

ENVIRONMENTAL POLICY IN COUNTRIES IN TRANSITION*

Željka Kordej-DeVilla**

1

INTRODUCTORY NOTES

The analysis of the economic and political changes in Central and Eastern European countries in the '80-ties and '90-ties discovered the seriousness of the environmental problems in these countries which resulted from the economic and political characteristics of the former centrally planned system. This paper is aimed at reviewing the basic features of the environmental policies in transition countries in general and does not analyze the situation of each particular country¹.

Public discussions as well as articles in journals constantly feature the idea of the "disastrous condition" of the environment in the transition countries. Therefore, the following chapter examines the condition of the environment in Central and Eastern European countries as well as the causes of such a condition.

The process of economic and political restructuring in those countries offers opportunities for designing new environmental policies that would be founded on a more widespread implementation of the economic instruments. Therefore, the third chapter deals with the basic features of the new environmental

* This paper was originally published in *Economic Trends and Economic Policy (Privredna kretanja i ekonomska politika)*, 1999, No. 77, 41-70.

** Željka Kordej-De Villa, Institute of Economics, Zagreb.

¹ When possible, tables illustrating the specifics of the particular countries were used.

policy, as well as the impact of the economic and political reforms on the environmental quality.

Since most of transition countries are subject to strong financial restrictions, and the role of bilateral donors and international financial institutions is small and mostly serves for directing those funds, these countries have opted for creating the earmarked funds for environmental protection. The fourth chapter discusses the need for establishing these funds, their role in the post-transitional period, and their likely role in the future.

One of the basic aims of the transition countries' economic policies is accession to the European Union. In order to be able to accomplish that in the field of environmental protection as well, the transition countries have to harmonize their legislation and environmental policy standards with the legislation of the European Union. This is a great additional expense for the transition countries. Chapter five deals with these precise expenses.

The last chapter brings us up-to-date with the principal characteristics and uncertainties in defining the new system of financing the environmental protection in Croatia.

2 THE STATE OF THE ENVIRONMENT IN TRANSITION COUNTRIES

The decades of centrally planned systems have made an impact on the state of the environment in Central and Eastern European countries. The heritage is both positive and negative.

A high degree of concentration of industry and population just in certain areas, and the traditional and work-intensive agriculture have facilitated the preservation of the valuable eco-systems. It is estimated that about 30 percent of the total area of Central and Eastern European countries is still untouched and free of economic activities, and is considered to have the highest biodiversity in Europe².

However, the former economic system has also left problems and environmental damages. Some of these inherited environmental problems have become worse in the transition period. According to the criteria of their impact on human health and the entire well-being, the most significant problem

² For more details see *Strategic Environmental Issues in Central and Eastern Europe, Vol.1.*

is the total air pollution as a result of the domination of the processing industry in the economic structure, intensive use of fossil energy and the use of obsolete technologies and production procedures in most countries. A great increase of the number of vehicles in the transition period has been contributing to the worsened quality of the air, particularly in the cities.

The pollution of the surface waters by draining the wastewaters from the industrial sector, agriculture and households, together with the falling quality of the underground waters is another environmental problem requiring prompt solutions.

The storage of the municipal waste is considered a direct threat to the environment and health in the densely populated areas in the majority of the transition countries. Numerous unregulated dumps, inadequate infrastructure, insufficient knowledge of the storing techniques and the growing quantities of waste trouble almost all major cities in the transition countries. The preservation of the forest areas, the shrinking thereof is closely linked to the air and water pollution problem, is also among the highly ranking tasks in the field of environmental protection.

Nevertheless, the storing of toxic waste and nuclear security are perceived as priorities in solving the environmental problems. Table 1 contains the data on the air quality in the transition countries in 1995, measured by the quantities of SO_2 , NO_x , CO_2 emissions per inhabitant and compared to the OECD countries.

If we take into account the fact that industry and other industrial combustion processes are the principal sources of SO_2 emission, the extremely high values of that indicator in the transition countries in comparison with the OECD average are hardly surprising. Traffic, particularly road traffic, accounts for the NO_x emission per inhabitant, which is somewhat higher in the OECD countries than in the selected transition countries. No significant differences have been noted in the values of the CO_2 emission indicators. However, the indicators of the sulfur and nitrate compound and carbon dioxide load per the GDP unit showed to be much lower for the OECD countries than for those in transition. This is attributed to the state-of-the-art technologies and production processes used in these countries.

The energy efficiency indicator, which is measured by the amount of energy necessary to produce a GDP unit, is more favorable for the OECD countries. However, the amount of municipal waste per inhabitant is lower in the countries in transition, which is a direct consequence of their lower level of income and consumption.

Table 1

**SELECTED INDICATORS OF THE STATE OF THE ENVIRONMENT
IN SOME TRANSITION COUNTRIES AND COMPARISON WITH
THE OECD COUNTRIES IN 1995**

	Bulgaria	Czech R.	Estonia	Hungary	Poland	Russia	OECD
Emissions of sulfur compounds							
kg/inhabitant	176.0	125.0	91.0	72.0	68.0	43.0	41.0
kg/ 1000 USD GDP	41.0	14.4	25.2	12.2	14.4	6.2	2.5
Emissions of nitrate compounds							
kg/inhabitant	27.2	36.3	27.6	18.3	28.7	20.6	38.9
kg/ 1000 USD GDP	6.4	4.2	7.6	3.1	6.1	3.0	2.4
Emissions of carbon dioxide							
t/inhabitant	6.3	11.7	14.0	5.6	8.6	10.4	10.8
t/ 1000 USD GDP	1.5	1.4	3.9	0.9	1.7	1.5	0.7
Energy supplies							
toe/inhabitant	2.4	3.8	3.6	2.4	2.4	4.1	4.5
toe/1000 USD GDP	0.6	0.4	1.0	0.4	0.5	0.6	0.3
Municipal waste waters processing							
% of population included	36.0	56.0	72.0	32.0	42.0	-	-
Amount of municipal waste							
kg/inhabitant	-	400.0	406.0	420.0	260.0	340.0	490.0

Source: REC (1999).

The present state of the environment in the transition countries results from the economic and political organizations of these countries. In addition to the already mentioned causes - the economic structure dominated by energy and raw materials intensive processing industry and technological lagging³ - the unsatisfactory quality of the environment was also brought about by the prices⁴ which did not reflect the real situation on the market of energy sources and raw materials thus encouraging their irrational use. Although the official policy declarations were contrary, the state authorities were as a rule not interested in the state of the environment. Environmental protection was considered a threat to economic and political priorities. Persistence and preoccupation with the growth of the "physical output" at any price placed the environment low on the priority list. This partly explains the low level of investments in the environmental protection, the lack of motivation to adhere to the established environmental standards, inaccessibility of information on the condition of the environment etc.

Having considered the causes of such a state of the environment in the transition countries the key arising issue is: what can be done in this process of economic and political restructuring in order to improve the quality of the environment. The solution must be explored within the realm of the new environmental financing policy.

3

THE FEATURES OF THE ENVIRONMENTAL POLICY IN THE COUNTRIES IN TRANSITION

The transition from the centrally planned to market economy involves numerous economic (price liberalization, foreign trade liberalization and privatization) and political changes (democratization of the society). Countries in transition differ in the time the transition began, the sequence of the reforms carried out and in their success rate.

³ Here we think on the technologies used in production processes as well as the technologies for removing already existent pollution. The main reasons for such a technological backwarding was the autarky of the planning systems and the lack of the financing.

⁴ The necessary increase of prices in Hungary in 1986, whose aim was to bring them into balance with the OECD countries' average in the same year, ranged between 66% for oil products and 22% for coal in the industrial sector. The increases in the household sector would have been higher amounting to 66% for oil products and even 365% for gas. The price increases in Poland were even more prominent. The prices in the industrial sector would grow between 47% for gas and 425% for coal. In the household sector the price rise of oil products was the smallest (135%) and the highest was for gas (1600%). For more details, see Hughes (1993).

What is the environmental effect of the reforms carried in the transition countries? The research⁵ has confirmed that, in addition to the general economic activity decline, the environmental situation in the countries in transition was affected by other factors:

- ⇒ the scope and structure of consumption: it is expected that up to a certain level income growth has a negative effect on the environment, while the direction of this relationship changes after having reached a certain level;⁶
- ⇒ economic structure: it is expected that a higher share of the private sector in GDP has a positive effect on the environment due to increased efficiency; the increase in the share of the processing industry in GDP will have a negative effect on the environment;
- ⇒ legal regulation and institutions: it is expected that a higher degree of regulation and institutions standardize environmental issues have a positive effect on the environment⁷;
- ⇒ economic openness: it is expected that the increased economic openness measured by GDP shares in exports and imports has a positive effect on the environmental situation; as for foreign direct investment, there are no clear expectations;
- ⇒ population: there are no clear expectations in that respect, although the countries with the highest population figures generally invest more in environmental protection and in that way reduce the pressures on the environment;

⁵ *There are only a few papers that analyse the impact of the reforms on the environmental situation in the countries in transition. In their paper Archibald and Bochniarz (1998) examine the changes in the air quality in Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia in the period between 1989 and 1995, which occurred as a consequence of the economic and political restructuring. They analyse the relationship between the consumption, the openness and the structure of the economy, the legal regulation, the increase of the economic efficiency, and the number of inhabitants and the air quality based on 4 models. It can be generally stated that the results comply with the expectations, with certain exceptions connected with the model specification. It is the general conclusion that the reforms carried out have a positive effect on the air quality and that the examined period was characterised by an average decrease in the emission of CO₂ by 27%, of CO by 17%, of SO₂ by 26%, and NO₂ by 32%.*

⁶ *It is a generally accepted hypothesis that revenue growth increases the pressure on the environment, but a significant empirical question remains: at what revenue level does environmental protection become a necessity.*

⁷ *Their development can be indicated by the amount of funds raised by implementing the legal regulations in the area of environmental protection.*

⇒ increase in economic efficiency: positive effects on the environment are expected in the course of time.

Market economy requires building numerous institutions unknown to the centrally planned systems, and acquiring new knowledge and skills. Priorities gradually change, as does the attitude of the decision-makers and the public towards the environment. Such transformed circumstances also require different environmental policies. The environmental policy is realized by a combination of command-control and economic instruments.⁸

The basic feature of the new environmental policy in the countries in transition should be greater implementation of economic instruments in financing environmental protection, especially because of the many advantages of these instruments in financing the environmental protection in comparison to the command-control.⁹ Firstly, economic instruments facilitate considerable savings when allowing the polluters themselves to determine the most adequate ways of achieving the set qualitative standards of the environment. Secondly, they offer additional initiatives for reducing pollution below the regulated levels, and encourage the new procedures of controlling and reducing pollution, as well as technological innovations. Thirdly, they are more flexible than other instruments and more appropriate for the existing tax regime. Finally, they are an important source of funds for the government budget.

A long-term aim of the environmental policy reform in the transition countries is to ensure the financial means that will enable the improvement of the environment simultaneously with the economic growth.¹⁰

In order to implement the new environmental policy it is necessary to solve the problems from the previous system, as well as the new ones resulting from the transition process itself. The problems inherited from the centrally-planned systems which slow down the inclusion and the implementation of economic instruments into the environmental policy are common to all countries in transition, and include economic, legal and administrative restrictions, as well as the lack of adequate knowledge and skills necessary for carrying out the new environmental policy.¹¹

⁸ *In most countries the command-control instruments prevail. Numerous papers deal with analysing the individual instruments of the environmental protection policy. See, for example, Eskeland and Jimenez (1992).*

⁹ *For more details on economic instruments, please refer to OECD (1997). The implementation of the economic instruments in environmental protection policies in the countries in transition is known under the title of "The Sophia Initiative", after the meeting of the environmental ministers held in Sophia in 1995.*

¹⁰ *According to the principles of sustainable development.*

¹¹ *This part of the paper refers to OECD (1994).*

In centrally planned systems the rule of law did not function. State administration often used to bring arbitrary decisions, and misuse of the budget funds was almost common practice¹². The intensity of such arbitrary decisions increased by the lack of clear boundaries between the government bodies responsible for applying environmental protection and other ministries.

In addition, the environmental protection policy in the centrally planned system was characterized by high formal standards of environmental protection which were often more strict than in most OECD countries. The problem lied in the failure to adhere to the set standards of environmental quality and the lack of responsibility for those who disregarded the standards. The main reason for that was the procedure of negotiating between government enterprises and state administration. Abiding by the standards of environmental quality was always "sacrificed" so that the company could accomplish some other aims.¹³ In formulating the new environmental policy the problems inherited from the centrally planned system are coupled with the problems of the transition.

In the course of transition many companies were faced with financial problems. The implementation of the environmental taxes with the rates set at the efficiency level¹⁴ would only add to the financial burden of such companies and contribute to bankruptcies of many of them, which would present new threats to the environment.¹⁵ Also, many companies will keep their monopolist position and shift their environmental taxes on to their consumers, without changing their own behavior. In that case environmental taxes would only fulfil their financial role, without meeting their environmental aims.¹⁶

In some countries the first transition years were marked by high inflation rates, which devalued the amounts raised by taxes. Therefore, in such a

¹² For instance, using the funds intended for environmental protection for other purposes, such as covering the state deficit, etc.

¹³ In planned systems companies were protected from bankruptcy by "soft budget constraints", and in that way pollution dues did not have an adequately motivational role in the reduction of emissions. The companies were able to simply pay their dues and penalties, without adjusting their emissions.

¹⁴ The optimal tax rate should be equal to the marginal cost of production increased by the added value of externalities.

¹⁵ Restructuring through bankruptcies and closing given plants can result in problems of abandoned polluted grounds for which no one assumes responsibility etc. Discontinuing and resuming production in certain types of companies may also contribute to reducing the established standards of the quality of the environment.

¹⁶ Two basic functions of ecology taxes are to change the polluters' behaviour towards realising the aims of the environmental protection and to raise funds for the government budget.

situation taxes were most commonly applied in combination with the command-control instruments.

The transition period is characterized by a high degree of economic and institutional uncertainty. This includes future institutions and rules, as well as the basic economic indicators (prices, interest rates) that determine the rights and the responsibilities of the different economic subjects concerning to pollution.¹⁷

The parallel existence of the public and the private sectors in the transition countries is a specific problem. The public sector is generally less sensitive to any kind of financial incentives, and will probably continue to be managed by specific mechanisms and regulations regarding access to financial means, appointments of high officials, etc.

In order to apply the economic instruments in countries in transition it is necessary to overcome the previously stated obstacles and realize certain preconditions. This can be summed up in the following points:

1. Strengthening the rule of law with a more complete definition of ownership rights and regulations which determine the responsibilities of the economic subjects and bodies that carry out the environmental policy; implementation and enforcement of laws;¹⁸ protection of the tax payer from arbitrary administrative decisions,¹⁹ differentiating the responsibility for the environmental problems that originated in the past from the present ones;²⁰
2. Updating administration (new know-how and knowledge, introduction of information systems, separating the basic

¹⁷ In conditions of uncertainty the advantages of fiscal instruments in the environmental protection policy are reduced. In that context their financial role becomes dominant.

¹⁸ This includes the so called "struggle against ecological delinquency" which means private appropriation of common grounds in the protected areas, imports of toxic waste, directing the funds raised for the environmental protection for other purposes.

¹⁹ Economic subjects should be protected from arbitrary administrative decisions which were typical of planned systems. As for the environmental protection policy, this means restricting the power of individual officials. The application of fiscal instruments can introduce a significant degree of automatism and impose restrictions which cannot be subject to negotiation nor avoided either by the administration responsible for their implementation, or by the tax payer.

²⁰ Defining responsibility is especially important for the success of the privatisation process, as well as any policy directed at attracting new investors. A potential buyer may refuse the risk of responsibility for the high cost of cleaning which were not known at the moment of purchase. Therefore, it is necessary to define the rules and procedures with reference to the responsibility for the costs arising from the previous neglect of these problems.

- administrative functions from the individual bodies²¹);
3. The reshaping through privatization of production units into "real" companies capable of competing in the market, with carefully defined rights and obligations;
 4. Increasing stability and predictability of the institutional context of environment management; the investment's aim is to make the environment safer.

The issue is how efficient can the environmental policy based on the implementation of the economic instruments be in resolving the environmental problems of the countries in transition. The relationship between the state of the environment and the taxes are still relatively scarcely researched even in the OECD countries.²² Many interest groups oppose the so-called environmental tax:²³ those who refuse to see the role of the state extend into the field of the environment, and the industry which systematically refuses to see taxes as an integral part of the environmental policy. It is unrealistic to expect that the economic instruments will substitute the command-control instruments in the countries in transition more efficiently than they did in the OECD countries. At this very moment it can be concluded that they will be used complementarily with the other environmental policy instruments. In the shaping of the new environmental policy in the transition countries the gradual approach is suggested in the following steps:²⁴ removing the environment-damaging subsidies²⁵ (energy, artificial fertilizers, etc.); recognizing and removing environment-damaging taxes; evaluation of the possibilities in which the existing taxes can improve the state of the environment; introducing new ecological taxes. The decision of choosing the moment for reaching for the economic instruments depends on the particular

²¹ *The lack of quality statistical data on everything that had no direct connection with production is typical for the centrally planned systems. Introduction of high-quality information in the transition period is very important due both to returning credibility to state administration and choosing correctly between the different instruments.*

²² *For more information on this, refer to OECD (1997).*

²³ *In Croatian the notion of "environmental taxes" is still translated differently; as "ecological taxes", "taxes on the environment", "green taxes". Discussion on the appropriateness of each one of them still remains.*

²⁴ *The Environmental Action Plan for Central and Eastern Europe prepared for the ministers' meeting by the OECD Task Force in Lucerne in 1993.*

²⁵ *There are also subsidies paid through the tax system when the decision-makers introduce certain tax exemptions for the activities that have a positive impact on the state of the environment, instead of imposing taxes on the activities that cause damages to the environment. Such a system has numerous negative consequences. One of them is the lack of transparency. The second one is the need for additional public revenue collected by means of other tax forms with possibly distorting effects.*

condition of each country. A widespread implementation of economic instruments is not expected to be used in the early transition stage. In the period marked by a fall of physical production the priority is to start production and investments, and improve the living standard. The second reason is that only industrial restructuring can lead to an improved environment. The main impetus for that structural reform, which should lead to a higher production efficiency, will be increasing the prices of energy and raw materials. Due to these reasons economic instruments seem to be very easy to exclude from the environmental policy. This should not be done since the new investments into technology will neglect the environmental issue. Inappropriate technology will result in an unacceptable production structure. In addition, since companies pay more and more attention to price and market signals, there will be a tendency to ignore every aspect which is not expressed in the form of a price. Table 2 contains economic instruments used in the transition countries.

The study of literature on the experiences in implementing economic instruments in the environmental policy in the countries in transition revealed some common features and problems. In spite of the numerous difficulties in their implementation, economic instruments facilitate early integration of the environmental issues into economic decisions and linking the environmental policy to other sector policies.

The implementation of the economic instruments in some countries in transition started already in the planned system and is still undergoing significant changes.²⁶ Common problems include excessive complexity of the fiscal system and the system of compensation, as well as the lack of effective monitoring of harmful emissions and of evaluating the effects of the chosen environmental policy instruments. Economic limitations present in those countries hinder the determination of the level of tax rates and penalties that would have an incentive role in reducing pollution.²⁷

²⁶ Estonia introduced economic instruments as early as in the 1960-ties, but only since 1992, when its national currency was introduced, they have been an important financing instrument. This confirms the fact that the macroeconomic stability is one of the preconditions for developing the environmental policy.

²⁷ This is true even for Poland where tax and compensation rate are among the highest in the world, although still insufficient to be an incentive factor. In Russia high inflation and economic uncertainty have made the implementation of the economic instruments in environmental policy, especially complicated. Tax system, introduced in 1992, is a good starting point for the further development of environmental policy.

Table 2 (continued)

	BUG	CRO	CZE	EST	HUN	LAT	LIT	POL	ROM	SLK	SLO
Transport											
-differentiated taxation of leaded and unleaded petrol	•	•			•	•		•	•	•	•
-charges for fuels					•						
-increased import taxes on used cars without catalysers	•				•	•	•	•	•		
-road tax		•	•		•					•	•
-noise tax			•								
Protection of Biological Diversity											
-penalties for noncompliance to the environmental protection requirements	•	•		•	•		•	•		•	
Natural resources and mining											
-tax/charges for the use of resources		•	•	•	•	•	•	•			
-charges for use of waters		•	•	•	•	•	•	•	•	•	•
Other											
-tax exemption for technology in environmental protection			•	•	•			•	•	•	
-customs exemption for imports of technology for environmental protection	•	•		•	•				•		
Environmental funds	•	•	•	•	•	•	•	•	•	•	•

Note: *BUG* - Bulgaria, *CRO* - Croatia, *CZE* - Czech Republic, *EST* - Estonia, *HUN* - Hungary, *LAT* - Latvia, *LIT* - Lithuania, *POL* - Poland, *ROM* - Rumania, *SLK* - Slovakia, *SLO* - Slovenia.
Source *REC* (1999).

Table 2 shows that the charges for the different products is the key instrument of the environmental policy in the countries in transition. It also leads to the assumption that the countries in transition will not implement new innovative instruments in the environmental policy due to their complexity and expenses for their use. Nevertheless the Czech Republic, Latvia, Lithuania and Poland are in the process of introducing the system of marketable permits, while Estonia and Poland have established CO₂ emission charges. That instrument is already being implemented in Slovenia. The reform of the fiscal system in terms of introducing environmental taxes is already in effect in Poland, the Czech Republic and Slovenia.

Furthermore, in most countries economic instruments do not play an incentive role and are mostly aimed at collecting revenue, as most of it goes into extra-budgetary environmental funds and their different environmental protection projects. Earmarked financing of the environmental protection through the environmental funds is examined in text below.

4

ENVIRONMENTAL FUNDS AS INSTRUMENTS OF FINANCING ENVIRONMENTAL PROTECTION IN THE TRANSITION COUNTRIES

In the course of transition to market economy a number of market, institutional and other factors slow down the efficiency of the financial instruments for financing the environmental protection, which are typical of market economies. This can include weak enforcement of the environmental policy, financial limitations of the companies and households, underdevelopment and insecurity of the fiscal system, insufficiently developed banking and capital markets system, insufficient information on environmental damages and the like. In response to such a situation most Eastern and Central European countries²⁸ have introduced extra-budgetary designated funds as an instrument of financing environmental protection. Funds were envisioned as temporary and transitional mechanisms for solving these problems.

In this chapter we shall analyze the basic characteristics and roles of those funds, their relationship with the existing environmental policy, and

²⁸ Croatia is currently the only Eastern or Central European country in transition that has no environmental fund.

their role in the future.²⁹

Environmental protection funds are institutions with the aim to direct the budgetary and extra-budgetary means to environmental protection projects and cannot be found in developed market economies³⁰. By reducing the financial load of investments into the environmental protection, which would otherwise be covered by the companies and households, funds can accelerate the improvement of the environments in those countries³¹. Besides that, funds can also perform a significant institutional function: fostering the development and acquisition of knowledge and expertise related to preparing and evaluating projects that are so often deficient in countries in transition. Working with the commercial banks, they also help the transfer of knowledge into the private sector.

When considering whether setting up such funds is justifiable, the first issue that arises is the *efficiency of spending the earmarked funds*. The earmarked spending implies pulling the funds out of the regular spending process and reducing the funds at disposal for other purposes. This can present a difficulty in the long-term, since the funds can be directed through sheer inertia towards the problems which no longer present a priority. The cost-efficiency of earmarked financing is low due to another factor: because the level of financing from budgetary funds is more adjusted to the changes on the revenue side and less on the expenditure side. In political balancing of powers the choice is between financing health, environment, maintaining macroeconomic stability, etc. In addition to that, earmarked financing of the environment contains the pitfall of long-term reduction of budget support.

Today, it is more and more acceptable to believe that in periods of financial scarcity well-designed funds are efficient mechanisms of channeling means towards solving the environmental problems in the countries in transition. Since in those countries expenses for the environment account from 1-2 percent of GDP the risk of inefficiency, which is regularly connected with earmarked spending of financial means, is limited by a low level of costs for the environment compared to the much higher shares of other public needs.³² For some countries

²⁹ See Francis, Klarer and Petkova (1999). The chapter is based on an OECD research, initiated by the OECD Centre for Cooperation with the Countries in Transition on examining the role of the funds, and the analysis was carried out by the Environmental Directorate and the Directorate for Financial, Fiscal and Enterprise Affairs. A document entitled "St. Petersburg Guidelines on Environmental Funds in the Transition to a Market Economy, 1995, originated as a result of this project.

³⁰ Those countries have funds for specific purposes, e.g. fund for water resources management.

³¹ Since the funds do not cover the expenses in full, they are an appropriate mechanism for "attracting" domestic and foreign means.

³² Bovenberg, Cnossen (1995, p. 211).

this was the only way out. Still, it is necessary to stress that relying on earmarked funds as well as using subsidies represents the so-called "the second best solution".

What are the basic features of environmental funds in the countries in transition? They are mostly general national funds which use their funds for financing and assisting private or governmental companies in environmental protection projects. Most funds have a two-fold structure: a management and a supervisory board. They differ only in their institutional status: some of them are independent, but they mostly act from within the ministries of the environment.³³

Table 3 shows the basic features of funds in individual countries in transition.

Funds differ in structure, the time when they were set up, the sources of funds etc. National funds are typical of The Czech Republic, Hungary and Slovakia. Bulgaria has national and municipal funds. In Poland and Russia the funds were set up at three levels - national, regional and municipal.

The table also demonstrates that the most important sources of the environmental taxes and penalties for non-compliance to the environmental protection standards. The privatization revenues are significant in Estonia accounting for 27 percent of the total revenues of the fund.

The basic disbursement mechanisms are donations (grants), various forms of soft loans, investment into stock capital, etc. The choice will depend on the remaining macroeconomic conditions, the development of transition, capacity and expertise of the fund, as well as the power of the commercial banks, etc.

As an instrument of the environmental protection policy, the fund gears its assets into resolving the priority environmental problems,³⁴ and ensures that they are used in a cost-effective way.

³³ *If a unit within a given ministry uses the existing expert knowledge, and if it is an independent institution, the fund is free from political pressures and institutional inefficiencies typical of government bodies. Each one of those variations has its advantages and disadvantages, which means that the situation in each country will particularly determine the desired solution.*

³⁴ *The Programme of Activities on Environmental Protection for Central and Eastern Europe established three priority areas for the fund's resources. They are building and adjusting institutions, investments in the environmental protection and the reform of the environmental policy. The funds are focused on intensifying procedures of auditing, modernisation of the existing production processes and management practices, which may result in additional reductions in the amounts of pollution. In 1996 in Poland these funds financed 40% of the total investments intended for reducing pollution, in Lithuania and Slovenia this rate was 20%, while in Russia it was only 5%.*

Table 3

BASIC FEATURES OF ENVIRONMENTAL FUNDS IN SELECTED TRANSITION COUNTRIES IN 1997

	Bulgaria (State Fund for Environmental Protection)	Estonia (Central Fund for Environmental Protection)	Poland (State Fund for Environmental Protection and Water System)	Russia (State fund for Environmental Protection)
Begins operation	1993	1990	1989	1992
Institutional status	A unit of the Ministry of Environmental Protection*	A unit of the Ministry of Environmental Protection*	Independent	A unit of the Ministry of Environmental Protection
Revenues/expenditures (mil US\$)**				
1993	3.60 / 2.18	..	266.70 / 204.94	3.66 / 2.70
1994	4.42 / 3.42	0.93 / 1.08	338.06 / 278.89	9.50 / 7.54
1995	5.94 / 6.25	1.78 / 1.83	481.58 / 428.44	10.41 / 8.92
1996	6.14 / 8.48	6.78 / 5.41	432.60 / 510.12	14.23 / 3.15
1997	9.49 / 4.38	7.69 / 8.78	418.61 / 389.67	18.48 / 17.31
Main sources of revenue (% share in total revenue)	<ul style="list-style-type: none"> - charges for liquid fuel (78%) - privatization (14%) - administrative fees (4%) - environmental protection penalties (3%) - loan repayment with interest (2%) 	<ul style="list-style-type: none"> - environmental protection fees (46%) - privatization (27%) - charges for minerals extraction (18%) - packaging tax (3%) - loan repayment with interest (2%) 	<ul style="list-style-type: none"> - charges in environmental protection (54%) - repayment of loans with interest (36%) - gains from financial transactions (6%) - international loans and donations (4%) - environmental protection penalties (1%) 	<ul style="list-style-type: none"> - charges and penalties for pollution transferred from regional funds (66%) - transfers from maritime funds in the far-eastern and north-western parts of the country (26%) - repayment of loans with interest (5%)
Disbursement mechanisms (% share in total payments for environmental protection projects)	<ul style="list-style-type: none"> - donations/grants (77%) - investments into stock capital (16%) - interest-free loans (8%) 	<ul style="list-style-type: none"> - donations/grants (90%) - interest-free - loans (8%) - soft loans (3%) 	<ul style="list-style-type: none"> - soft loans (61%) - donations/grants (31%) - investments into stock capital (5%) - subsidized interest (3%) 	<ul style="list-style-type: none"> - donations/grants (53%) - investments into stock capital (37%) - interest-free loans (8%) - soft loans (2%)

Note: * Independent from 1996.

** Nominal values are calculated on the basis of average annual exchange rates.

Source: Schlegelmilch (1999) and REC (1999).

Priority areas of investment also differ depending on the environmental problems in individual countries. In Bulgaria 44% of the fund's expenses is designated for the water protection projects and 21% accounts for monitoring the state of the environment. The situation is similar in Estonia. In Poland 39% accounts for water protection, and 33% accounts for air protection projects. In Russia 34% of the expenses is intended for environmental protection projects, 20% for projects on waste management, while 15% accounts for monitoring the state of the environment³⁵.

Since the public financing regulations have not yet been fully developed in transition countries and due to the lack of financial discipline, the fund can venture into financing high risk projects. In order to avoid that its work has to be subjected to public control, transparent and free from political influences.

Although they were meant to be temporary³⁶ and transitional mechanisms of overcoming institutional and market imperfections in the transition process, these funds have been present in some countries for over a decade. Therefore, it is time for evaluating their performance in financing environmental protection. There have been many discussions but relatively few investigations into their actual role in solving the environmental problems. The first question that arises is: why should funds be more efficient, transparent and competent than other institutions in the transition countries. There is no answer to this question, which explains the uncertainty of their future activities.

The fund's performance can be measured by its contribution to overcome the weaknesses of the environmental policy itself and to solve the problems related to the underdevelopment of the financial markets. The role of the funds depends primarily on the sources of financing the fund and their organization.³⁷

Their role, form, sources and mechanisms of allocation of funds are expected to change with the progress of the transition process and the development of the banking sector and capital markets. The need for their existence is likely to decline, since private sources of financing will take over. They may become totally independent and transformed into financial institutions, or abandoned and included into the budget, as it has already happened in some

³⁵ See Schlegelmilch (1999).

³⁶ Experiences have shown that once set up, the institution shows the tendency of finding new aims and tasks on its own. For example, there are signs in Poland of great institutional inertia of the funds (Jacobsen, Jorgensen and Pedersen, 1998).

³⁷ See Jacobsen, Jorgensen and Pedersen, 1998).

cases.³⁸

One of the possible new roles of the funds in the transition countries is the assimilating role in the process of accession to the European Union.

5 HARMONISATION OF THE ENVIRONMENTAL POLICY IN THE COUNTRIES IN TRANSITION AND COUNTRIES OF THE EUROPEAN UNION

One of the key aims of economic policy in the countries in transition is stressed to be their membership in the European Union. In the accession process towards the European Union the candidate countries are faced with numerous conditions, including the environmental issues which have become more and more significant. This can be explained by a growing difference between the environmental protection levels in the countries in transition and in the EU countries. The framework and the directions for harmonizing represent the so-called "environmental *acquis*" (environmental heritage).³⁹ One of the preconditions for starting the negotiations on joining for the candidate countries is formulating "The National Strategy for Adopting and Implementing the Environmental *Acquis*".⁴⁰ In partnership with the EU all candidate countries have to implement the strategy *before joining*. That document establishes the priorities and aims necessary to be met before joining and the time schedule of further activities to total harmonization. All those obligations have been included in the contracts on membership, and all new investments should be harmonized with the *Common Acquis*.⁴¹

³⁸ In Hungary, and soon in Estonia. See Francis, Klarer and Petkova (1999).

³⁹ This implies adopting, implementing and carrying out the regulations and the policies of the European Unions, the so-called "good practice". Please refer to Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee, the Committee of the Regions and the Candidate Countries in Central and Eastern Europe on Accession Strategies for Environment: Meeting the Challenge of Enlargement with the Candidate Countries in Central and Eastern Europe. The term "environmental heritage" (for "environmental *acquis*") has been adopted from REC's publication "Better Environment and Better Economy" and is another example of the unsolved terminological problems in the area of the environmental protection in Croatia.

⁴⁰ According to COM(97)2000.

⁴¹ Candidate countries are preparing PEIPA - Priority environmental investment programmes for accession - which mostly refer to regional strategies, e.g. the Danube, the Black Sea. See in *Enlarging the Environment* No 15, August 1999.

Accession is the process of adopting new and changing the existing national laws, regulations and procedures in harmony with the European Union practice, which imposes additional expenses to the candidate countries, and which is a significant obstacle in implementing the common acquisitions.

Tables 4 and 5 show the estimates of the total investment costs and total annual costs of fulfilling the standards of environmental protection and for harmonizing the legislature of the transition countries with the EU legislature. The total annual cost includes capital costs⁴² and operating costs.⁴³

Table 4

TOTAL INVESTMENTS IN TRANSITION COUNTRIES NECESSARY FOR HARMONISING WITH THE EU ENVIRONMENTAL STANDARDS (IN BILLIONS OF EUROS)

	Water	Air	Waste		Total investments		Total investments per capita (euro)
			min.	max.	min.	max..	
Poland	18.1	13.9	2.2	3.3	34.2	35.3	927
Hungary	6.6	2.7	2.1	4.4	11.4	13.7	1306
The Czech Rep.	3.3	6.4	0.6	3.8	10.3	13.5	1427
Slovakia	1.9	1.9	0.3	1.6	4.1	5.4	760
Bulgaria	4.9	5.1	1.8	5.1	11.8	15.1	1668
Romania	10.1	9.1	1.0	2.7	20.2	21.9	943
Baltic states-total	5.6	8.5	0.5	0.9	14.6	15.0	1148
Slovenia	n.a.	0.7	1.2	1.2	1.9	1.9	n.a.
TOTAL	50.5	48.3	9.7	23.0	108.5	121.8	1140.0

Source: EDC Ltd/EPE (1997).

Before studying the figures in tables 4 and 5 the following points should be taken into account:

⁴² Annual capital costs include annual depreciation of total investment costs and the interest rates related to this investment.

⁴³ Certain administrative costs also appear that include the costs of its implementation and monitoring it. See also EDC Ltd/EPE (1997, p. 14).

- ⇒ the estimates refer to the total cost of harmonizing⁴⁴ with the "West-European standards, technologies and approaches" regardless of whether this is required by the European union, local regulations, or other international standards (it is almost impossible to isolate the impact of the European Union alone).
- ⇒ the expenses depend on numerous assumptions (economic growth, selected policy), methodology used, which explains the differences between the results.
- ⇒ the results over-rate the real economic costs to the countries since they do not take into account the economic benefits coming from the given environmental improvements.

It is interesting to compare the figures of the transitional and the cohesion countries.⁴⁵ The total cost of investments in the transition countries is 122 billion euros in comparison to 1 billion euros for the cohesion countries. A more credible indicator is the cost per inhabitant, which is more than 1000 euros in the transition countries, but only 380 euros in the cohesion countries. Among the 10 transition countries the smallest cost per inhabitant was recorded in Slovakia (760 euros), while the highest was in Bulgaria (1670 euros). In 1994 the share of the total necessary investments in the GDP of the transition countries was 2.9%, while in the cohesion countries it was 0.2% (it is assumed that the investments were spread over a period of 20 years).

The total annual cost for waste management, air and water pollution amounts to between 8 and 12 billion euros, which corresponds to between 80 and 120 euros per inhabitant. Although this is only two thirds of the amount in comparison to the EU it is a much higher share in the GDP (5%) than in the EU countries (1%).⁴⁶

Although there are differences between the individual countries, it generally seems that the accession process particularly highlights the institutional

⁴⁴ *The aim is to measure the additional costs caused by the adjustment process. This is very difficult, since there is not enough high-quality information and it is difficult to differentiate between the general trend and the change resulting from joining the European Union, between the autonomous industrial improvement connected with the need for competitiveness and the added improvements connected with the new obligations towards the European Union. The cost estimate of implementing certain measures basically requires knowing three elements: the total quantity of pollution, the amount to be reduced and the unit cost of reducing the pollution.*

⁴⁵ *The economic features of these countries differ from other EU countries, and are similar to the transition countries in some aspects. Cohesion countries are considered to be Ireland, Greece, Spain, and Portugal. See EDC Ltd/EPE (1997, p 94).*

⁴⁶ *EDC Ltd / EPE (1997, p. 98).*

weaknesses in most countries. This is particularly obvious in the lack of adequate communication within the different ministries, administrative and government bodies, etc. The legislative changes will particularly influence the work of the lower levels of government administration and set new requirements both in terms of financing and competence. Therefore, the candidate countries for EU membership have been particularly focusing on the development of institutional, expert and financial possibilities of the local administration responsible for the environmental issues.

Table 5

**TOTAL ANNUAL COST IN TRANSITION COUNTRIES
FOR HARMONISING WITH THE EU ENVIRONMENTAL STANDARDS
(IN MILLIONS OF EUROS)**

	Water	Air	Waste*		Total	
			Min.	Max.	Min.	Max.
Poland	1385	1557	350	1700	3292	4642
Hungary	383	456	150	750	989	1589
The Czech Rep.	324	741	105	560	1170	1625
Slovakia	169	305	45	240	519	714
Bulgaria	336	159	200	950	695	1445
Romania	851	198	100	650	1149	1699
Baltic states-total	295	19	50	200	364	514
Slovenia	n.a.	126	n.a.	n.a.	126	126
TOTAL	3743	3561	1000	5050	8304	12354
Per capita (euro)	36	34	10	49	79	118

Note: * Minimum and maximum operational costs were shown for waste management.
Source: See Table 4.

With the aim of facilitating the harmonization process in the transition countries the EU has developed new financial mechanisms. The Instrument for Structural Policies for Pre-Accession (ISPA) is such an instrument. It is aimed at encouraging other sources of financing outside the EU and intended for financing great investment projects in the environment that the candidate countries require for membership in the EU.⁴⁷

⁴⁷ See in *Enlarging the Environment*.

6 INSTEAD OF THE CONCLUSION

Environmental funds are an important mechanism of financing the environment in the transition countries. The role and the shape of the funds change in the post-transitional period. Their performance depends on the success of economic and political reforms. There are great differences among the funds in transition countries, just like among the environments in which they operate. Inadequate institutional structure and unclear legal status contribute to their inefficiency.

Croatia shares the economic and other problems of the transition countries, hence the environmental problems. The comparison of certain indicators of the state of the environment shows that Croatia is in a better position than the majority of transition countries,⁴⁸ but it should be emphasized that Croatia has suffered huge environmental damages due to war activities. The most important tasks in the field of environmental protection include treatment of communal and industrial waste waters, management of waste and meeting the standards of air quality in industrial centers, as well as restoring the damages incurred by the war (chemical pollution, de-mining, etc.).

In short, the environmental policy can be said to have led to unsatisfactory results in the past. This area is regulated by a multitude of laws and is within the competence of several governmental bodies and administrations.⁴⁹

In the environmental policy the instruments that prevail are the command-control. The economic instruments were introduced gradually and mostly in the area of natural resources management. At the moment, the best regulated area is that of water protection and forestry.⁵⁰

The financing of the environmental protection in Croatia is based on the central budget and the budgets of the local administration units and self-administration, and with the aid of the instruments within the specific areas of environmental protection. Professionals believe that the current system of financing is inadequate both from the economic and from the ecological point of view. The dilemma is whether the reform of the fiscal system should be carried out taking into account the environmental taxes, or funds for environmental protection

⁴⁸ See Hughes (1993), *Report on the State of the Environment in the Republic of Croatia (1998)*

⁴⁹ Kordej-De Villa (1996).

⁵⁰ Kordej-De Villa (1996) i REC (1999).

as in all other transition countries. Croatia, being ten years late in setting up the fund, can learn from the experiences of others and try to avoid all potential dangers related to setting up and running the fund, or it can opt for the methods of financing the environmental protection characteristic of the EU countries. An expert discussion on that issue in Croatia is still to be held.

Accession to the EU is also a strategic priority for the Republic of Croatia. The comparison of the degrees of harmonization of Croatia's legal system and that of the EU in the field of "environmental taxes" shows that there are no significant differences⁵¹. The basic problem is the poor enforcement of the legal regulations in pursuing environmental policy. Therefore, it is necessary to direct the forthcoming activities and initiatives to strengthening the institutional and legal infrastructure and securing the financial means necessary for shaping and carrying out the environmental protection policy that facilitates the development of Croatia in accordance with the sustainability principles.

⁵¹ *The Plan of Integration Activities of the Republic of Croatia (1999).*

LITERATURE

- Archibald, S. and Z. Bochniarz, 1998, *Environmental Outcomes Assessment*, Second World Congress on Environmental Economics, Venice.
- Baumol, W.J. and W.E. Oates, 1988, *The Theory of Environmental Policy*, Cambridge: Cambridge University Press.
- Bovenberg, L. and S. Cnossen, 1995, *Public Economics and the Environment in an Imperfect World*, Boston: Kluwer Academic Publishers.
- Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee, the Committee of the Regions and the Candidate Countries in Central and Eastern Europe on *Accession Strategies for Environment: Meeting the Challenge of Enlargement with the Candidate Countries in Central and Eastern Europe*: COM(97)2000.
- DUPZO, 1998, *Izviješće o stanju okoliša u Republici Hrvatskoj*, Zagreb: DUPZO.
- EAP, 1993, *Environmental Action Programme for Central and Eastern Europe*, document prepared of the Conference "Environment for Europe", Lucerne, April.
- EDC Ltd/EPE, 1997, *Compliance costing for approximation of EU environmental legislation in the CEEC. Enlargement with the Candidate Countries in Central and Eastern Europe.*
- Enlarging the Environment*, No 15, August 1999.
- Eskeland, G.S. and E. Jimenez, 1992, "Policy Instruments for Pollution Control in Developing Countries", *The World Bank Research Observer*, 7(2).
- Francis, P., J. Klarer and N. Petkova, 1999, *Sourcebook on Environmental Funds in Economies in Transition: A Regional Overview and Surveys of Selected Environmental Funds in Central and Eastern Europe and the New Independent States*, Paris: OECD.
- Hughes, G., 1993, "Are the Costs of Cleaning up Eastern Europe Exaggerated? Economic Reform and the Environment", *Oxford Review of Economic Policy*, 7(4), 106-136.
- Jacobsen, M., C. H. Jorgensen and J. K. Pedersen, 1998, *Environmental Funds in Economies in Transition: An Efficient Environmental Financing Vehicle or a Dead End?*, Second World Congress on Environmental Economics, Venice.

Kordej-De Villa, Ž., 1996, "Pretpostavke uključivanja "održivog razvitka" u gospodarsku politiku", *Privredna kretanja i ekonomska politika*, No. 48, 55-75.

Lovei, M., 1994, "The Role of National Environmental Funds in Environmental Financing", *World Bank draft discussion paper*, Washington, D.C.: World Bank.

Lovei, M., 1995, "Financing Pollution Abatement: Theory and Practice", *Environment Department Paper No. 28*. Washington D.C.: World Bank.

OECD, 1991, *Environmental Policy: How to Apply Economic Instruments*, Paris: OECD.

OECD, 1993, *The Environmental Action Plan for Central and Eastern Europe*, Paris: OECD.

OECD, 1994, *Implementation Strategies for Environmental Taxes*, Paris: OECD.

OECD, 1994, *Managing the Environment: The Role of Economic Instruments*, Paris: OECD.

OECD, 1994, *Taxation and the Environment in European Economies in Transition*, OECD/GD (94)42, Paris: OECD.

OECD, 1995, *Environmental Funds in Economies in Transition*, Paris: OECD.

OECD, 1995 *The St. Petersburg Guidelines on Environmental Funds in the Transition to a Market Economy*, OECD/GD (95)108, Paris: OECD.

OECD, 1997, *Reforming Environmental Regulation in OECD Countries*, Paris: OECD.

Vlada Republike Hrvatske, Ured za europske integracije, 1999, *Plan integracijskih aktivnosti Republike Hrvatske*, Zagreb: Vlada Republike Hrvatske, Ured za europske integracije.

Regional Environmental Center, 1994, *National Environmental Protection Funds in Central and Eastern Europe: Case Studies of Bulgaria, the Czech Republic, Hungary, Poland and the Slovak Republic*, Budapest: REC.

Regional Environmental Center, 1999, *Bolji okoliš i bolje gospodarstvo*, Budapest: REC.

Schlegelmilch, K., 1999, *Green Budget Reform in Europe - Countries at the Forefront*, Berlin: Springer.