn and during winter time.

Bottom parts of open areas of the Polish Economic Zone consist of three deposition areas: Bornholm Deep, southern part of Gotland Deep and western part of Gdańsk Deep. There are also three banks: Odra Bank, southern part of the Middle Bank and Slupsk Bank. However, only the stony parts of the Slupsk Bank are covered with bottom plant communities, e.g. various types of bottom brown and green algae.

Similarly to open waters deep waters (southern part of Bornholm Deep, southern part of the Gotland Deep and western part of the Gdańsk Deep), are subjected to large scale phenomena, as exchange waters through the Danish Straits. They are important as cod spawning areas. Cod fishery is mainly affected by the lack of cod water in the Gdańsk Deep followed by lack of spawning. Oxygen in deep waters depleted close to zero in 1992.

There was some increase of water salinity after the Kattegat water inflow in January 1993. In deeper layers of the Bornholm Deep salinity rose from 15.6% to 16.2%. Oxygen conditions in the intermediate and near bottom water layers improved greatly due to the influx of North Sea water, e.g. near bottom waters of the Bornholm Deep contained 6.0 cm^3/l. (73%), in the Gdańsk Deep 4.1 cm^3/l (48%) versus 0.4 and 1.0 cm^3/l in October 1992.

Open coastal waters:

Pomeranian Bay, central part of the Polish coast and the Gulf of Gdańsk remain under the anthropogenic influence but have a good mixing condition and have a good exchange with the open sea. It should be pointed out that the main threat to coastal marine environment is caused by the load of nutrients, therefore excessive eutrophication in the Polish coastal waters is the main effect of the anthropogenic influence. In spring 1993 when phytoplankton blooms began oxygenation exceeded much more than 100% in the entire coastal area.

The Pomeranian Bay and the Gulf of Gdańsk are still the most eutrophic basins as they are effected by the high nutrients load from river outflows. Nutrient concentration exhibits strong seasonal fluctuations, with maximum in winter and minimum in summer or spring/summer season.

In the surface water of the Gulf of Gdańsk a decrease in the winter accumulation rate of phosphate and silicate is observed but the rate of nitrate accumulation still remains high.

Concentration of toxic substances in fish from the coastal zone do not show an increasing trend; certain contaminants (Hg, Cd, Pb, DDT) are declining, while others (Zn, PCB) are at the same level. Concentration found in fish does not exceed national and international standards.

The sanitary status of the Polish coastal waters is unsatisfactory; however, it has improved in 1993 due to measures taken by local and central authorities, e.g. some previously closed beaches have reopened in the Gulf of Gdańsk.

In Puck Bay, some eutrophication effects are noticed; for instance, the development of filamentous algae accompanied by the massive occurrence of three-spined stickleback. Sanitary conditions of Puck Bay waters after the construction of a sewage plant have considerably improved and are generally accessible for water sports and for bathing.

Some improvement on diversity of plant communities has been noticed in the Gulf or Gdańsk. Furcellaria fastigiata has been observed at the bottom of Orlowo-Redlowo cliffs. This can be regarded as the positive response of the environment to the decreasing load of anthropogenic substances discharged in the coastal area.

Semi-enclosed coastal waters/internal waters:

Szczecin and Vistula Lagoons have exhibited hypertrophic state for the last few years. The sanitary state of Szcsecin Lagoon and Vistula Lagoon is unsatisfactory: neither of the lagoons qualify for bathing. Possible improvement will require measures to be taken in the drainage area as well as reduction of discharges in a number of point sources situated along the lagoons and in the drainage area.

ii. **Some improvements**

The year 1993 was an important one for the Baltic Sea and for the open waters of the Polish Economic Zone, mainly due to water inflow into the Baltic which occurred in January.

At first it was expected that this would bring a general improvement of salinity and saturation with oxygen in the Baltic depths, but eventually it was evident that this inflow was not so high and did not reach Gotland Deep at all and only slightly at Gdańsk Deeps. However, possible recovery of cod fishery after the improvement of salinity and oxygen conditions in the Bornholm Deep are expected.

The discharge of nutrients and toxic substances from the Polish area fell in comparison to previous years.

Some improvement of sanitary conditions was noticed in Polish coastal waters. Therefore, more beaches were opened and made available to the public.

The Szczecin and Vistula Lagoons have the poorest environmental quality on the Polish coast. Filamentous algal blooms are observed in the coastal areas of the Puck Bay as before.

A strong interest of scientific communities in coastal studies and in projects aimed at the restoration of important coastal bays and lagoons is observed. Various projects have been settled in the coastal waters which might bring positive results for restoration of coastal areas.

6. ROMANIA

Romania has complex problems of environmental pollution, caused by the intense industrialisation policy, developed particularly after 1960. Water, air, soil and ecosystems, as a result, have all been subjected to extensive and continuous aggression.

The concentration of industry into extremely large units, the use of physically worn-out technologies, the lack of repairs, the lack of purification equipment and the slow pace in modernising and development processes, in electric and thermal power production, of the metallurgical, chemical and machine building industries are significant factors in environmental pollution.

Pollution occurs over the entire territory of the country, particularly concerning surface and ground waters and on soil, through the use of phytosanitary substances and chemical fertilisers in agriculture. As a result of such levels of pollution, the quality of the environment, as well as the health of the population, has been adversely affected. SO_2 emissions systematically exceed OECD standards. In some areas, the emissions of lead and other heavy metals are extremely high, particularly affecting the growth of children. Common diseases are respiratory and eye infections, skin allergies, tuberculosis, pneumonia, tumours and anaemia and, in some areas, over 40% of the children have deficiencies in their muscular skeletal systems.

There are also severe effects on forests, flora and fauna, and many species have disappeared and are threatened.

The most polluting industrial platforms are: Copsa Mica, Baia Mare, Zlatna, Ploiesti-Brazi, Valea Calugareasca, Borzesti-Onesti, Bacau, Suceava, Pitesti, Tg. Mures, Turnu Magurele, Tulcea, Isalnita, Brasov, Govora. These are the areas currently under examination by the World Bank and the Ministry of Public Health, with a view to establishing an Action Plan.

In these areas, there are high levels of pollution from non-ferrous metal industry, petrochemical, agricultural fertiliser production, pulp and paper industry, aluminium, electric and thermal power producing plants, chemical industry, all of which produce noxious substances into the atmosphere, into water and into land, and have dileterious effects on health.

i. Air pollution

During the period of analysis, the most significant factor in air pollution came from the electric and thermal energy producing sector, which accounted for 56% of carbon dioxide emissions, 74% for sulphur dioxide, 40% for nitrogen oxide, 48% for soot and 40% for suspended particles.

The petro-chemical industry accounted for 60% of benzine emissions and 27% of the nitrogen oxides in the atmosphere.

ii. **Water pollution**

Water pollution is very high. Almost 30% of the total length of rivers (70,000 km) is polluted, much of pollution coming from industry and the agro-alimentary industry. Underground water is polluted in many areas due to industry, oil extraction of fertilizers (especially nitrates) used in agriculture.

iii. **Soil pollution**

Among the most affected areas are those near the mining exploitations of the Jiu Valley, three non-ferrous metallurgy platforms (Baia Mare, Copsa Mica and Zlatna), the coal power plants (Turceni-Rovinari), the siderurgy plants (Hunedoara-Resita) as well as those under the administrations for waste depositing, which are an important factor in soil degradation, of the ground waters, the atmosphere and the landscape. The chemically-poluted soils under various percentages are assessed to represent about 900,000 ha out of which 200,000 are excessively polluted. The soil is also affected by erosion phenomena over a surface of about 4 million ha.

iv. **Changes in the quality of the environment**

Following a decrease in industrial production in the period 1989 to 1991, the amount of polluting substances projected into the environment have decreased, as indicated by the table below. The absolute levels, however, still remain high.

Environmental factor	1989/1990	1991
- AIR 110,900	138,400	120,000
- WATER 5,100	6,100	5,500
- SOIL 243,500	273,600	254,500
TOTAL: 359,500	418,100	380,000

7. THE SLOVAK REPUBLIC

The Slovak Republic, in common with other Central and Eastern European countries, has an environment which has suffered considerably through years of industrial production undertaken as a priority, without any particular regard for environmental impact.

State intervention in industrial and commercial activities in order to keep prices of basic goods low was carried out, to the detriment of investments in nature and environmental protection.

Since 1990, environmental priorities are higher. Responsibility is divided between national administration (principally) and local authorities, there being no regional structure for the moment.

Generally speaking, national government maintains a coercive role, whereas the local authorities, in collaboration with industry and associations within their boundaries, are intended to take practical and active steps to improve the environment.

Despite, however, an undeniable increase in the political priority attached to the environment, actual practice is still far from sufficient to eradicate the situation arising from the past. The same difficulties arise in stimulating public awareness and sympathy, in a population primarily concerned with ensuring an adequate standard of living.

8. SLOVENIA

i. Soil and forests

The tectonic structure and corresponding types of soil are extremely varied in Slovenia.

There are two major sources responsible for soil pollution: industry and agriculture.

Industry pollutes the soil with heavy metals of which lead (Pb), zinc (Zn), and cadmium (Cd) exceed permissible values. Lead is present near roads while zinc and cadmium pollutants are the consequence of industrial emissions from urban centres and their vicinity.

Agriculture contributes to the low quality of the soil through the intensive use of insecticides and other protective agents for plants (fitopharmaceuticals). In areas of intensive agricultural cultivation, higher concentrations of triazine herbicides can be traced in the soil. Herbicides are used for weed extermination, and in addition, organic chloral compounds remain in the soil, the legacy of previous periods (DDT, DDE, TDE, and others). Fitopharmaceutical agents are quite common in the soil, representing a potential source of pollution of ground water and water sources, and are poisoning agricultural produce grown in this soil.

Growing urbanisation and development are natural sources of soil pollution. In the years 1958-1988, 17,033 hectares of fertile land was lost in this way. Unfortunately, this trend is still continuing.

54% of the area in Slovenia is covered by forests, which are managed in a co-natural manner, with average standing volume of approximately 220 cubic meters. The annual increment is estimated at 4.5 million cubic meters of wood, whilst the annual cut is 3 million cubic meters. Most biomass is accumulated in young forests on abandoned land that have been established both naturally and artificially. The forest area is increasing because of abandonment of agricultural activities. In the 19th century forests covered 35% of the surface. Later, reafforestations were carried out in the Karst area and many private farmers shifted from grazing to forestry in other parts. Advanced silvicultural methods were introduced from 1890 onwards and clear-cutting was prohibited after the Second World War. Biomass accumulation in the forests could still be increased through the tendency towards low quality forest lands.

ii. Water

Slovenia is rich in water sources, the most important being ground water and springs which are in most cases also the primary sources of drinking water.

Recent research on **ground water** has shown that the water is more polluted than was expected. The main sources of pollution are agriculture and industry. Pollution with nitrates and pesticides is mainly the result of intensive farming activity and thin cover layers. This type of pollution affects large areas and is still increasing. Industrial pollution is causing the presence of organic compounds such as solvents, mineral oils, polychlorized biphenyls, and

phenolic compounds. This type of pollution is typical in the vicinity of major industrial areas and is more concentrated in certain areas. In the majority of cases, however, it does not exceed permissible values. Heavy metals in general have not yet, with some exceptions, appeared in increased concentrations as the result of pollution. Radioactivity in Slovene groundwater is not problematic.

Surface waters (rivers and streams) in Slovenia, in most cases, do not serve as a source of drinking water, but are exploited mainly for recreational and technological purposes. In the majority of cases, waste water release has caused a heavy deterioration of water quality. The quality of surface water improved slightly in 1991 and 1992 as a result of the economic situation, that is, the reduction of production. On the other hand, we spotted the trend of deterioration even in springs which had not been previously polluted. In some cases, the improvement of surface water has been the result of the reduction or even cessation of industrial activity.

Lakes deserve our special attention as there are only a few in Slovenia and they are exploited for recreation and tourism. Therefore, their condition which shows a trend of steady deterioration is a reason for concern. The main reason for the deterioration of our lakes is in most cases the concentration of tourist and recreational activities and the unregulated sewage systems of settlements along the lake shores. Even the condition of the lakes in Slovenia's only national park is getting worse, especially those near Alpine huts and popular hiking trails.

The quality of the Slovene section of **the Adriatic Sea** has been constantly monitored for over twenty years. In recent years, an algae slime has formed twice which is probably not the result of increased sea pollution. The sources of sea pollution are rivers flowing into it, and the sewage of heavily industrialised and developed tourist coastal regions.

iii. <u>Air</u>

In the Republic of Slovenia, the two greatest sources of air pollution are thermal power plants (75% of SO_2 emissions) and traffic (66% of NO_X emissions). Last year, air pollution in the Republic of Slovenia decreased compared to the previous year. Combined SO_2 emissions were reduced by almost 8%, and emissions of NO_X by almost 6%. The main reason for the reduction of SO_2 emissions was reduced production of electric power in thermal power plants and the start of their ecological improvement. If we manage to reduce SO_2 emissions by another 7% by the end of this year, Slovenia will meet the requirements of the international convention which requires its signatories to reduce emission of SO_2 by the end of 1992 by 30% compared to 1980 conditions. In recent years, CO_2 emissions were reduced as a result of the reduced use of fossil fuels in power and heating plants and in industry. The greatest problem is the air pollution in some towns and industrial centres, largely due to them being situated in basins and the frequent occurrence of temperature inversions. The supply of natural gas, the change from domestic coal containing great quantities of sulphur to foreign coal with less sulphur content and the change from coal to liquid fuels are already showing the first satisfactory results.

There are some encouraging trends already visible concerning the use of ozone depleting substances. Almost the whole aerosol can production industry has changed to environmentally friendly propellants. The use of CFC is partly still present in the production of cooling devices and in the technology of foam products, but the replacement of present technologies with new ones using more environment-friendly raw materials is under way.

Results of long-term measurement of precipitation quality in Slovenia indicate that its acidity has increased over the years and that the concentration of the sulphate ions in precipitation and sediments is high in comparison with some neighbouring countries. This high acidity level is greatly threatening the forest system and in many areas has reached critical levels.

iv. **Waste**

Incomplete data shows that factories in Slovenia are producing and accumulating all kinds of uncontrolled wastes, including the most hazardous. In Slovenia around 760,000 tons of special waste is produced annually, 10% of which are hazardous wastes. Only one waste deposit site exists for their disposal which is at least to some extent organised according to European standards.

The growing industrialisation of and use of chemicals in agriculture have also created new substances and new quantities of all kinds of wastes which are poisoning the soil and the groundwater.

Population growth, urbanisation and a better standard of living have resulted in the rapid growth of great quantities of communal wastes. In Slovenia just under two million inhabitants produce around 6000,000 tons of communal wastes annually, and this amount is increasing. While industrial wastes from factories have been accumulating in factory yards, communal wastes found their place in about 100 legal landfills. 60% of their capacity is already full. Let us point out the important fact that only 65% of households have organised garbage collection. Even more important is the fact that these landfills do not meet the standards of the developed countries and are a potential and even actual threat to the environment. The absence of concern or awareness of the danger of communal wastes are reflected by the existence of over 1,000 illegal dumps in Slovenia.

Due to unregulated conditions and the absence of effective control, many hazardous wastes end up in legal or illegal communal dumps. The Krupa River poisoned with PCBs and Dravsko polje poisoned with pesticides are the two most obvious examples of this situation.

THE CURRENT SITUATION ON ENVIRONMENTAL PROTECTION

B. THE CURRENT SITUATION ON ENVIRONMENTAL PROTECTION

1. ALBANIA

The basic law for the protection of the environment has been endorsed in Albania; with regard to regulations, instructions and the standards for special environment pollutants, they are about to be submitted for approval. In this direction, assistance, technically and financially, has been received from international organisations such as the World Bank, the European Union, UNDP and UNICEF.

As well as the above, Albania has already begun some twinning activities between the cities of the country and other European cities. Among these co-operation activities, it might be worth mentioning relations established between Tirana and Marseille, and the membership of the City of Tirana in the programme of MedCities.

2. BULGARIA

Environmental legislation in Bulgaria has a long history dating back to the 1930s. In 1936, the state adopted the Environmental Protection Act. The following laws related to environmental protection were issued:

* Law on Mines and Quarries (1957)
* Law on Forests (1958)
* Law on Plant Protection (1960)
* Law on Water (1969)
* Law on Public Health (1973)
* Law on the Protection of Cultivated and Pastured Land (1973)
* Law on Regional and Settlement Development (1973)
* Law on Game Reserve (1982)
* Law on use of Atomic Energy for Peaceful Purposes (1985)
* Law on Bulgarian Maritime Territory (1987)

Also relevant to environmental protection are:

* The Penal Code (1968)
* Law on Monuments and Museums (1969)
* Law on Road Traffic (1973)
* Regional and Urban/Village Development Act (1973)
* Law on Unified Cadastre (1979)

These laws were relatively complete but, due to changes in the political system after 1944, production goals took precedence over environmental goals and such laws had no effect on the prevention of environmental devastation. Under the former political system, regulation and enforcement of legal standards did not exist and information was censored and suppressed.

In July 1991, the New Constitution of Bulgaria was adopted, replacing the old one from 1971. According to Article 15, the Republic of Bulgaria secures the protection and reproduction of the environment, supports the multitude of living nature and the reasonable use of the country's natural resources.

According to Article 55, all citizens have the right to a healthy and favourable environment, corresponding to the established standards and regulations. At the same time, the citizens are obliged to preserve the environment.

In October 1991, the new Environmental Law was adopted. It comprises the following chapters:

* Basic statute
* Information about the environmental situation
* Monitoring the current environmental situation
* Evaluation of the impacts on the environment
* Rights and obligations of the state and local authorities

* Duties
* Additional decree
* Changes following the adoption (1992)

The new Environmental Law overcomes most of the past deficiencies in environmental protection. Its strong points are:

* Access to information about the state of the environment is required by law
* Environmental impact statements are required for any development activities
* Charges for pollution rights within the permissible limit are required
* Penalties for violating the law are compulsory
* The basic underlying principle is "The polluter must pay"
* The law explicates the procedures for carrying out special activities for protection and recovery of the environment
* Charges for use of natural resources are required

Environmental protection is covered by funds from the central and local government budgets and from sanctions paid by enterprises. The charges for pollution rights within permissible limits are divided as follows: 40% to the community environmental protection budget; 60% to the National fund for environmental protection. The penalties for violating the law are divided as follows: 30% to the community environmental protection budget; 70% to the National fund for environmental protection. The sums of these funds can be spent only on the funding of environmental protection activities.

Every year the Council of Ministers prepares and submits to the Parliament a report about the state of the environment and publishes it as "Annual report on the state of the environment" (since 1989). In the case of transfrontier pollution, the regulations and standards fixed in contracts in which Bulgaria is a partner should be enforced. If there is no such contract signed, EU standards should be applied.

The importation of any kind of waste or dangerous substances is prohibited, as well as their transit transportation. The use of licences or importation of technology creating pollution of a degree of danger over the standards is also prohibited.

Governmental, non-governmental organisations and citizens can seek their rights through court for damages caused to the environment by violations of the law.

The Ministry of the Environment has created 16 Regional Inspectorates, defining their functions and territory.

i. <u>Local authorities</u>

At present, local authorities do not have clearly defined responsibilities. Coordination with regional environmental inspectorates is often sporadic. As a whole, coordination among the governmental institutions and communities is weak.

Local authorities should be given a much more substantial role in environmental policies if programmes are to be effective.

Currently, the main environmental function of local authorities is the provision of water supply, waste water treatment and solid waste management services. However, in order to upgrade the drinking water quality, waste water treatment and solid waste disposal, more investments are required.

Investments for environmental protection represent about 3.3% of the total investments in recent years, whilst the total environmental protection expenditure was about 1.0 - 1.2% of the national income.

3. CZECH REPUBLIC

The regulations on environmental protection in Czechoslovakia date back to the late 1940s: eg the law establishing the High Tatras National Park in 1949, the laws on nature protection adopted in the 1950s, the regulations on the management of metal waste (unique until 1991), the law on public health care aimed at ensuring salubrious living conditions and the law on water accompanied by a series of enforcement orders. These are theoretically still in force at the present time, and constitute a highly complex set of regulations for environmental conservation: the 1967 law on air protection actually introduced the payment of levies and fines as a penalty for causing air pollution.

In 1976 the law on regional and urban planning was promulgated, accompanied by the respective orders; this law is still in force today. The law on forests, which is also still in force, dates back to 1970. In the 1980s regulations were issued on road traffic conditions, nuclear safety during the processing of radioactive waste, and the felling of trees outside forests. Furthermore, new laws were promulgated on veterinary care and mining, as well as a whole series of enforcement orders relating to the latter, which modified the rules for extraction of mineral resources.

However, these regulations, which appear extremely comprehensive for the time, had many defects, including exemptions by motivated political considerations and favouritism. The whole system boiled down to an administrative scheme operating on the basis of bans, orders and authorisations.

A start was made on building up the environmental conservation system in 1990. The elaboration, publication and compilation of compendia of regulations are assigned to various sections set up by the Czech Republic Ministry of the Environment which was founded on 1 January 1990.

The basic law on the protection of the environment defines the terms and sets out the principles of environmental conservation, the obligations relating thereto, an assessment of environmental impacts, an assessment of trans-border repercussions, liability in cases of violation of obligations, sanctions and economic instruments. The law is accompanied by subordinate legislation dealing with expert opinions on environmental impacts, public health care, protection of the atmosphere, water management, waste processing, protecting nature and landscapes, agricultural land resources, forestry, regional and urban planning, extraction of minerals and other raw materials, fishing, hunting and other subjects. The standard regulations governing each problem in particular are embodied in a law which defines the subject to be protected, stipulates the principles and obligations relating to such protection, and is followed by a further law on the public administration of various components of the environment which sets forth the activities of the specific departments of the public administration, and, where appropriate, a system of levies and fines. Most of the laws are also accompanied by a system of enforcement orders and other regulations.

The legal system for protecting the environment is now virtually complete, but its implementation has already necessitated a number of additions, and more will no doubt be needed in the future. In addition, the Czech taxation authorities are planning a tax to fund environmental protection, and the Ministry responsible for environmental conservation is currently preparing outline provisions to that end.

A number of other laws are highly relevant to environmental protection. Laws on energy management, nuclear power and electricity, gas and industrial heating are currently under preparation.

Some laws relating to the tax system encourage compliance with the principles of sustainable development of living conditions. Amendments are planned for those laws which do not do so.

Public management of the environment is essentially a matter for general public administration, ie it operates through the intermediary of the municipalities and the municipal magistrates, as shown in the enclosed diagram.

The Ministry of the Environment of the Czech Republic is a competent government institution. In August 1992, responsibility for regional and urban planning was transferred from the Ministry of the Environment to the Ministry of the Economy, a regrettable loss of an instrument for protecting and shaping the environment. On the other hand, the transfer of public responsibility for the management of forestry, hunting and fishing in national parks to the Ministry of the Environment is a change for the good.

4. HUNGARY

Environmental degradation in Hungary is in no small measure related to insufficient legal protection and enforcement. The Hungarian Environmental Protection Code was enacted in 1976. Excluding a few provisions, it would be acceptable even today. Over time, a system of rather strict emission standards was developed, generally reflecting German solutions of the early and mid-seventies. However, despite strict standards, there was very little provision of effective mechanisms for enforcement. The organisational framework has had a number of changes in the last 15 years.

In 1987, the environmental authority and the water management authority were unified in the Ministry of Environmental Protection and Water Management. However, environmental protection continued to be ineffective because of prevailing special water authority interests. Water protection remained in the jurisdiction of water authorities who were responsible for fulfilling their water resources management plans and were expected to produce income. The conflicting interests between water protection and water sales continued to be mostly resolved in favour of the latter.

Permits were administered without public participation or even involvement. This was due to the then existing system of general public administration procedures which governed environmental decision-making. This contributed to the growing public disaffection and mistrust toward government authorities and their failure to protect the environment that culminated in the anti-Danube-dam movement.

Serious problems could be found with enforcement. These problems were partly due to insufficient resources available for enforcement. Primarily, however, it was simply a consequence of the relations of the enforcers with politics. Some regulations created express exemptions for some industries. The whole legal system was non-responsive. Judicial review was unheard of and only the 1989 Constitutional amendment changed that situation. Today there is recourse - both to the Constitutional Court and to ordinary courts against both public and private decisions. However, the courts are as yet not fully prepared to take all these requests.

Since 1990, important steps have been taken to reorganise ministries. Of major significance was the separation of water management authority and environmental protection. A new ministry has been created: the Ministry of Environment and Regional Planning. Internally, this seems to have created new problems of assuring the fullest measure of attention to environmental protection concerns. However, from a long-term perspective and with the goals of sustainable.

The Parliamentary Committee on Environment Protection decided to commission an independent drafter of the environmental law. Because of continuing environmental degradation and increasing problems related to privatisation, the drafter agreed to present a Comprehensive Act in two stages to be submitted separately to the Parliament. The first stage covers the general framework; the second is more detailed and covers the different media (air, water, soil) to be protected. The new law seeks integrated management of environmental protection within a single agency. The proposed law seeks to establish four guarantees:

1. Should the government fail to establish standards as the law requires, the standards of the European Community would automatically apply.

2. The right to information, the right to know and the right of participation. Under the draft, citizens can seek damages through the courts. Non-governmental organisations may also bring violations before the courts.

3. Legal review.

4. The use of environmental impact statements. The draft proposal sets up a reserve fund to be funded by enterprises.

i. **Local governments**

Previously, local governments had little or no leverage over industrial or other large scale sources of pollution within their boundaries. Now, with local elections producing elected rather than appointed officials, the ability for local governments to exert pressure on large polluters will increase. Nevertheless, there still will not be formal processes by which local governments or the public they represent can address environmental issues. Although there are signs of moving towards decentralisation in Hungary, power is still highly centralised. Allocation of resources and funding is less than efficient due to this continuing centralisation of decision-making.

ii. **Public participation**

Green movements played a significant role in Hungarian political life. In the 1980s support of environmental protection was the only relatively safe form of public criticism of government policy and the existing political system. In 1988, this opposition focused on gaining the cancellation of the Bos-Nagymaros Dam, a facility the government was determined to build. Due to this opposition pressure, in May 1989 the government decided to suspend construction of the dam.

After this success, public attention focused on traditional political issues. The environmental movement became fragmented, and the environmental platforms of the various political parties were absorbed in other issues. Neither the parties, nor the independent green movements, nor the Green Party (established in November 1989) has succeeded in refocusing public interest on environmental protection. By 1992, political and economic issues overshadowed environmental protection.

5. POLAND

i. Water

For a considerable time Poland has been making serious efforts to reduce contaminant inputs into rivers and, subsequently into the Baltic Sea.

Undertakings aimed at protecting waters against pollution are being harmonised with long term national and regional environmental protection programmes.

The "National Environmental Policy," adopted by the Parliament, maps out a strategy aimed at restoring quality and usability for municipal, industrial and agricultural purposes.

Remodelling of industry and the modernisation of technological processes with respect to water consumption and contaminant loadings are the basis of this strategy.

Decreasing amounts of generated waste waters (municipal and industrial) have been observed since 1980. Only 37% of waste waters have been treated at a passable degree (biologically or chemically), about 29% of waste waters have been discharged without any treatment, directly into the surface waters, and 34% of sewage has been treated only mechanically. In 1992 about 50% of industrial plants discharging sewage and 338 towns (40%) did not have waste waters treatment plants.

In comparison with the previous year good results have been obtained since building municipal and industrial waste water treatment plants in 1992. 341 waste water treatment plants have been turned to exploitation (54 more than in 1991), with a total capacity of 740,000 cubic meters a day (113% more than in 1991). Originally there was greater participation of biological waste water treatment plants (68%) in total with an increase of capacity for waste water treatment plants. In comparison with previous years better results have been obtained, especially in building municipal waste water treatment plants. 95 municipal waste water treatment plants have been turned to exploitation in 1992 (43 more than in 1991). However, large towns such as: Lódź, Bialystok, Kalisz, Zielona Góra still did not have municipal waste water treatment plants, whereas in Warsaw (right side) in the waste water treatment plant "Czajka", only 35% of sewage generated in Warsaw has been treated, and the remainder of Warsaw sewage (135 mln m^3) has been discharged directly into the Vistula River.

A steady increase in the building of waste water treatment plants has been observed in seaside Voievodships since 1984. Most of these waste water treatment plants (55) have been turned into exploitation in 1989 in those Voievodships.

In seaside Voievodships, altogether 900 waste water treatment plants have been during realisation in 1993; of those 300 waste waters treatment plants were in 50% advanced and 250 plants were in 70% advanced.

A permanent decrease in water consumption in all sectors of the national economy (industry, agriculture and forestry, municipalities) has been observed since 1985.

An effective solution has to be found in relation to the problem of excess salinity in river waters. Limiting salinity of the Vistula is considered a priority task. The scheme for protection of the Vistula watershed against salinity involves the cleaning of mine waters from the "Czeczot", "Piast" and "Ziemowit" coal mines as the main measure.

A permanent fall in the use of fertilizers has been observed in Poland during the last four years. Consequently, the amount of nutrients load discharged into the Baltic Sea has decreased over recent years. Effective implementation of water protection programmes requires the organisational improvement of administrative structures responsible for water management and changes in the existing legal regulations. Great hopes are set on the present administrative re-organisation. The hitherto existing system based on the country's territorial administration units will be replaced by a more adequate and logical hydrological division. Poland's territory has been divided into seven water management regions corresponding to major catchment areas and, presently, regional Water Management Boards are being established in Katowice, Kratów, Warsaw and Gdańsk (Vistula catchment basin) and in Wroclaw, Poznań and Szczecin (Oder catchment basin).

The process of radical transformation of the law is also under way. The new Water Law, which is currently being prepared, will provide a foundation for further developments in water protection in Poland.

ii. <u>Air</u>

The continuing degradation of the environment in Poland requires, if a radical improvement is to be expected, allocation of large financial inputs. The limited resources of the Polish economy do not make it easy. In this situation the necessity to utilise the best available resources, maximum savings on raw material and non-renewable energy is important, as well as making proper use of the installed environmental protection equipment.

The effectiveness of air protection activities is combined, first of all, with the change of structure and modernisation of the power production, metallurgic and chemical industries. This is where the main sources of pollution arise.

Many enterprises, which were behind in their attitude to environmental investments, have finally embarked on an attempt to change their outdated, excessive energy consuming technologies for more modern ones which secure substantial reduction of pollution emissions. The intervention of local environmental services is also becoming more effective in cases where the environment is threatened, in many instances forcing closure of factories particularly dangerous to the surroundings.

Many industrial enterprises have been obliged, by administrative decisions, to prepare within the set time limits and implement programmes for the abatement of their main environmental threats. It should be noted, that the decree of the Council of Ministers on protection of air against pollution, which was changed in 1990, has set the maximum permissible standards for sulphur dioxide, nitrogen oxides and dust emission for fuel combustion processes. This has caused visible intensification of activities on the part of industrial enterprises aiming to reduce emissions of those substances. Simultaneously any opportunities that existed before the by-pass the responsibility to adhere to set standards

have been removed by providing the Voivodship administrative authorities with the power to tighten permissible emission standards in their area, thus adapting them to the existing concentration of air pollutants recorded in the vicinity of industrial estates.

The need to rationalise energy consumption in all its forms is now combined with the change in structure of the industrial economy and the modernisation of applied technologies. It is also the cheapest way to obtain the additional amount of energy together with the reduction of air pollution. The establishment of the Energy Saving Agency, as a separate organisational structure, will also help air protection.

Coal will still be the basic source for many years to come. Any activities, aimed at environmental protection must therefore be concerned with the problem of coal. The reduction of SO_2 emission can be achieved not only through flue gas desulphurisation but also through the enrichment and desulphurisation of coal itself as well as through the implementation of modern combustion methods. Implementation of projects in coastal areas has already started in four coastal mines. At the same time the most urgent task is the introduction of new, efficient coal combustion technologies through the use of fluidized bed boilers produced in Poland. This technique will provide for the reduction of sulphur dioxide and nitrogen oxide emissions by 60-80 per cent without the need to build additional desulphurisation plants. The fluidized bed boilers will gradually replace the presently operated traditional ones.

6. ROMANIA

i. National legislation

The legal framework has been reviewed and readjusted since 1989. Former legislation was adequate in that it covered many areas and established strict standards and limits. However, the problem was one of enforcement and implementation. Control and monitoring procedures were weak; responsibility was divided amongst many authorities and the legislation had virtually no effect.

The approach therefore is one of not neglecting the existing legal framework, but incorporating the satisfactory parts of it into a completely new one; the two processes take place in parallel.

Full information about the new legislation appears in Document CPL/ENV/EST (28) 15 - the Romanian national contribution.

ii. General provisions

The Ministry of Water, Forestry and Environmental Protection (MWFEP) is the specialised central authority that is responsible for public administration in the fields of water management, forest management and environmental protection.

In order to ensure a sustainable development and to improve the quality of life, MWFEP creates the basis and promotes the measures for recycling and managing natural resources.

MWFEP is the central coordinating authority in its field of activity, bot for subordinate units and for units subordinate to other local or central authorities, for state-owned or partial state-owned agents and for citizens.

MWFEP co-operates with other Ministries and with other central authorities and has the right to demand from them reference material, information and data required for executing its assignments.

MWFEP coordinates the activity of the Commission for Protection against Flood, Hazardous Meteorogical Phenomena and Hydotechnic Works Accidents, the National Commission for Evaluating Hunting Trophies, the Romanian National Committee for major dams, Romanian National Committee for International Hydrologic Programmes.

It also sets up the priorities for research and development programmes in its field of activity; develops studies, forecasts and makes strategies for development and monitors their enforcement; drafts and proposes laws; controls the laws drafted by other Ministries or authorities of local and central administration, in this area of concern; provides for, at national level, the control of regulations on forest and water management and Environmental Protection by juridical and physical persons; represents the Government in relation to international or transfrontier organisations or bodies in the field of water, forests and environmental protection; enforces international conventions; initiaties and develops

programmes for training the specialists in its field; co-operates with resort ministries, with central and local authorities, with educational, scientific and cultural institutions, with the mass media; authorises import/export licences for goods, techologies, equipment and technical assistance in its field of activities; sets up a privatization strategy for its coordination of commercial business.

iii. **Branch agencies**

In 1990, each judet (40) (and Bucharest) got their own Branch Agency (BA). BAs are local state agencies subordinated to the MWFEP. They are financed with money from state funds. Each BA is managed by a Council of Administration. The daily leadership of the BA is realised by a Committee of Direction.

Branch Agencies are responsible for the implementation of the environmental policy through activities such as data collection, monitoring, inspections, issuing permits and authorisations and legal actions. They have responsibility for water management, amongst other functions.

iv. **Environmental Research and Engineering Institute (ICIM)**

The Institute was established three years ago (1989). It harmonises the work done in laboratories of the BAs.

The emphasis of the ICIM is in the field of environmental research and engineering, in particular on:

- water quality monitoring and management
- aquatic ecology
- water and environmental economy
- drinking water and industrial water treatment technology
- waste water treatment
- laboratory of urban engineering and ecology
- hydrotechnological construction.

v. **State company APELE ROMANE**

Apele Romane (AR), an autonomous state company is in charge of the daily management of Romanian water resources. This company is a corporate entity with economic and administrative power to implement the "national water management strategy". It is affiliated to the MWFEP and is responsible directly to the Secretary of State for Water.

Every main catchment area or hydrographical basin in the country has a River Basin Agency (RBA), which carries out the activities of AR at a local level. Each RBA is sub-divided into 4-8 units each, representing an important hydrological structure or installation (eg dam). Romania has circa 80 units, with each judet having at least one such unit. There is one RBA for the Danube (without the tributaries).

AR and thus the RBA deal with:

- management of water resources;
- protection against depletion or overuse through monitoring of quantity of water resources and subsequent calculation of the amount of water for use in the coming year and control of the amount of water used;
- prevention of water degradation through monitoring the quality of discharged water;
- supply of fresh water and control;
- civil engineering works (treatment plants, equipment for water supply);
- flood control;
- accidental pollution clean-up.

7. THE SLOVAK REPUBLIC

The Ministry of the Environment initiates regulations for the protection of nature and the environment and has a network of district offices responsible for monitoring the respect of legislation, together with appropriate administrative and personnel resources. Such offices have the authority to impose fines and issue permits. Personnel in such offices are state employees, independent of local authorities.

The government has created a Fund for the protection of the environment, for which resources are voted on the national budget and to which proceeds from penalties for harmful activities to the environment are fed.

8. SLOVENIA

The Republic of Slovenia ranks among those rare countries where environmental protection is already mentioned in the basic constitution of the country. Should be mentioned in particular the constitutional provision according to which property ownership has an ecological function in addition to economic and social functions.

i. Legislative reform

The transition to parliamentary democracy and a market-oriented economy, an orientation toward the process of European integration and last but not least, the condition of the environment were the factors which dictated the orientation of legislative reform in the field of environmental protection in Slovenia. This reform attempts to achieve three goals: to establish modern legal and economic mechanisms for environmental protection, to "ecologise" those parts of the legal system which are important for the protection of the environment, and to make the whole system comparable to legal systems in the developed world. The global goal is, of course, more effective environmental protection. It must be stressed that all regulations will be adjusted to the regulations of the developed countries to the greatest possible extent and as soon as possible.

ii. Environmental restructuring

It is assumed that such an orientation will stimulate the environmental restructuring of our technologically relatively obsolete economy, which is in deep crisis. In this way, the crisis will be more easily overcome because greater competitiveness will be possible in foreign markets. Competitiveness on the domestic economy, considering the costs of environmental protection, will also be protected by the prohibition of imports of polluting technologies and products to Slovenia. We are quite positive that such legislation will stimulate foreign investors in Slovenia since they will encounter similar regulations as those in their home countries. At the same time, the orientation toward an ecological restructuring of the domestic economy will open possibilities for foreign investment in environmental projects as well.

iii. Monitoring

In order to master the situation and to adopt rational decisions, a national information system in the field of environmental protection and a system of environmental statistics will be introduced. Both systems will be organised to be compatible with European systems of statistics and other information systems in the field of environmental protection.

iv. National programme

In the field of programming environmental protection, a national programme will be prepared to determine priorities, internationally adopted commitments, costs, and benefits for the national economy.

v. **Environmental Impact Assessment**

In the Republic of Slovenia, an Environmental Impact Assessment programme has been put into force recently (by passing the new Environmental Protection Act), the procedures and contents of which have been taken from EEC Directive 337/85 concerning the impact on the environment of specific private and public institutions. For the solution of environmental problems, we anticipate the introduction of improvement programmes. Given the environmental situation and the technological and economic situations of the major polluters in Slovenia, relatively major problems can be expected, but at the same time, a rise in the number of businesses dealing with environmental protection.

vi. **Public participation**

Freedom of information is one of the acute contact points between the citizen and his government. For this reason, we are introducing into the law provisions that all dates, processes, and activities involving environmental protection for which national and local bodies, organisations or individuals are responsible are available to the public. Similarly, the law provides for the publication of proceedings against and data about all those guilty of causing pollution. The publication of data and proceedings is limited only in circumstances and in ways defined by law (e.g., state, military or business secrets).

vii. **Costs of pollution**

In accordance with the costs of pollution, the PPP principle will is applied. In particular, it is especially applicable when the polluter must cover special costs which arise as the result of pollution or not paid as compensation or indemnities directly to those affected. The Government of the Republic of Slovenia also plans the introduction of ecological duties thus introducing the principle that the consumer should also pay for the cost of environmental protection. We also anticipate tax and customs relief and incentives for environmentally friendly technologies and products, i.e., for investments which will reduce environmental pollution. A Fund for the Environment of the Republic of Slovenia will be established to finance and credit investments in the field of environmental protection.

viii. **Concessions**

The management and the specific and secondary use or exploitation of natural resources on state property is regulated through concessions.

ix. **Public services in the field of environmental protection**

Public services will be established in the field of environmental protection. For a number of reasons, primarily because of the relatively small market and the correspondingly higher threshold of profitability, the range of public services will probably be greater than would normally exist in countries with larger domestic markets. These services will be responsible for the handling of certain types of wastes, monitoring, etc. They will be performed either by public or private enterprises through concessions gained by public tender.

x. **Gradual improvement**

Legislative reforms, the ecological restructuring of the economy, and the rise of ecology-oriented enterprises can, of course, not be achieved overnight. On the one hand, it would be impossible to realise these goals, and on the other, they would worsen Slovenia's already impoverished economy which is in deep structural crisis. A number of solutions will be realised gradually. The ability of the economy to adapt and various investment cycles will be considered to the greatest possible extent but never again at the cost of the continuing deterioration of the environment. In this technological, manufacturing, and organisational restructuring we welcome the co-operation and help of those who have already stressed the paradigm of the 21st century in their development - environmental protection.

NEW PRINCIPLES AND NEW APPROACHES

C. NEW PRINCIPLES AND NEW APPROACHES

1. BULGARIA

In fact, the previously mentioned "Law of Environmental Protection" is a new one, adopted in 1991 and quite satisfactory. The problem is that the institutional framework of the market economy will develop over an extended period, and it will take time before the law and the rules are enforced and become effective. So the efforts should be turned in the direction of finding a way for effective and immediate implementation and enforcement of the laws, perhaps a system of "Command control type tools", standards, permits and legal enforcement in order to achieve the desired impact.

At present, economic "instruments" are the only effective ones, although not always. Very often taxes and penalties are non-collectable from businesses in disastrous economic situations. On the other hand, it is easier and less expensive to pay the penalty, instead of taking proper care of the waste. So the Ministry of the Environment and local authorities should pay attention to the ratio between taxes and penalties to costs for managing the waste, always keeping the penalties more expensive than the waste costs.

The production and importation of ecologically clean equipment and technologies should be stimulated through paying less duties, indirect taxes, income taxes, etc. The priority should be to stimulate ecologically clean production, rather than to sanction polluters.

Until 1991, there was no nationwide system for the control and monitoring of solid waste.

The Ministry of the Environment is planning the application of some new legislation, regulations, stimulations, standards and norms. A new tax upon energy will be proposed, especially for the use of oil and coal with high sulphuric contents. There would be 15% tax reduction for industry introducing appliances for environmental protection. Production out of recycled materials would not be charged with the 22% turnover tax. There is also a proposal for discharge of the 40% income tax for investments in environmental protection. These new standards should apply in the near future, with the adoption of the following laws and regulations:

> Law for solid waste; Regulations for cleanliness of communities; Law for protected areas; Law for curable plants; Law on noise; Law for the air; Law for water; Law for hunting; Law for fishing; Law for forests; Law for the restitution of forests; Regulations on the activities of the Regional inspectorates; Regulations for standards of permissible concentration of dangerous substances and many others.

The system of standards for emission or discharge of pollution in permissible concentrations should be periodically checked and dosages lowered so that, in a certain period of time, they should be equalised to European standards, thus continuously improving environmental protection.

The new standards should be compulsory for new businesses and production units, whilst old plants and technologies should have a period of time during which to adopt and to adjust to these new standards.

It is important that regionalism in environmental protection be strengthened, because problems are more often regional than municipal and some kind of system of Regional Councils could be created, in which representatives of local authorities could participate in helping to solve global district problems.

Local governments should have their own programmes for environmental protection; they should have the right to conduct referenda about problems concerning their community and the right to vote their own laws. These laws should have legislative power equal to national laws. Otherwise, they could easily be confuted at court. In some cases, local laws could be stronger than the national ones, if necessary.

Local authorities should not hurry to close down businesses causing pollution, but should try to find an alternative solution. This is often a great problem, as some regions have their economy focused around a single industrial sector. Thus, it is important to develop programmes for economic diversification and employee retraining.

The sums collected from taxes and penalties should be divided as follows - 30% for the national budget and 70% for the municipal budget. Only then could real decentralisation be achieved.

The best solution for the management of environmental funds would be the foundation of a new Bulgarian Ecobank. Through it, eco-investments, national and local environmental projects could be stimulated and it could probably attract foreign assistance.

The principle of long-term planning should be adopted rather than short-term planning, avoiding the mistakes of the former State-planned development.

Efforts should be directed towards creating a national strategy for a complete reconstruction of industry according to the requirements of sustainable development. Applied to the situation in Bulgaria, this would mean a transition from destructive industry to structured, satisfying the country's needs economically, oriented towards light industry, agriculture and tourism. It would mean investing in new ecologically-clean technologies and equipment; less usage of non-renewable natural resources, waste recycling, full usage of all resource ingredients.

A programme for restructuring the energy system should be introduced as soon as possible.

2. CZECH REPUBLIC

i. Government institutions

In 1991, under the Czech National Council Act, the National Fund for the Environment in the Czech Republic was set up; this decides on grants for investment or other action to protection environment, encompassing the protection of water, air, nature, landscapes and soil from pollution and the treatment of waste. It has added to some existing funds and extended its own activities to cover the problems associated with waste and the protection of nature and landscapes. The Fund's financial resources come from pollution levies, or parts thereof, fines (or parts thereof), the results of failure to comply with regulations on protection of the environment, and government and other endowments. Also adopted in conjunction with the above-mentioned Act was another act governing the public administration of protection of the air and air pollution levies, which progressively increases the pollution levies each year (100% per year) between 1991 and 1997. There is a basic rate of air pollution levies for cases where the upper emission limit is not exceeded; where it is exceeded, the rate is increased by 50%. The CIZP (Czech Environment Inspectorate), in pursuance of the Act, reduces by 40% the pollution levy paid by anyone who starts to take the measures authorised by the Inspectorate with a view to reducing air pollution. If these are completed in time, and if a reduction to the permitted upper level is achieved, the rest of the levy is not payable.

A fairly complex formula is applied to calculate the charges for the disposal of polluted or insufficiently purified waste water, so that these vary according to the individual level of pollution. These charges were doubled in 1992. In pursuance of the Act, the CIZP defers the payment of 60% of the charge for anyone who starts to take the measures authorised by the Inspectorate with a view to reducing water pollution. If these are completed in time, and if a reduction to the permitted upper level is achieved, the rest of the charge is not payable.

Waste dumping charges vary according to the type of waste deposited and the tip itself. Charges for the dumping of waste on tips satisfying the statutory conditions remain unchanged. Where the tip used does not comply with the statutory requirements, tipping charges have been increased in 1994 to a level of up to ten times higher than the 1992 rates. The CIZP again, in accordance with the Act, waives payment of 60% of the charge levied for dumping on a tip not complying with the law for any firm which starts to adapt the tip to bring it into line with the requirements of the legislation on waste, provided that the project has been authorised by the Inspectorate. If the project is properly completed in time, payment of the rest of the charge is also waived.

The rates applied to the use of agricultural land depend on the quality of the soil and on environmental and ecological impact.

The Act prohibiting the production, importation and utilisation of substances which deplete or pose a threat to the ozone layer currently applies to the production and importing of aerosol vaporisers based on the following substances: with effect from 1 April 1994: halon-1211 and halon-2402; with effect from 1 January 1996: other CFCs, tetrachloroethane and 1.1.1.-trichloroethane.

It has not been possible under the new fiscal system of the Czech Republic to apply a significant direct tax allowance. There are even cases in which the amendment of the law reduced certain advantages, one example being renewable energy resources, earnings from which previously benefited from tax exemption for a ten-year period, reduced to five years.

Approximately 4,400 million Kc is allocated in the draft national budget for 1994 to fund ecological activities through systematic individual investments. Preference is given here to the completion of waste water purification systems, drinking water pipes and gas pipelines. The most frequent beneficiaries of the amounts granted by the Ministry of the Environment of the Czech Republic are associations (11,700,000 Kc) and schemes for making good the damage caused by the former Soviet Army (140,200,000 Kc). The largest sums with the widest scope used for purposes other than investment are those allocated to the treatment of forests (500,000,000 Kc) and to heat insulation of buildings and alternative energy sources (400,000,000 Kc). Some of the funds mentioned above are included in other parts of the national budget, being allocated for example to the Ministry of Agriculture, the Ministry of the Economy, etc.

The Treasury Directorate General is considering systematically making funds available for municipal investment in ecological and water management measures planned by municipalities in the regions of northern Moravia, northern Bohemia (including the district of Sokolovo) and Prague.

ii. **Local authorities**

Air pollution is the indicator of environment quality most frequently used by the majority of the population of Prague, given the fact that the densely populated area of the Prague conurbation is one of the most badly affected areas of the Czech Republic, along with the region adjoining the Erzgebirge and the Ostrava region.

An order issued by the Ministry of the Environment of the Czech Republic lists those regions requiring particular protection against air pollution and lays down the principles for setting up and using systems to regulate the smog prevention measures to be taken. This order lists Prague as one of the regions requiring particular protection against air pollution. In accordance with this text, the Prague city council publishes regulations for the organisation of pollution source control in the area of the city of Prague. The city council, after consulting the Czech Hydrometeorlogical Institute, which monitors changes in the pollution situation and in dispersion conditions, also issues "warnings" and "control" signals in respect of fixed and mobile air pollution sources.

The Act governing the public administration of protection of the air and air pollution levies allows the administrative bodies of the city of Prague to designate urban zones where pollution sources must be reduced. This made possible the issuing of what is known as the "catalyst decision", restricting the use in specific areas of the city of company vehicles exceeding the stipulated exhaust gas limit. Mainly for social reasons, it is not yet possible to restrict the use of solid fuel stoves.

The regulations implemented when smog conditions prevail are necessary to alleviate the effects of critical situations. However, only systematic action to eliminate emissions could prevent smog altogether. These problems call for basic changes in fuels, energy sources and combustion techniques and for de-dusting, but also for the fitting of catalytic converters to motor vehicles and for overall energy savings. Significant investments are necessary, and a good deal of time will be needed. Statutory regulation and government power to impose penalties are inevitable preconditions.

Possible ways of improving air quality in Prague have been analysed and the following conclusions reached:

- the present fiscal system does not make a sufficient contribution to environmental protection, which is why a draft amendment to the relevant legislation has been prepared and a parliamentary debate held;

- a well-designed system of appropriations from the budget of both the city of Prague and the urban districts (also possibly from the city of Prague's ecological fund and from government funds) must be established;

- criteria for the granting of appropriations must be drawn up;

- the consent of the city and urban districts is needed for a co-ordinated effort to alter the heating system;

- genuine plans for government appropriations and appropriations from the National Fund for the Environment in the Czech Republic must be drawn up;

- a guarantee is needed of a main database (updating of REZZO, inventory of heating resources and of actual consumption of fuels and fuel use patterns in the city of Prague);

- an energy advice centre should be set up and a study carried out into what its activities should be;

- an ecological information centre should be set up.

Most of the solutions put forward have been implemented as far as the financial resources of the city of Prague permit.

3. HUNGARY

i. Government Institutions

Given the present enormous transformation in Hungary's economic and political structure, it is absolutely vital to make environmental concerns part of the transformation process. Government, at both the central and local levels, will necessarily play a leading role in establishing appropriate institutional arrangements to carry out environmental concerns along with such major transformation processes as:

- decentralisation and democratisation
- creation of markets and opening the economy and society
- restructuring
- privatisation and compensation.

One of the first conditions for establishing a sustainable society and economy is democratisation. After more than 40 years of totalitarian rule, this task is of the highest priority in the transition period. Democratisation involves creating an institutional framework of considerable complexity. The consent of the governed and popular sovereignty means choosing leadership through free and open elections (from a base of universal suffrage). This, however, is only a necessary but not sufficient condition for democracy.

The Hungarian Constitution must assure that the government will continuously provide the general public with the following basic rights:

- the right for all citizens to have a healthy and safe environment;
- to be informed about the state of the economy, social life and the environment;
- to bring suit in a citizen's own interest or in the public interest, to demand cessation of violations of laws which protect the path of sustainable development and elimination of the causes of these violations;
- the right to a legislative initiative which would provide that any proposal for a law petitioned by a pre-determined number of citizens (voters) will become a draft that the Parliament or Republic Assembly must consider and decide;
- the right of public initiative which would provide for bringing questions other than constitutional ones to be decided by referendum before the electorate, when petitioned by a predetermined number of citizens. It should be clear that the national and local governments must comply with any referendum duly approved by the electorate.

The right of free assembly implies the right to establish independent, non-governmental associations and the right to freedom of speech. Such independent associations may, of course, be business enterprises. Also included are civic associations that are concerned with a wide range of special interests as well as the broad public interest, including sustainable development and environmental protection. The Hungarian Government should create suitable conditions for such civic and public interest associations, especially those concerned with such aspects as: sustainable development, energy efficiency, alternative sources of energy, environmental technologies, recycling, etc. Strategic points of beginning lie in existing environmental non-governmental organisations, scientific groups, labour unions, student groups and religious organisations.

The Parliament and local legislative bodies should introduce the practice of conducting public hearings on all issues under consideration. Such hearings would logically be introduced as a formal procedure of legislative committee work, and would permit the opportunity for testimony from experts, interested organisations and citizens. Such testimony would be an important part in shaping and perfecting the legislative process and enhancing its democratic nature. Public hearings should also be conducted during deliberations of strategic programmes of relevant ministries, eg finance, industry, environment, energy or social strategies.

The Parliament should establish a Parliamentary Committee which will have the duty of examining and analysing all proposed bills submitted for adoption for their effects on the environment and sustainable development, including their effects on existing acts, policies and programmes intended to protect the environment and promote sustainable development.

Environmental laws should apply equally to state bodies charged with environmental protection as well as private firms or persons whose activities have an impact on the environment. The courts shall ensure the rule of law and that no person or agency shall be above the law. State agencies should be obliged to provide information to the general public when asked. Environmental authorities should publish lists of major polluters and maps displaying main pollutants in a given area.

These should be updated on a regular basis. Full access to environmental information for everyone is vital, and establishing institutions of citizen participation in decision-making processes will help develop an environmentally-sensitive society.

It is especially important at the grass roots level, where pollution is generated and inhabitants of immediately adjacent localities are affected.

In the current situation, it is also important to make a clear division of power and responsibility for governance at different jurisdictional levels. The making of a new Constitution should be used as an opportunity for clarifying powers, obligations and tasks. There are several alternative approaches possible. It is important to keep in mind, however, that the pursuit of sustainable development interweaves many different responsibilities; eg economic development, environmental protection, privatisation, regional development and international co-operation. Moreover, these responsibilities necessarily entail good working relationships between local and central jurisdictions. This depends very much on having effective local government bodies.

All ministries of the national government should have overall responsibility for protection of the environment and natural resources. Within this context, the national government should:

- coordinate domestic and international economic and environmental policy formulation;
- coordinate general features of national economic and environmental policy and its implementation;
- prepare basic federal laws on environment, as well as on air, water, waste management and nuclear safety;
- conclude international agreements and coordinate implementation.

The Ministry of Environment and Regional Planning should:

- prepare an annual report on the state of the environment in Hungary as well as on the status and effectiveness of policies, programmes and initiatives undertaken by the Ministry;
- draft basic sustainable development strategies through regional planning, environmental protection and conservation of resources;
- draft environmental laws and prepare environmental standards and regulations;
- draft land use and construction laws that will serve to promote sustainable development;
- enforce regulations;
- systematically monitor land use, environmental quality, natural resource use and effectiveness of environmental protection;
- develop organisational arrangements that strengthen the efficiency of sustainable development and its component policies, programmes, laws and standards;
- manage national forests and other public resources and set limits on the economic exploitation of forests based on multiple use and sustainable yield principles;
- develop economic instruments to create incentives for sustainable development;
- propose the acquisition and designation of critical zones for environmental protection, green areas, parks and other special natural resources and conservation areas;
- stimulate and conduct research, education and development concerning sustainable development;
- review and approve the designation of zones proposed by other bodies for consistency with land use and environmental plans and standards;
- conduct technology and new product assessments with respect to energy efficiency, waste reduction and recycling and minimising exposure to hazardous waste;
- supervise, assist and coordinate sustainable development programmes of regional and local bodies;
- manage funds for sustainable development and environmental protection;
- coordinate and support sustainable development education programmes;
- through publicity, raise public awareness of problems of sustainable development and environmental protection and encourage participation by local governments, non-governmental organisations and the public in environmental decision-making.

An inventory of natural resources and environmental amenities should be established. The strategy of environmental protection and sustainable development requires an accurate, up-to-date inventory of natural resources not only at the national level but also at the regional level. The Ministry of Environment and Regional Planning should conduct this inventory and establish permanent means of monitoring changes in regional resource bases. This information should be accessible to everyone.

There is an urgent need to establish within the Ministry of Environment and Regional Planning a specialised division dealing with highly toxic and hazardous wastes with appropriate regional centres. They should monitor and research toxic and hazardous wastes, providing extension services for interested parties. They should create programmes that emphasise source reduction, waste reduction and pollution prevention. Functional aspects of the programme should include:

- monitoring the importation, use and disposition of hazardous materials and waste;
- research on the technical, economical, social and policy issues associated with hazardous waste reduction and management;
- technical assistance for business and industry;
- training for workers and managers in industry and government officials in hazardous waste reduction and management.

The information gathered should be accessible to everybody. At the regional level, it will be necessary to organise regional toxic and hazardous waste collection and disposal sites.

Until now, liability for environmental damage has only been partially solved by economic legislation. The new legislation should better define the nature of ecological harm or damage to health, amenity, ecosystems or the natural environment. Developing meaningful costing or pricing of this damage is a problem which Western environmental economists are beginning to solve in some cases and, where appropriate, their methods should assist as one form of collaboration in the formulation of Hungarian policy. It should be possible to hold those responsible for damage to the environment criminally liable for the damage they create. Liability should be strict and ignorance, delegated responsibility or due care should not constitute a defense as in accord with proposed European Community standards.

Fines should be imposed for infractions or violations of environmental laws. Fines should be set up in the law on such a basis that in every case they would more than offset the potential benefit that has been generated by the sanctioned damage to the environment. Fines should not be merely another cost of doing business, but rather should be so structured that they provide an impelling incentive to comply with the standards. Where fines threaten the shut-down of an economic enterprise, plans for abatement of the polluting practices should be worked out with the Ministry with the possible use of loans through the Central Environmental Fund.

Pollution prevention assessments should be required periodically of individual industrial and commercial enterprises. Each would be required to list hazardous materials used in manufacturing or other processes and requiring disposal in the waste stream. Each would evaluate their operations regarding potential improvements to energy efficiency, potential for recycling and reusing energy and material, and for reducing hazards in the workplace and for reductions in the waste stream.

All industrial and commercial enterprises should instal monitoring for fuel use systems to measures accurately emissions and discharges of pollutants. They should periodically report this information to the Ministry of the Environment. Local governments and the public should have access to this information.

The privatisation of state enterprises raises the issue of environmental liabilities of such firms. The states as the owner created these liabilities and carries them as an intrinsic obligation in any sale. It will be difficult to evaluate these liabilities which would presumably run with the property. One solution could be to establish an ecological clean-up fund from a special tax (eg fuel or energy tax). An alternative solution could be tax relief for cleaning up. Additionally, conditional operations can be specified through negotiations with privatising

authorities. Such negotiations highlight the fact that privatisation will have to be construed as a dynamic process of reconciling different interests. In this context, the selling price could reflect the liability that runs with the firm that is being sold.

In the process of evaluation, the scale of environmental impact of enterprises and the state of their technology must be assessed to find appropriate instruments to avoid or limit further deterioration of the environment. Such an environmental audit could be made on the basis of an agreement between privatising and environmental authorities, taking into account that there is no mention of environmental protection in the existing privatisation acts.

The path to a market economy for Hungary opens new opportunities to apply market-based incentives for environmental protection. Economic instruments should be used in concert with legal instruments and be supplemented by information disclosure requirements.

ii. **Local Authorities**

The constitutional principle of (local) self-government shall be respected. Local governments have major responsibilities in the path to sustainable development. Their land use, development and environmental protection policies should meet national standards as a minimum. However, local governments should also have the power to set more stringent requirements as local conditions demand.

Command style thinking or lack of administrative experience still predominates many governmental branches, hindering market mechanisms from becoming fully effective. The governments in power are characterised by a lack of concrete support, as many factions are opposing each other in the legislature as well as on local levels.

As with international co-operation, local governments similarly do not wish to be placed at a competitive disadvantage, with other local governments in terms of attracting new industry, jobs and tax base to their jurisdiction. Thus, it is extremely important that the relations between national and local governments be clearly spelled out. Local governments exercise many permitting responsibilities respecting new investment construction and new activity. Some might thereby be more lax in enforcing environmental standards and in assessing environmental impacts than others. Clear understanding of national and international standards need to be fully imparted to local officials and procedures for uniform methods and standards for environmental impact assessment need to be assured.

To provide advice and technical assistance to local governments, regional advisory structures should be created by the national government to help ensure the effective design and coordinated implementation of economic, land use, water and environmental policies that promote sustainable development. Such regional advisory bodies would provide technical services in developing links between national databases and local data needs, technical assistance and training for local government officials, assistance to local government issues. The Ministry of the Environment, in collaboration with universities and technical universities, should establish the training programmes offered by regional advisory centres for local and county administrators.

4. POLAND

Sustainable development, based on maximum efficiency in energy and raw materials consumption environment, is considered to be the only model which can assure Poland of a harmonious and permanent development leading to an economy that can satisfy legitimate human needs.

The sustainable development model for Poland was presented in a government paper entitled **National Environmental Policy**, approved by Parliament in 1991. Its proposals include:

- a far-reaching restructuring of industry guided by the need to satisfy stringent environmental standards for all new and upgraded technologies;

- a nationwide programme for improved energy efficiency and for saving energy in all its forms;

- rationalisation of transportation and mass transit systems in urban areas on a regional and national scale;

- changes in agriculture to encourage production of healthy food;

- implementation of a water conservation programme and rationalisation of the use of water;

- creation of large-scale systems of protected areas; and the setting up of biosphere reserves.

i. National Environmental Monitoring Programme

The main goal of National Environmental Monitoring is to increase the efficiency of activity due to environmental protection.

The main tasks of National Environmental Monitoring are to obtain information concerning:

- current state and degree of deterioration of particular components of the natural environment;

- pollution loads discharged into natural environment;

- anthropogenic changes of natural environment dynamic;

- foreseeing results of environment exploitation.

Information obtained as a result of operating these systems will be used in decision making processes, to enable choice of adequate economic and spatial development strategies, both on a national scale and in particular on a regional scale. Therefore, information should be stored very close to decision-making centres.

Voievodhip's environmental data base will be a basic element of the computer system of the National Environmental Monitoring Programme. The computer system will be connected with the Central Planning Office, the Central Bureau for Statistics and other office computer systems.

National Environmental Monitoring includes following sub-systems:

- surface water monitoring;
- underground water monitoring;
- atmospheric air monitoring;
- earth surface monitoring (included soil and wastes);
- living resources monitoring;
- integrated monitoring.

National Environmental Monitoring also includes measured-control sub-systems connected with the counteraction of extreme threats of environment, especially sub-system of radioactive substances monitoring.

The Baltic Monitoring Programme is connected with the realisation of Polish commitments resulting from the signing in 1974 and the ratification of the Helsinki Convention concerning Baltic Sea Environmental Protection.

The goal of the international Baltic Monitoring Programme (BMP) is recognition of reasons, intensity and tendencies of changes occurring in the Baltic ecosystem.

Baltic Sea monitoring is carried out in international (3 in the Polish economical zone) and national networks of measuring stations. Samples are taken during research cruises, carried on in compliance with a timetable approved by the Helsinki Commission. Performers of the measures have a duty to participate in international measuring and analytical methods intercalibration tests.

The collected data is delivered to the HELCOM Data Base and then used for the preparation of comprehensive assessment of the state of the Baltic Sea environment. This data is also used nationally. mainly in reports and bulletins.

ii. **Investment activities**

Index of participation of investments on environmental protection in Gross National product (PKB) increased steadily - from 0.6 % in 1989 to 1.3 % in 1992 and steered clear of a lower level of these indexes in economically "weaker" OECD states.

Investment costs on environmental protection were 7.1 billion PLZ in 1992, and their proportion in total investment costs was 6.5 %, increasing (1.1 %) in comparison with the previous year.

58% of investment costs spent on environmental protection came from ecological funds, 20% from companies resources, 13% from municipal budgets, 5% from the central budget and 4% from foreign aid. Most of the investments have been spent on water protection, mainly on building waste water treatment plants (47%), on air protection (35.9%) and soil protection (16.9%).

Ecological funds are crucial sources of financing environmental protection projects, the most important is The National Fund for Environmental Protection and Water Management with Voievodship's funds (established on July 1, 1989) and Farm Land Fund (operated from 1982).

The National Fund's income arises from:

- fees and fines imposed on institutions and enterprises which pursue economic activity and use the natural environment;
- licensing fees for exploitation of natural resources;
- its own economic activities and shares on capital;
- from the interest on loans granted for ecological purposes;
- from voluntary remittances from industrial works.

In 1992 the National Fund income reached 3,206 billion PLZ, i.e. twice as much as in 1991.

The above mentioned income generally comprises 2,298 billion PLZ as received from Voivodeships, i.e. 51% more in comparison with the previous year and 279 billion PLZ as payments for natural resources excavation. The rest of the income consists of interest on loans, return on equity and interest on bank investments. Whereas expenditures in 1992 amounted to 3,206 billion PLZ generally included: loans (2,400 billions PLZ), subsidies (520 billion PLZ), surcharges to soft loans from the Eco-Bank (BOS S.A.), investments and purchases of treasury bonds.

The major line of the National Fund's operation is primarily implemented in:

- water protection through financially supporting the construction of waste water treatment plants, water-tight technologies, the establishment of closed circulation systems, the introduction of the multi usage of water;

- air protection by supporting modern little and no-waste technologies, due to pollution reduction installations and production of environmentally friendly fuels as well as usage of biofuels and renewable sources of energy;

- earth surface protection and a proper solid wastes management by supporting: little and no-waste technologies, waste utilisation and neutralisation, waste ecological management in the source, production of equipment for waste collection, transportation and utilisation, soil rehabilitation, efficient usage of natural resources as well as methane and coal mine's saline waste water utilisation;

- nature protection by financially supporting educational research bases, organisation and maintenance of national parks, protection of endangered animal species protection as well as for standing timber reconstruction on ecological disaster territories;

- ecological education by granting subsidies for the publication of books, press materials and seminars of a pro-ecological nature, educational programmes for schools, scientific, educational and cultural associations;

- environmental monitoring by financially supporting existing and newly established state's monitoring network as well as control and supervisory data banks.

In 1992 The Voievodship's funds for environmental protection and Water Management income reached 6.4 billion PLZ, i.e. 45% more in comparison with the previous year (95% of income comes from fees and fines).

In 1991 Eco-Bank (BOS S.A) was established. BOS S.A is the only Polish bank granting preferential credits for ecological undertakings. The Bank particularly promotes modernising and investment enterprises serving water and atmosphere protection, economical fuel-energy and waste management, development of control-measuring apparatus and equipment production, etc.

Granting preferential credits is possible due to co-operation with the National Fund for Environmental Protection and Water Management.

The National Fund is one of the founders and the principal shareholder in the Eco-Bank, owning 44.4 % of its shares. In November 1992 the "Ekofundusz" fund commenced operation. It governs financial sources from eco-conversion of 10% of Polish debt towards contracting parties of Paris Club.

5. SLOVENIA

i. The Slovenian environmental project

The Slovenian Environmental Project is the central effort of the Slovenian Government to manage the main pollution control investments in Slovenia and to develop a sustainable environmental management system. Preparation of the project began in 1990, but was stalled for a year by the dissolution of Yugoslavia. In 1992 the Feasibility Study and Master Plan were prepared by Stanley Consultants, a U.S. consulting company. The Study was partly financed by the Japanese Grant Facility (6,000,000 US$) and the rest was covered by the Slovenian Government and municipalities (1,300,000 US$). The Study has identified and justified a number of top priority investments and activities, that should be implemented in the coming years. The following priorities have been agreed upon with the World Bank and the BERD:

Air pollution:

- Development and implementation of a programme to supply natural gas or district heating for home heating in the highest priority areas of Slovenia (up to US$ 220 million);

- Design and installation of a flue gas desulphurisation system at Šoštanj power plant for unit 5 (US$ 120 million).

Water pollution:

- Water supply and wastewater treatment plant in Ljubljana (US$ 53 million);

- Sewer system and wastewater treatment plant in Maribor (US$ 62 million).

Solid waste:

- Solid waste management in Ljubljana (US$ 65 million);

- Solid waste management in Maribor (US$ 24 million).

This month the Slovenian Parliament passed the new Environmental Protection Act and The Public Utilities Act, which call for significant institutional development and strengthening of environmental management capabilities. In the coming year, the Ministry of The Environment has to establish the Environmental Inspectorate and Environment Fund, develop its own internal capabilities such as the information system, as well as issue a number of standards and regulations, including EIA and rules of action.

Currently the World Bank and the BERD are considering the following components for financing by a loan:

World Bank:

- Natural gas and district heating distribution in the most polluted towns of Slovenia;
- Flue gas desulphurisation of Šoštanj Unit 5;
- Institutional strengthening.

The loan amounts for these three components have to be discussed and will be determined through feasibility studies.

BERD

- Waste water treatment plant in Ljubljana;
- Waste water treatment plant in Maribor;
- Solid waste in Maribor.

(Involvement of private investors and operators is also expected for these components).

It is expected that project preparation and pre-appraisal of both projects could be finalised by the end of 1993.

ii. **The integral concept of waste management in Slovenia**

On account of pressing problems which result from accumulated and uncontrolled waste disposal it has become necessary for the whole of society to change its basic understanding of and relationship to the consumption of raw materials and energy which results in the production and dumping of wastes.

It has become clear that the system of simply dumping wastes must be replaced by a system of minimising and preventing the production of wastes at source, the ecologically least damaging and economically most rational means to approach the corresponding levels of other wastes.

To this end, a comprehensive study under the title *The Integral Concept of Waste Management in Slovenia* was elaborated. The basic purpose of it was to get a detailed plan for solving the problems of all kinds of wastes. Slovenia expects up-to-date solutions to be implemented for all kinds of waste. Waste minimisation and recycling will be priority solutions, including adjustments of production technologies. Public utilities will be established or concessioned on the national level for waste handling and disposal, where wastes cannot be dealt with on the market. It is expected that inclusion of private investment into the sector will allow us to establish the whole system in approximately seven years.

RAISING PUBLIC AWARENESS, MOBILISING SUPPORT FOR ENVIRONMENTAL PROTECTION AND EDUCATION FOR THE ENVIRONMENT

D. RAISING PUBLIC AWARENESS, MOBILISING SUPPORT FOR ENVIRONMENTAL PROTECTION AND EDUCATION FOR THE ENVIRONMENT

1. ALBANIA

In order to achieve a greater commitment of the ministries and various scientific institutions to environmental improvement, of great importance is the role of the Society for the Protection of the Environment. Its work is to make citizens aware of the indispensability of their participation in the planning of the measures for the protection of the urban environment.

2. BULGARIA

The first movements and unions for the conservation of nature appeared at the end of the last century (Society for the Protection of Nature - 1896) but, during the communist regime, no influence on government decisions was possible, nor protest against the State's attitude towards nature. For many years, under the former political system, citizens developed a passive attitude towards participation in public policy. They were accustomed to leaving the responsibility for decision-making to the State. Thus, it is a major social challenge to awaken and activate Bulgarian citizens to become participants in rebuilding the country.

Individual participation should be performed through non-governmental community organisations, coalitions, parties or movements.

A strategic point in achieving conditions for growth of non-governmental organisations could be the attracting of student groups, scientific groups, social welfare groups, religious groups and youth organisations for the cause of environmental protection. In Bulgaria, such organisations are: the Ecoglasnost, some Green parties, Green patrols, different kinds of unions like Green Balkans, Union for the Protection of Birds, Union for the Protection of the Rodopi Mountains, Union of Beekeepers, tourist organisations and over 80 others. Each of them have their own goals but, at the same time, contribute to solving the global ecoproblems of the country. Some of them lack good organisation and experience. Sometimes they do no know how to act and how to struggle for their aims; they cannot attract public attention for their cause and there is no coordination between them. Local authorities support and co-operate with them, but still the local policy in this field is comparatively weak.

Local authorities should make their work "transparent" to the general public. They should explain the problems and motivate the way they intend to manage them and ask for co-operation, so that every citizen could feel himself invited to participate, or at least be informed of what is being done in his/her own community.

But still there is no active mechanism to stimulate individual awareness, to make ordinary people seek solutions to their environmental problems, through participation in organisations, rather than be passive sufferers limiting their protests to helplessly discussing the hazardous situation.

Everyday situations reveal the truth that the majority of citizens, pressed by their own economic needs, have a very vague idea of the environmental problems of the country or are only aware of the local problems concerning them.

Another common mistake, supported by some populist politicians, is the explanation that economic recovery is needed immediately while the problem of environmental protection can be dealt with later, in some years, when it can be afforded.

It is vitally important for Bulgarian citizens to understand that they should not wait for someone else to introduce and enforce a system for the development of Bulgaria, but they themselves should initiate dialogues and activities, helping to find the way of the country towards a sustainable future, distinguishing between short-term and long-term demands.

Obviously, the most special attention should be paid to the young generation. It is necessary that special educational curricula be introduced in schools, as well as new textbooks published. It is equally important that teachers be trained to introduce environmental protection policy into every single subject they teach.

Eco-educational Centres could be established to direct and assist this process.

Specialists in environmental protection should be trained and should participate and take decisions in every field of industrial strategy.

It is also necessary to have a number of experts trained to operate the new equipment and the technology for purifying and managing water. Experts on monitoring the environment should also be trained.

New approaches in curricula for agricultural schools in Bulgaria should be developed. At the same time, new eco-agricultural educational programmes for farmers should be introduced, enabling them to understand and accept the principles of sustainable development in farming and forest management.

One of the most powerful sources for raising public awareness and contributing to environmental protection should be the mass media - television, radio, newspapers and mainly the local media. Their participation should not be sporadic and campaign-like. Journalists should play the role of the "alert conscience" of society. They should seek and provide information for a starting point of dialogues on environmental problems and protection between different compounds of society and individual citizens, lead and stimulate public activities, as well as announce every single achievement in forming the new democratic order, restoring the economy or environment, or progress in protection policy. They should diffuse information on the final results, be it failure or success of public or individual activities.

And finally, it should be strongly stressed that, on a local level, it is of vital importance that local authorities manage to gain the confidence of the citizens as defenders of their interests in environmental policy, then make them supporters of the community activities and - finally - active participants in environmental protection.

The relatively new idea (for Bulgaria) of sustainable development should be widely spread throughout all strata of society, so that it can be properly understood and accepted as the only proper way towards a better future.

3. CZECH REPUBLIC

Thanks to the release of information about the state of the environment in the Czech Republic, public attitudes to ecological problems are changing. There is a more marked fear of an ecological disaster. A survey carried out early in 1990 showed that participants regarded industrial pollution of nature as a prime danger.

A study of the attitudes of the Czechoslovak population to the risks stemming from development again revealed the gravity of ecological problems: 92% of respondents were worried about the consequences of the destruction of the environment, 69% saying that they were very, and 23% of them fairly concerned. Their greatest worry was of deterioration (95%). 83% in the Czech Republic considered their immediate environment unsatisfactory, 20% described it as disastrous and only 2% called it very good.

The same survey revealed a relationship between town size and pollution levels. 84% of the population of small municipalities were satisfied with the quality of their environment. 36% in towns with a population of between 20,000 and 100,000 were satisfied, while only 12.5% were satisfied in the large towns.

Subjective assessments depend on the objective facts about environment quality. The inhabitants of northern Bohemia, Prague, part of central Bohemia and northern Moravia are aware that their homes are virtually unfit for human habitation. Most of the people responding to a 1990 survey (81%) were convinced of the need to limit their consumer needs, in order to improve the state of the environment. The more polluted the environment, the more convinced people are. 92% of respondents understood that there was a relationship between population behaviour and the state of the environment. This is a good basis for ecological education.

The fundamental document in respect of ecological education is Decision No. 232/1992 of the Government of the Czech Republic on a policy for central government assistance with ecological education in the Czech Republic in the '90s, dated 1 April 1992, in which the government instructs the Ministry of the Environment of the Czech Republic to co-ordinate ecological education in the Czech Republic and the other central institutions to carry out their duties under this policy. It is a substantial weakness that this decision fails to provide for the financial side of ecological education.

Following the above-mentioned decision, the situation is as described below:

1. There is a network of school and out-of-school ecological education centres. Ecology hostels and centres numbered 150 as of 30 November 1992. They include training centres, residential hostels, teacher training centres, centres providing information about environmental developments to the general public, ecological advice centres and periodical production facilities.

2. The national ecological education centre (set up on 1 April 1993) is a computerised ecological education centre for the Czech Republic. It provides a service to national institutions, associations and the public. Teachers and government officials are one of the main target groups.

3. Information, themes and ideas relating to ecological education are exchanged at present. 43 centres communicate with each other, using a computer network, via an ECONNECT communications node. As of 30 November 1992, non-governmental ecology centres were publishing 25 periodicals. The Ministry of the Environment of the Czech Republic publishes Zpravodaj MZP CR (report of the Ministry of the Environment of the Czech Republic), an Official Journal, a monthly magazine called "Planeta" (Planet) and a yearbook, Zivotni prostredi CR (Environment of the Czech Republic). Prague city council, in co-operation with IMIP, has since 1989 published an environment yearbook (with the Czech Ecology Institute).

4. Ecological problems feature on the syllabus for various subjects at primary and secondary schools and in some higher education establishments. Ecology is taught at 47 higher education faculties in the Czech Republic.

5. There are both ecological education system for student teachers and ecological education courses for teachers.

4. HUNGARY

The support of the general public is an inevitable precondition for implementation of sustainable development policies. Public attitudes are presently less than wholly supportive in Hungary, since people face difficult problems in economic and social survival within the current economic reforms. Thus, there is an important need for effective educational programmes for people of all ages to make clear the close relationship of sustainable development to their health, longevity and well-being.

Acknowledging the many differences of interests in Hungarian civil society, the relationship between politics, economy and civil society must be of a radically different character to achieve a future society able to sustain economically viable and environmentally sound development. A primary theme of this radical new character is "dialogue" - open and honest communication among all sectors of society. This theme is the direct opposite of the old regime that relied on secrecy, rigid control of speech and communication channels and reliance on ideology to hide the true conditions of society. Today, Hungary faces many problems which cannot easily be resolved. The ideas, policies and programmes that can establish the path to sustainable development will have to rely heavily on establishing the mechanisms for a nationwide discourse - a national dialogue for sustainable development.

Given Hungary's position in the region and in world markets, this concept should also be extended to include international exchange especially between Central and Eastern European countries.

The theme of a national dialogue goes beyond the elimination of old government and party practices. It addresses old attitudes, beliefs and the behaviour of individual citizens. A national dialogue implies a process that seeks the participation of all. The experience of neighbouring countries suggests that all citizens have to be recruited in the task of rebuilding the nation - transformation cannot be left solely to the top ministers of a central government. Hungary faces extraordinarily difficult problems, the very kind of problems where experience has shown that "topdown" hierarchical decision-making is least capable. Open communication with widespread participation generates more ideas, more information and more proposals for action.

There is thereby a need to get as many citizens as possible engaged in the transformation process.

The generation and open flow of valid and appropriate information is an essential requirement for the effective self-management of a complex society. Identification of conditions, trends and changes provide primary data to produce social understanding that points to appropriate modification of system behaviour. For this to happen, however, requires open communication through unrestricted information channels and unimpeded processing by different elements and institutions of society. Through these means, a system is able to avoid harm and catastrophe and maintain its integrity and complexity (health). Therefore, the ability to detect and communicate economic, social and environmental dangers and decide on appropriate responses are fundamental necessities for a thriving society.

The main objectives would be:

- improving capacities to provide primary information and information processing;
- establishing independent communication channels between the various interested groups of the society,
- identification of common goals and priorities,
- identification of main economic, social and environmental risk,
- identification of divergent interests,
- increasing public awareness and increasing public control of decision-making.

Grass roots participation at the community level is vital for building democratic institutions that promote sustainable development. Such participation, however, is most effective when organised. Community organisations, land coalitions of community organisations become important and powerful vehicles for building individual participation. Establishing such organisations cannot and should not be carried out by government at any level. Democracy begins in the cities and towns and autonomous coalitions for sustainable development and environmental protection would realise their greatest strength beginning at that level.

Local governments should develop procedures to ensure and promote public input review and participation in their activities and to further the goals of educating the public about environmental issues. Wherever possible, public agencies should conduct hearings, public meetings and fora and present programmes through newspapers and television. New plans, programmes and legislation should provide for an open public inspection period. Environmental assessment reports should be required for all major new investments and be made available for public inspection and should be open to public discussion through public hearings.

A network of Environmental Education Centres should also be established by government agencies, private individuals, non-governmental organisations and others to develop an institutional base for environmental education. These Centres should stimulate development of new environmental curricula and educational approaches and preparation of educational materials for different social groups and educational institutions. These Centres should serve as resources for the development of alternatives to formal education, including interactive teaching, new ideas in education and changes in the practices of educational institutions. Governmental agencies, non-governmental organisations and the private sector should jointly support these Centres.

5. ROMANIA

Romania has signed the Rio agreements, which include an undertaking to encourage public awareness and participation in environmental matters.

The Romanian Constitution guarantees the rights of the population to have free access to information.

New environmental legislation, introduced progressively since 1989, stipulates that projects concerning land use and those likely to have an impact on the environment be made public in advance of decision. However, the mechanism for such consulation has not yet been satisfactorily established.

Local authorities are obliged to publish information about industrial development and encourage the development of non-governmental organisations active on environmental questions.

A new draft for environmental legislation guarantees public access to information about the quality of the environment; the right to establish associations for the protection of environmental quality; the obligation of public consultation for land use and town planning; the access to judicial authorities in the event of direct or indirect damage and the right to claim compensation for environmental damage.

In addition, local authorities are to co-operate with educational, cultural, public health administrations and tourist organisations, in order to bring about greater educational awareness of environmental matters.

MULTILATERAL CO-OPERATION AND INTERNATIONAL ORGANISATIONS

E. MULTILATERAL CO-OPERATION AND INTERNATIONAL ORGANISATIONS

1. BULGARIA

Being a small country located at the meeting point between Europe and the East, bordered by the Danube river and the Black Sea, Bulgaria is very sensitive to transfrontier pollution and multilateral environmental problems.

International co-operation is absolutely necessary for effective control of the pollution of the Danube river, the Black Sea and the rivers flowing out of Bulgaria.

The Black Sea washes the shores of the Ukraine, Russia, Georgia, Turkey, Bulgaria and Romania. There is an agreement signed among these countries concerning pollution and the protection of its waters.

The Danube river is subject to pollution by a number of European countries, Bulgaria and Romania contributing most to polluting its lower part. Bulgaria has signed the Bucharest Declaration for controlling the quality of the Danube's waters.

Another "hot spot" of transfrontier pollution is the town of Rousse, situated on the Danube (population of 300,000), heavily polluted with chlorine compounds emitted by the chemical plant in the Romanian town of Kalarash.

The problems of transfrontier pollution could be more easily solved if the regulations for environmental control were equalised and valid for neighbouring countries. There should be contracts and documents enforcing taxes and penalties for transfrontier pollution.

Bulgaria is willing to participate in the international efforts towards sustainable development, although in some cases signing conventions happens to be risky because of the economic consequences for the country.

Bulgaria signed 45 international agreements between 1921 and 1993. Some of the latest conventions ratified by Bulgaria after 1991 date back to 1969, 1973, 1979, 1985.

Less than 10 conventions have been published, so their reflection on the domestic Environmental Law and public awareness is not significant.

Some of the international projects launched in Bulgaria are:

* The World Bank and the International Monetary Fund have allocated funds for restructuring the Bulgarian economy, thus indirectly helping environmental protection

* The European Bank sponsored a project for the purification of the Ogosta river (a tributary of the Danube);

* The PHARE programme of the EU provides financial means for water and air monitoring and research work about NPP Kozloduy

* The Institute of Sustainable Communities in Vermont, USA, sponsored a project for sustainable community in the town of Troyan, helping to solve, independently, environmental problems

* The USAID financed the WASH project for investigation of the waters of the Yantra river

* In December 1993, in Thessaloniki (Greece), the "Black Sea" was established, with the participation of Greece, Turkey and Bulgaria

* The project of the WHO "European Network for Health Promoting Schools"

At present, Bulgaria is co-operating with the following organisations and programmes: USAID, USEPA, BERD, EIB, EU, EPDRB, IBRD, UNDP, ETP, UNEP, WEC, REC.

2. CZECH REPUBLIC

In 1992 the former Czech and Slovak Federal Republic signed a major multilateral agreement, the Convention on International Trade in Endangered Species (CITES). No other conventions have been signed subsequent to the break-up of the federation.

The Ministry of the Environment of the Czech Republic participated in bilateral co-operation in the environment sphere in 1992 - and in several cases continues to do so - involving the following countries and aims:

- Belgium - in the total of 20 areas concerned, seven projects were under way, the main ones being the "Air Monitoring System", a project for the Oder basin and others.

- Denmark - five projects were agreed in 1992, costing a total of DKK 5,500,000, and some others, already under way, were continuing.

- France - the activities of the Franco-Czech Co-operation Bureau were continuing at the Ministry of the Environment of the Czech Republic (training of technical staff in the monitoring of air and water pollution, waste treatment, etc).

  Prague city council and its French partner had subscribed to a contract to make Prague a cleaner city.

- Germany - work was in progress under the intergovernmental agreement on co-operation in the field of environment protection, relating mainly to protection of the air, transfrontier agreements on water, etc.

- Netherlands - joint projects on cleaning soil and underground water contaminated by oil-based substances. Technological help was given by a fund which offers assistance to the countries of Central and Eastern Europe when the hospital waste incinerator at České Budvějovice was fitted out.

- Norway - co-operation continued on the basis of an intergovernmental agreement relating to the environment.

- Poland - work under the inter-governmental agreement on water management in frontier areas, the protection of the air, etc, continued.

- Austria - apart from a consultation and exchanges of documents and participants for various seminars and conferences, there was no inter-governmental co-operation. Prague city council was co-operating with Vienna city council in respect of waste treatment. The Ministry of the Environment of the Czech Republic also took part in the drawing up of the intergovernmental agreement on water in frontier areas.

- Switzerland - as early as 1991, plans were complete for the treatment of household and industrial waste. Implementation has been deferred.

- United States - offered the National Fund for the Environment US$ 10,000,000, granted on the basis of the intergovernmental agreement (guaranteed by the Agency for International Development).

Co-operation with the World Environmental Centre and with America's Environmental Protection Agency continued, involving further training for Czech specialists and assistance with World Bank activities in the Czech Republic. In conjunction with the World Bank a joint study was drawn up on the state of the environment in the Czech and Slovak Federal Republic, and a programme known as "Environment I" was produced. The other international projects in which the Ministry of the Environment was taking part were MKOL and MKOO (International Commissions for the Protection of the Elba and Oder). Following the Dobris Conference in the EEC and UN context, preparations began for a ministerial conference on "An environment for Europe, which took place in Lucerne in April 1993.

- The PHARE national programme (environment sector) - the projects approved and financed in 1990 and 1991 continued in 1992 (there are 10 in respect of the Czech Republic), including one on the influence of the environment on public health and another on ecological education.

- The PHARE regional programme (environment sector) - work is now under way on nine programmes, in six of which the Czech Republic is directly involved, and in two others of which it is participating indirectly. The "black triangle" project is the main one (Czech Republic, Poland, Federal Republic of Germany).

3. HUNGARY

There are critical international issues that have a bearing on Hungary's prospects for the successful pursuit of sustainable development. Hungary is a small nation with no outlets to oceans. Its water basins extend into other countries, with all its rivers either beginning or ending in foreign lands.

Meeting the challenges of clean air, water and soil means developing joint policies with neighbouring states.

Moreover, the increasing recognition, worldwide, of growing global implications of environmental problems points to Hungary's stake in the sustainability of the European continent and the whole earth.

Thus, Hungary has to be prepared to extend its national dialogue to participate in international arenas. The recent acceptance of Hungary as a member of the Council of Europe and an associate member of the European Communities means issues of European and international trade, technology transfer and transboundary pollution will occupy a prominent position in the national debate.

Due to Hungary's geography, a high priority for international dialogue lies in the problems of transboundary pollution of air and water. Most recent data shows that Hungary both exports and imports significant quantities of pollutants. Such transboundary pollution poses special problems for sustainable development policy. One nation, Hungary for example, may shift the considerable economic costs of pollution to a neighbouring state. Similarly, a significant proportion of pollution and its costs in Hungary may be received from another region or state (Hungary, for example, receives pollution from France as well as from neighbouring states).

Successful control of transfrontier pollution requires successful international policy coordination, which in turn hinges on careful consideration of the physical, economic and political circumstances facing each nation.

This problem, therefore, needs to occupy a prominent place in the international dialogue.

One goal in the international dialogue would be to generate a widely agreed-upon position about East-West technology transfers.

Restrictions should be paired with incentives for the transfer of appropriate, environmentally-sound technologies and products and with efforts to integrate them into sustainable development strategies. Whilst such transfers are very necessary in helping Hungary to achieve a technological "leap-frog", the process also has its dark side: the transfer of technologies and products which contaminate an environmentally sustainable economic system. Avoiding the dumping of environmentally-damaging products requires strong co-operation among Central and Eastern European countries to develop an environmentally-oriented, selective policy towards technology transfer.

4. POLAND

i. International assistance

Recent years have brought a substantial revival of Poland's contact with external partners on environmental protection. This is, in particular, relevant to the wider opening towards the initiatives of European countries, the USA, as well as international environmental organisations and financial institutions. Poland's intensified activity on the international stage has provided for an increased participation in the formation of new co-operation patterns and a new world ecological order.

Poland has been receiving assistance for environmental protection since 1990. Subsidy of 227 mln USD from 11 countries and 2 international organisations (EU and World Bank) was allocated in 214 projects. Almost 1/3 of these projects is concerned with nation-wide problems. Another are regional-wide are being realised in 32 Voievodships mostly in Katowickie Voievodship (32), Krakowskie Voievodship (13), and coastal Voievodships (38).

From all 214 projects 51 has been finished already with international assistance of 19 mln USD, and 113 are now under realisation (163 mln USD). 50 projects are now in different stages of feasibility study.

International assistance is focused on priorities of the Polish National Environmental Policy and regional demands for improvement in basic fields of environmental protection. 80% of subsidies have been spent on:

- air protection 38%
- water protection and water management 21%
- soil protection 85%
- nature protection 3%
- environmental monitoring 10%

The remaining part was spent on preparation of management plan in different fields of environmental protection and ecological education.

This aid will bring about a dramatic change as far as the state of the environment is concerned. Such change may only be achieved through the engagement of Poland's own resources and/or by the investors under strict execution of environmental requirements.

Despite the limited financial size of the external aid it has a tremendous importance as a catalyser for the improvement of environmental management as well as for the transfer of Western knowledge and technology to Poland.

5. ROMANIA

Romania has a tradition of co-operation with neighbours and other international partners, through the ratification of a number of international agreements.

Many relate to the Danube, its delta and the Black Sea.

Romania therefore participates actively in the Convention for Navigation along the Danube (Belgrade 1948); the Bucharest Declaration of 1985 concerning the water management of the Danube, which recommends systematic confirmation and common measurements of pollution, together with a system of an exchange of data and co-operation against flooding.

Other international agreements signed by Romania are:

- Convention on the protection and use of transboundary rivers and international lakes (Helsinki 1992), signed by the Romanian Government but not yet ratified

- Convention on the protection of the Black Sea against pollution (Bucharest, 1992), ratified by the Romanian Parliament Law 98/1992

- Convention between the Romanian and Bulgarian Governments concerning co-operation in the field of environmental protection (Sofia 1992), ratified by the Romanian Parliament Law 97/1992

and examination is currently under way of two draft Conventions - on the ecological basin of the Danube and on the Danube river management.

Romania also receives funding from the PHARE programme of the European Union; from UNDP; from the World Bank and from the BERD, amongst other international donor institutions, for a wide range of environmental projects in the Danube Basin and concerning the Black Sea.

6. SLOVENIA

A successful environmental policy can, of course, not remain within local or regional limits. A deeper strategy is necessary which pertains to the planet as a whole since environmental pollution and other environmental problems do not recognise borders.

As a part of Yugoslavia, Slovenia signed and implemented numerous international multilateral, trilateral and bilateral agreements in the field of environmental protection. In its Declaration of Independence of 25 June 1991, Slovenia promised to respect all agreements consistently and to consider itself their fully authorised successor. From this point of view, we hope for the quickest possible legal resolution of the succession question. As soon as possible, Slovenia will study those international agreements which the former Yugoslavia for various reasons did not sign and, within the limits of the country's possibilities, formally accede to them.

As a new country within the United Nations Organisation, Slovenia has already joined many of its specialised organisations dealing with environmental protection. Some United Nations programmes are currently in progress in the Republic of Slovenia.

In co-operation with the neighbouring countries, Italy, Austria, Hungary, and Croatia, a number of environmental programmes and projects have already been started, which the country intends to strengthen and consolidate in the future.

Slovenia recently became a member of the European Conference of Security and Co-operation and of the Council of Europe, and has made contacts with EFTA. The long-term orientation of the country is to join the process of European integration, in which much attention is being given to the very issue of environmental protection. With this in mind, Slovenia intends to adopt the environmental standards of the European Economic Community in accordance with our possibilities for their realisation.

CONCLUSION

A. The physical state of the environment

Virtually all countries lay the blame for a poor quality environment firmly with the Communist legacy. In many countries, adequate environmental protection legislation existed, but was ineffective in that economic and industrial development always took precedence over environmental legislation. Public participation in environmental protection was virtually non-existent and, on top of the lack of political commitment to apply the legislation, breaches of it were never publicised or generally known about.

Specific problems

Extensive air pollution is a common feature, caused by heavy industry, using old-fashioned technology, by power plants, domestic heating, private and public transport, excessive emission of CFCs, etc.

Land is heavily polluted by chemicals, fertilisers, metals and, in some cases, by radioactive substances.

Water, particularly ground water, quality is very poor. Many of the principal rivers are highly polluted - for example, all in Bulgaria except one. The Black Sea, the Baltic, the Danube, have high levels of heavy metals, pharmaceutical waste and even radioactive substances in excess of the permitted norms.

There are many cases of inadequate sewage treatment and a high percentage of direct discharge of untreated sewage.

Waste disposal is a constant problem, with little recycling facility and with large quantities of domestic and industrial waste taking up major landfill sites and the incidence of illegal dumping is very high. There are serious drinking water problems caused by pollution at source and inadequate or insufficient treatment technology or plants.

The replies, in some cases, refer to the impact of pollution on wildlife and on forest resources and, more significantly, to the known impact on health in a number of highly polluted areas, with high concentrations of heavy metals in blood, hair and nails and the incidence of respiratory, cancer and circulatory diseases in heavily affected areas.

The picture is not totally black, however. Reference is made to areas and regions which are comparatively pollution-free and some improvements are noticed, although many of such improvements are generated as a result of economic difficulties which have the effect of shutting down energy-squandering and polluting factories. Whatever the reason, there are however some improvements, eg in the water quality of Lake Balaton.

B. The current situation on environmental protection

Remarkably, many countries have had adequate environmental legislation, from some time ago - in Bulgaria in the 1930s; in the Czech Republic in 1940; in Hungary in 1976 - but enforcement has not taken place.

The real breakthrough has been achieved since 1990, with the beginning and strengthening of democratic reform. In some countries, the right to a healthy and safe environment is incorporated into the new basic Constitution of the country (in Slovenia and Hungary, for example).

In Bulgaria, the new Environmental Law was enacted in 1990; in 1990 in the Czech Republic; in 1990 in Hungary; in Poland, a whole new series of laws and legislation on land and soil quality and air emissions was introduced in 1990; in Slovenia in 1992.

Typically, such legislation makes provision for information and monitoring the current environmental situation; the development of statistics; the incorporation of environmental impact statements; the rights and obligations of central and local government; the inclusion of charges for pollution rights within permissible limits; penalties for violating the law; incorporation of the polluter paying principle; legal redress for the public; an assessment of cross-frontier impact; the establishment of norms in air, water and soil quality; the protection of nature and landscapes; of agricultural and forestry resources, etc.

In general, the impetus for new legislation has been associated with the transition to a parliamentary democracy and a market economy; a desire to match norms established as part of the process of European integration; the poor quality of the environment and increased public unrest because of it.

The aim of reform is generally to establish modern legal and economic mechanisms for protection and to make legal systems comparable to those in the developed world.

C. New principles and new approaches

Principal innovations reported upon include national information and monitoring systems on the degree of environmental deterioration and pollution loads; more access to the public for scrutiny of all stages in environmental planning; the provision for environmental impact assessment and, above all, the creation of national funds for the environment (Czech Republic; Poland; and shortly in Slovenia) and, in some cases national Ecobanks.

The purpose of such funds is to provide finance and loans for investment for other action to protect the environment, covering the protection of water, air, nature, landscapes and soil from pollution and the treatment of waste.

The financial resources for the funds come from licensing fees for exploitation of natural resources; pollution levies or fines and from government sources and other endowments.

D. Raising public awareness, mobilising support for environmental protection and education for the environment

Most countries report on very little public participation until recently. Very little provision for participation existed in previous legislation and the public generally felt a disaffection towards public authorities and, particularly, central government. The principal challenge now is one of creating or recreating national dialogue, a basic change from the climate of previous regimes based on secrecy, rigid control of speech and communication channels and reliance on ideology to hide the true condition of society, including environmental problems.

Nevertheless, protest did exist, often being the only safe form of protest against a government, eg in Hungary against the Danube dam of Bos-Nagymaros.

In the 1990s, a considerable number of non-governmental organisations sprung up and community groups on environment and ecological questions; with more access to information, there was a fear of an ecological disaster or worry about immediate environmental quality. Some surveys, such as in the Czech Republic, have shown 80% of persons dissatisfied with their immediate environment.

However, such groups still do not have many funds nor do they coordinate their activities.

Furthermore, public participation in environmental questions has been overshadowed by political and economic issues - a tendency reinforced by some politicians insisting that environmental quality can only be secondary once economic questions have been resolved.

All countries which include information on this aspect underline the important role of mass media in securing a change of attitude and encouraging public insistence upon access to environmental information.

There are some improvements in educational curricula which include environment questions and the opening of training and information centres.

E. Multilateral co-operation and international organisations

Most countries indicated a need to ensure adequate transfrontier agreements to deal with pollution and multilateral environment problems - generally because of their geographical position. Their water basins extend into other countries, with rivers beginning or ending in other countries. Meeting the challenge of clean air, water and soil inevitably therefore means development of joint policies with neighbouring states.

Moroever, an increasing recognition of growing worldwide implications of environment problems points to closer involvement in international or European aspects of environmental protection.

However, dealing successfully with transfrontier pollution requires careful consideration of the different physical, economic and political circumstances of each country. There is considerable variety in the regulations and varying degrees of enforcement in neighbouring countries.

Also problematic is the question of East/West technological transfer. The recipient countries voice anxiety about receiving environmentally harmful technology and, particularly, the risk of the dumping of environmentally damaging products - a threat which requires strong co-operation between Central and Eastern European countries.

There is also a fear that some international conventions might have negative economic consequences for the country in question.

Despite the signing of international conventions, their impact on domestic environmental legislation and public awareness is not significant.

That having been noted, there are many examples of environmental improvement projects which benefit from bilateral agreements with partners and municipalities in many western countries and with international institutions, as part of aid programmes for specific projects and expertise. Environmental twinnings and partnerships are also being developed.

F. Local authorities

Introduction

The material on local and regional authorities received from countries contributing to the report generally indicates that particularly local authorities still do not have extensive or clear functions in respect of environmental protection.

1. Albania

The principal defect is still that an unclear institutional relationship between local and central government hinders local authorities in developing effective policies for environmental protection.

2. Bulgaria

At present, there are sixteen regional inspectorates of the national Ministry of the Environment, but local authorities do not have clearly defined responsibilities and their coordination with the regional environmental inspectorates is often sporadic.

Currently, the main environmental function of local authorities is the provision of water supply, waste water treatment and solid waste management. However, more financial investment is required if drinking water quality is to be improved and if waste water treatment and solid waste disposal are to be made more effective. The reality is that such resources are simply not available.

The legislation giving municipalities their environmental possibilities centres around a system of permits for land use planning, construction and building, and assessment of the environmental impact of existing or new industries (Environmental Impact Assessment).

In practice, most of such permits can only issued with the consent of the national Ministry, regional inspectorates or the regional plans developed by the Land Commissions.

The report from Bulgaria makes strongly the point that local governments should have their own programmes for environmental protection, in the same way as they should have the right to conduct referenda about problems affecting the community and the right to pass their own laws, which should have equal jurisdiction to national legislation.

The report also makes the point that local authorities should not be too rushed to close down polluting industry, in that many communities have their economies focussed upon a single industrial sector; emphasis should be more upon finding an alternative solution and developing programmes for economic diversification and retraining of manpower.

Above all, the report from Bulgaria insists that local authorities should be given a much more substantial role in environmental policies if programmes are to be effective. The same point is made about strengthening the role of the regional councils for environmental protection.

3. Czech Republic

The Ministry of the Environment in the Czech Republic has an Environmental Inspectorate with 42 regional branches. Local authorities have some environmental protection functions, but only in a limited number of cases concerned with, for example, monitoring of air pollution. An example is the facility given by the national administration for protection of the air to the City of Prague to designate areas in the city where pollution must be reduced. Local authorities have the possibility, furthermore, of imposing penalties for pollution.

Details about the responsibility of the City of Prague for air pollution are included elsewhere in the report. Equally, more detailed information will be published as a supplement from the material sent to the Rapporteur but too late for inclusion into the current report.

4. Hungary

The powers for environmental protection in Hungary are highly centralised. As in other countries, the national Ministry of the Environment has regional environmental inspectorates which have the power to issue Directives arising from national policy.

The overall planning of the water management and nature conservation lies with regional authorities. In theory, local government may undertake environmental responsibilities but these are limited, owing to the lack of funds. The main local government responsibilities are for the provision of drinking water and the collection of household waste. Coordination between local government and the different regional authorities responsible for aspects of environmental protection is far from effective.

The local elections, theoretically, meant that local governments would have more possibility to exert pressure on large-scale polluting industry, compared to the past when they had no, or very little, leverage over industrial pollution within their boundaries. However, there are still lacking legal forms of enforcement and redress.

The material from Hungary makes the point that local governments should have major responsibilities for sustainable development and that legislation should enable them not only to ensure that land use, development and environmental protection policies corresponde to national standards, but also give them the power to set more stringent requirements according to local conditions.

The Hungarian material also underlines the importance of clarifying the relations between national and local government and that attempts be made to ensure that there is a clear understanding of national and international standards by local officials. Procedures for uniform methods and standards for environmental impact assessment must be established.

The proposal is made that, to provide advice and technical assistance to local governments, regional advisory structures should be created by the national government to help ensure the effective design and coordinated implementation of economic, land use, water and environmental policies that promote sustainable development. Such regional advisory bodies would provide technical services in developing links between national databases and local data needs, technical assistance and training for local government officials, assistance to local government issues.

The report also refers to local government and its role in developing public awareness about the environment; that local governments should develop procedures to ensure input review and participation in their activities and to further the goals of educating the public about environmental issues. Wherever possible, public agencies should conduct hearings, public meetings and fora and present programmes through newspapers and television. New plans, programmes and legislation should provide for an open public inspection period. Environmental assessment reports should be required for all major new investments and be made available for public inspection and should be open to public discussion through public hearings.

5. Poland

No detailed information on the responsibility of local authorities was received, but there are references throughout the report, on the sections concerning Poland, which refer periodically to this question.

6. Romania

Local government has significant environmental responsibilities, but in reality few resources to carry them out. The major responsibility lies nationally with the Ministry of Water, Forestry and Environmental Protection, which has branch offices in the 40 Judets and in Bucharest.

The environmental obligations local authorities include the prevention and limiting of the incidence of dangerous substances and waste within their boundaries; informing environmentally responsible bodies of the current situation; issuing permits for the dumping of domestic and industrial waste; ensuring the use of adequate treatment and incineration measures; protecting natural and forest resources and green areas.

They are also obliged to ensure compatibility with environmental objectives; all urban and territorial planning; monitor the polluting effects of commercial and industrial development; develop programmes for sewage, collection of rainwater and ensure quality in drinking water supplies; encourage public interest in and knowledge of the environment and establish local funds for environmental improvement. They also have responsibilities for the protection of parks and green spaces.

7. The Slovak Republic

The municipalities are empowered to request resources from the National Fund for the Environment. However, given the limited possibilities of this Fund, municipalities are often obliged to have recourse to bank loans in order to respect environmental legislation.

Local authorities are responsible for the collecting of domestic waste; the construction of incineration plants and dealing with industrial waste, in collaboration with industry.

The same problem arises with water treatment plants and the water distribution. State companies are theoretically obliged to meet such responsibilities, but their income does not cover expenses. Hence, municipalities are obliged to assist but often at the expense of taking out additional bank loans.

Air pollution is dealt with by the national government. Local authorities receive revenue from fines and charges for small-scale pollution.

8. Slovenia

No detailed information on the responsibility of local authorities was received, but there are references throughout the report, on the sections concerning Slovenia, which refer periodically to this question.