

THE EMERGING ENVIRONMENTAL MARKET

*A SURVEY IN BULGARIA, CROATIA,
ROMANIA AND SLOVENIA*



THE REGIONAL ENVIRONMENTAL CENTER
for Central and Eastern Europe

The Emerging Environmental Market

*A Survey in Bulgaria, Croatia,
Romania and Slovenia*

Edited by
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Szentendre, Hungary
SEPTEMBER 1997



THE REGIONAL ENVIRONMENTAL CENTER
for Central and Eastern Europe

About the REC

The Regional Environmental Center for Central and Eastern Europe (REC) is an independent, non-profit, regional organization devoted to the improvement of the environment in Central and Eastern Europe. The REC was established in 1990 by the United States, Hungary and the Commission of the European Communities. Today, eight additional countries support the REC — Austria, the Czech Republic, Denmark, Germany, Japan, the Netherlands, Norway and Switzerland.

The REC's mission is to assist in solving the environmental problems in Central and Eastern Europe by encouraging cooperation among nongovernmental organizations, governments, businesses, and other environmental stakeholders, by supporting the free exchange of information and by promoting public participation in environmental decisionmaking.

Beneficiary countries include Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Poland, Romania, Slovakia, Slovenia and Yugoslavia.

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CEE	Central and Eastern Europe
CEFTA	Central European Free-Trade Agreement
CMEA	Council for Mutual Economic Assistance
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management System
EU	European Union
GDP	Gross Domestic Product
GIS	Geographic Information Systems
IMF	International Monetary Fund
MWFEP	Ministry of Waters, Forests and Environmental Protection
OECD	Organization for Economic Cooperation and Development
REC	The Regional Environmental Center for Central and Eastern Europe
USAID	United States Agency for International Development



Executive Summary

At the end of 1996, the Regional Environmental Center for Central and Eastern Europe (REC) conducted a survey on the status of the environmental business sector in Bulgaria, Croatia, Romania and Slovenia. The main objectives of the survey were to describe the status of the environmental business sector and to provide an overview of the environmental market. Secondary objectives of the project were to identify the information and training needs and the barriers to development of the environmental business sector.

The contents of the report are largely based on formal interviews with senior level representatives of environmental businesses across the widest possible geographical range and company spectrum (size, ownership, income, area of expertise). Up to 150 environmental businesses were interviewed in each country. The research was carried out between October 1996 and February 1997.

The development of the environmental business sector is principally influenced by government commitment to environmental protection, comprehensive environmental policy and legislation, efficient economic mechanisms, incentives to environmental investments by both the public and the private sector, regulatory enforcement capability and the general business environment.

Government commitment to environmental protection issues is quite different in each country. The highest commitment was seen in Slovenia whereas the lowest commitment can be found in Croatia. However, Croatia in some respects is a different case compared with other countries, due to the negative influence the recent war has had on the political and economic development. Governments in Bulgaria and Romania demonstrated a serious commitment, but concrete actions are hindered by the widespread economic problems that plague the whole business environment.

Each of the surveyed countries has implemented its own general or framework act together with various comprehensive legislation, e.g. regulations to air, water, and waste management. However, the efficiency and effectiveness of such regulations varies in all the countries. Bulgaria introduced its Environmental Protection Law in 1991, followed by Slovenia's Environmental Protection Act in 1993. Croatia and Romania implemented their Environmental Protection Acts in 1994 and 1995 respectively. Framework environmental acts and their amendments include principles such as polluter pays, the prevention and precautionary, free access to environmental information and public participation.

The level of enforcement is still inconsistent in all the countries, and the responsible authorities (e.g. the environmental inspectorates) are often understaffed or do not have appropriate equipment and training to carry out their duties as required. Enforcement policies rely mainly on monetary penalties and fines, both of which are too low to change business attitudes toward environmental protection and foster environmental investments.

Total environmental spending from both government and private sectors in the surveyed countries exceeded USD 600 million in 1995. In the future, environmental expenditure is expected to grow at a rate of 6 to 10 percent annually. Further, a major change is expected in the financing of environmental protection. Currently the main sources of the funds for environmental projects are derived from the state budgets

(including state environmental protection funds, which are in operation in Bulgaria and Slovenia), municipal budgets and investors' own funds. Over the next few years the share from the private sector is expected to increase, whereas the contribution from the state budget will decrease significantly.

Environmental spending is mainly allocated to water and wastewater projects and air pollution control activities. Waste management-related activities are the third largest priority area of the surveyed countries. The major bulk of state financing tends to be allocated to the construction of wastewater treatment and sewage facilities, while the remainder goes to air protection and waste management issues. Investments in the latter two are covered mainly by industrial plants and municipalities.

The size of the environmental market and the status of the environmental business sector also is quite different in each country. The market is relatively young in all countries, and most of the companies were established after 1990. It is estimated that the environmental business sector comprises more than 700 providers of environmental services and technologies, of which approximately 450 were included in the survey. The highest percentage of privatized companies was in Croatia (81 percent), followed by Romania (68 percent), Slovenia (57 percent) and Bulgaria (54 percent).

The highest percentage of joint-ventures with foreign partners was found in Croatia (14 percent), whereas the lowest percentage was found in Bulgaria (7 percent). Partners' mainly came from Austria, Germany and the United States.

Total annual environmental revenues of surveyed businesses exceeded USD 240 million in 1995. Croatian and Slovenian environmental businesses indicated the highest annual turnover, which amounted to USD 99 million and 87 million, respectively. In all the countries, technical services generated the highest revenues (47 percent), followed by the sale of environmental technologies (29 percent) and testing and monitoring activities (13 percent). Croatian firms earned the highest share of income from technical services (51 percent), while Bulgarian firms reported the highest share of income from environmental technologies (33 percent).

Across the four countries, companies said they generate 36 percent of their annual turnover from water and wastewater activities, 29 percent from waste-related activities and 9 percent each from air pollution control and energy-related activities. Other non-media specific activities accounted for 17 percent, which includes industrial safety and noise, environmental impact assessment, environmental management, soil and land.

In the surveyed countries, there are no effective formal channels for information on project opportunities. Personal and professional contacts, daily press, the Ministry for Environment, participation in environmental fairs, and environmental publications are among the primary sources for business opportunities. Professional associations, such as chambers of commerce, academies of sciences, etc., are not seen as major information sources or as effective lobbying groups for the environmental business sector.

Environmental professionals showed high interest in the following six environmental information topics: domestic environmental regulations, information on where to find domestic partners, domestic environmental problems, new environmental technologies, sources of project financing and domestic tenders for projects. In general, their interest in

information and project opportunities beyond the borders, e.g. international tenders for projects, EU environmental regulations, information on where to find international partners, was not high. This also indicates the early stages of development of the environmental business sector in these countries.

The majority of environmental professionals showed high interest in regular newsletters containing updated information on project opportunities, technologies and financing. More than half of the respondents were willing to pay for such a product. Other delivery options in high demand were conferences arranged to address specific environmental problems and project opportunities and an environmental business directory that included relevant market information. Almost half of the respondents indicated they would pay for such services.

As the environmental field becomes more competitive, professional training becomes an important issue. Professional training was, in particular, requested on environmental regulations and policy, environmental impact assessment, financing environmental investments, environmental economics, and environmental management.

In most of the countries more than half of respondents indicated the government was an important source for business assistance. The responses citing the importance of government assistance ranged from 65 percent in Bulgaria to 26 percent in Romania. Other important sources of assistance mentioned were business or industrial associations and financial institutions. Scientific or academic institutions, international organizations and professional training institutions received only minor attention. Also it was found that, in general, the environmental business sector in Romania received low assistance from other institutions than in other surveyed countries.

Environmental professionals indicated access to credit and finance as the biggest barrier to business development. This was especially true in Romania and Bulgaria, where the financial markets are particularly weak and characterized by high interest rates and an unstable banking sector. Although the environmental market is growing, the environmental business sector is still perceived by all the countries as very risky for potential investors. In general, banks require for the funding of projects guarantees such as cash flow and property, and they look for short-term profits, which young businesses normally are not able to provide. The second major barrier facing environmental professionals is high taxes that are applied, in general, to the business environment. Also, legal regulation and registration requirements, general access to information, market demand and environmental legislation are considered to be barriers to development. Foreign competition, however, was only considered by 22 percent as a barrier.

In conclusion, the environmental business sector in the surveyed countries, with the exception of Slovenia, is in its early stages of development and is not able to meet fully the potential demand of environmental services and technologies.

Comparison with the Visegrad Survey

In 1995, the Regional Environmental Center published the first volume of its *Emerging Environmental Market Survey*. This report focused on the Visegrad countries — the Czech Republic, Hungary, Poland and Slovakia. The following is a brief summary of the survey of the Visegrad countries:

The market for environmental businesses has been developing rapidly, spurred on by favorable political, institutional and economic conditions. Environmental expenditure from both government and private sectors totaled more than USD 3.1 billion in 1995, with about 80 percent spent in the Polish and Czech markets.

With total environmental expenditures of USD 1.3 billion, Poland had the largest environmental market in 1995, followed closely by the Czech Republic, which had expenditures of USD 1.1 billion. Hungary came in third with environmental expenditures of more than USD 380 million, while Slovakia, with expenditures of about USD 220 million, had the smallest market of the Visegrad countries. These figures are estimated to grow between 10 and 20 percent annually as the economies grow and as the governments offer financial incentives and tougher environmental regulations to comply with EU standards.

In all four countries the environmental market is relatively young — most of the companies were established after 1990. However, the size of the environmental market and the status of the environmental business sector varies. Research indicated a correlation between the pace of industrial privatization and the total amount of environmental expenditures. The highest percentage of privatized companies was found in the Czech Republic (86 percent), followed by Poland (85 percent) and Hungary (78 percent). Again, Slovakia lagged behind the others.

The survey of nearly 600 environmental businesses across the four countries showed that water-related projects generated 41 percent of their income, followed by solid waste and soil contamination projects (19 percent) and air pollution pro-

jects (19 percent). The remaining projects included nature conservation, industrial health and safety, noise control and energy conservation.

The sale of environmental products generated the most revenues (44 percent), followed closely by technical services (40 percent). Polish firms earned the highest portion of their income (53 percent) from environmental technologies, while Hungarian firms earned more from technical services than from any other area.

Government regulations were seen as the major reason for the growth in the environmental business sector. Therefore, the top information and training concern among surveyed companies related to how EU harmonization would affect environmental regulations. The topic was followed closely by requests for information and training on new environmental technologies. Another important information topic was how to finance environmental projects.

With regard to information about potential projects, transparent bidding processes were still in the early stages. Therefore, companies relied mostly on interpersonal relationships to learn more about new project opportunities. The survey repeatedly found that the government was not considered a reliable source for business opportunities.

Local firms are gaining more exposure to Western firms, and more than half of the local companies have worked on a joint project and considered it a successful experience. Suggestions to improving East-West ventures included better communication, more equitable terms for local firms, a better understanding of local business practices by Western firms and more clarity in contractual relationships and government regulation.

Since 1995, the environmental business sector has expanded and has significantly improved its capacity to successfully implement environmental projects. As a result, foreign donors have begun to consider channeling more and more money through local environmental companies.

Background

The development of the environmental business sector depends on many factors, including the general political and economic conditions; the environmental priorities set by governments through national environmental policies; environmental expenditures undertaken by the public and private sectors; environmental legislation and regulatory enforcement systems, including environmental institutional capacity; and the general business environment. To operate successfully in a competitive market, the environmental business sector needs a thorough understanding of all these factors.

This report looks at some of these factors and presents the status of the emerging environmental market. In addition, current information and training needs of the environmental business sector are identified to provide a fundamental knowledge of how to support these businesses effectively in their development.

The Regional Environmental Center for Central and Eastern Europe (REC) started its business program in 1995 with its first survey on the status of the environmental business sector, including information gaps and training needs. This survey covered the Czech Republic, Hungary, Poland and Slovakia — together known as the “Visegrad countries.” This volume of the “Emerging Environmental Market” survey covers another four countries: Bulgaria, Croatia, Romania and Slovenia.

PROJECT OBJECTIVES

The primary objectives of this research project are to describe the status of the environmental business sector (including profiles of businesses, etc.) and to provide an overview of the environmental market (political and economic situations, environmental priorities and expenditures, environmental legislation and enforcement, etc.) in Bulgaria, Croatia, Romania and Slovenia. For the purpose of this study, the key terms are defined as follows:

- *Environmental businesses*: organizations that provide products or services to measure, prevent, reduce or render harmless the pollution of the environment, including activities in relation to the introduction of cleaner production technologies.
- *Environmental technology or product*: any piece of equipment, process or related service that is available to prevent, reduce, minimize, measure or render harmless the environmental impact of industrial or municipal activities.
- *Environmental service*: any consulting service that is available to prevent, reduce and minimize the environmental impact of industrial, municipal or other activities.

The secondary objectives of the survey are to identify information and training needs and barriers to the development of environmental businesses.

SCOPE AND METHODOLOGY

The Regional Environmental Center developed the methodology and the survey, including the standard questionnaire to be used in interviews. Both a local environmental expert and a market research firm were commissioned in each of the surveyed countries to identify senior managers in leading environmental businesses and to conduct the survey, based on the terms of reference and the format provided by the Regional Environmental Center.

The REC provided a standard questionnaire (included in the Appendix of this report), which served as a platform for the interviews. The questionnaire was translated into each local language and was reviewed by a native speaker on the REC staff before being used in interviews.

To obtain a representative sample, up to 150 environmental businesses were interviewed in each country, and the survey was conducted across the widest possible geographical range and company spectrum based on size, ownership, income and area of expertise. Information for the country profiles was gathered from various sources, including researchers' experience, informal telephone interviews, news reports, governmental environmental policy plans, professional literature and the REC's in-house information resources.

Researchers in each country then submitted a written analysis presenting the findings of the survey.

STRUCTURE OF THE REPORT

This report provides qualitative information about the environmental market, the status of the environmental business sector, the information and training demand and the barriers to development for each surveyed country. The report consists of a regional overview and four country specific chapters. Each country chapter is structured in the following way:

- Summary of Findings.
- General Introduction — a brief synopsis of the political and economic situation.
- Overview of the Environmental Market — a general summary of major environmental problems, information on national environmental expenditures, estimates of the size of the environmental market, activities of state environmental funds, priorities of the state environmental plans.
- Profile of Environmental Businesses — an overview of the environmental business sector, including ownership structure, size, age, revenues by environmental media and activity, foreign cooperation, office equipment and language proficiency.
- Information on Environmental Business Opportunities — an explanation of sources of information for business opportunities and an overview of major environmental and business publications.
- Information and Training Needs — an overview of the demand for information and training of environmental businesses.
- Assistance and Barriers to Business Development — discussion of the major sources of assistance and the main barriers to business development.

Chapter 1: Regional Overview

1.1 Overview of the Environmental Market

POLITICAL AND ECONOMIC SITUATION

Political stability in the region has improved significantly in recent years, largely due to the newly elected democratic governments in Bulgaria, Romania and Slovenia. However, Croatia still experiences a lack of democracy and is currently excluded from the European Union's multinational PHARE Programme. The first three countries have already been accepted as associate members of the EU, even though they still have a long way to go before being accepted as full members. The only exception might be Slovenia. Together with the Czech Republic, Hungary, Poland and Estonia, Slovenia has a good chance of being accepted in the first wave of EU enlargement scheduled for the first years of the next millennium. Slovenia's inclusion in the group is a result of the country's strong efforts to harmonize domestic structures and legislation with EU standards.

Most of the countries are still struggling with economic turmoil caused by the loss of markets after the break-up of the Council for Mutual Economic Assistance (CMEA). After the split, member countries had to reorganize economic agreements, identify new markets and restructure their major industries.

Industrial production immediately began falling and overall was hit the hardest. The decline in production in Croatia and Slovenia stopped only recently, and output is still below the 1990 level. The economic situation in Romania and Bulgaria is much more severe, mainly due to the weak financial institutions and the collapse of the banking system, especially in Bulgaria. These countries are slowly recovering, but they are far behind original expectations. However, aside from Croatia, where mass privatization is about to begin, the sell-off of government-owned industry has proceeded at a rapid pace and should be completed in the next few years.

During the first phase of economic reforms, environmental concerns received a low priority. Now, as the countries move forward in their transition to market economies, private investment is expected to increase significantly and bring with it an increase in environmental investments.

ENVIRONMENTAL EXPENDITURES

Because of the poor economic conditions and other political difficulties (e.g. the Yugoslav war, unstable governments in Bulgaria and Romania, high unemployment and other social problems), the share of the gross domestic product devoted to environmental expenditures has stayed below 1 percent in all four surveyed countries over the past several years. In 1995, Bulgaria had the highest share of GDP spent on the environment (0.9 percent), followed by Croatia and Slovenia (0.8 percent) and Romania (0.6 percent). Although these countries undertook serious efforts to protect the environment, their expenditures are low compared with OECD countries, which usually spend 1 to 2 percent of their GDP annually on environmental protection activities.

It is important to note, however, that the calculation of environmental expenditure as a percentage of GDP is compli-

TABLE 1.1: TOTAL ENVIRONMENTAL EXPENDITURES IN 1995

<i>Country</i>	<i>Expenditures (mln USD)</i>	<i>Share of GDP</i>
Bulgaria	118	0.9%
Croatia	152	0.8%
Romania	211	0.6%
Slovenia	150	0.8%
Total	631	-

Source: Ministries of Environment for Bulgaria, Romania and Slovenia, 1996; State Directorate for Environmental Protection, Croatia, 1996

cated, and the use of such an indicator to assess a country's "environmental commitment" must be qualified. Governments use different definitions for environmental expenditures. Some types of expenditures included in such calculations may have only marginal environmental benefits, while others might be considered more environment-unfriendly than beneficial. Either way, the figures presented in Table 1.1 reflect the most optimistic current status of environmental expenditures.

Data for 1996 was not yet available. However, as shown in Table 1.1, total environmental spending from both the government and private sectors in the surveyed countries exceeded USD 630 million in 1995. This amount is expected to increase to USD 1 billion by the year 2000.

There is already a huge demand for investments in many sectors within the countries, not just the environmental sector. One of the most pressing problems for those active in environmental protection in Central and Eastern Europe is securing the necessary financing for environmental projects. In general, there are six sources of environmental funding:

- state, regional and municipal budgets;
- extra-budgetary funds (state environmental protection funds, "ecofunds" or other earmarked funds);
- environmental investments of commercial enterprises, both private and state-owned;
- commercial credit, both domestic and foreign;
- foreign environmental investments;
- assistance programs and donations from abroad (bilateral cooperation agreements, PHARE Programme, etc.).

At the moment, almost 90 percent of the environmental funding comes from the first three sources. However, governments of the surveyed countries plan to decrease their spending in the coming years. As state funding declines, environmental expenditures from local governments and environmental funds will become more important. Furthermore, the role of polluting industries is expected to increase significantly as the "polluter pays principle" becomes fully implemented in the countries.

Most of the current state financing is used for the construction of wastewater treatment and sewage facilities, as well as for the construction of public water supply networks. Funding

TABLE 1.2: BREAKDOWN OF 1996 EXPENDITURES OF STATE ENVIRONMENTAL FUNDS

	Bulgaria ¹	Slovenia
<i>1996 Expenditures</i>	USD 9.3 million	USD 10.3 million
<i>Number of Projects Funded</i>	102	1,257 ²
<i>Expenditures by Sector</i>	Air protection (13%), Water protection (45%) Waste management (8%) Monitoring and information systems (17%) Other (17%)	Air protection (57%) Water protection (29%) Waste management (14%)
<p>1 Bulgaria currently operates three types of environmental funds: the National Environmental Protection Fund, municipal environmental funds and the EcoFund. The EcoFund did not finance any projects in 1996.</p> <p>2 Slovenia is also providing soft loans to private persons, for example to install cleaner heating systems in households. Additionally, the system of co-funding is very common which explains the high number of funded projects.</p> <p>Source: National Environmental Protection Fund of Bulgaria, 1997; Environmental Development Fund of Slovenia, 1997.</p>		

for air protection and waste management projects is mainly provided by international assistance programs (particularly in the energy sector), private enterprises and municipalities.

In conclusion, the low public and political support for environmental protection and the weak financial footing of governments, municipalities and industries are probably the most significant obstacles to increasing environmental spending. Unstable macroeconomic conditions, an uncertain regulatory environment and weak economic and regulatory incentives further impede environmental protection activities.

STATE ENVIRONMENTAL FUNDS

Most countries in Central and Eastern Europe have established extra-budgetary funds to finance environmental protection activities. These funds are quasi-independent or fully independent, and they operate under the auspices of the Ministry of Environment in almost all cases. The funds generally receive revenues from pollution charges and fines, product charges, various environmental taxes and other fees. The money from these funds is then used to support environmental projects. Investment priorities mainly follow national environmental policies as well as priorities set by the Ministry of Environment. Tenders for new projects are announced through the common media, through information leaflets available from the Ministry of Environment or directly from the environmental protection fund offices. One major principle of the funds is that the application procedure for tenders must be open and transparent. Financial support provided by these funds is disbursed in various forms, most commonly as grants and "soft" loans, which accrue interest at a discounted rate.

Although the funds are common in the region, only two of the four surveyed countries operate environmental protection funds. Bulgarian legislators established the National Environmental Protection Fund with the Environmental Protection Act of 1991. Two years later, Slovenia's government created the Environmental Development Fund (called EcoFund) after passing its own Environmental Protection Act. Croatia and Romania do not currently operate such funds. The Romanian government has been discussing the establishment of an environmental fund since 1995, but a decision has still not been made.

Table 1.2 shows the breakdown of spending by the Bulgarian and Slovenian environmental funds in 1996. As shown in the table, the largest portion of the fund expenditures in Bulgaria was allocated to water-related projects, followed by investments in the national monitoring and information system and in air protection-related activities. In Slovenia, the bulk of the fund's expenditure was allocated to air pollu-

tion control projects, followed by water-related projects and waste management programs.

In 1996, Bulgaria established an additional fund, the Ecofund, under a USD 11 million debt-for-nature agreement with the government of Switzerland. The first projects were to be financed in 1997.

LEGISLATION AND ENFORCEMENT

The growth of the environmental market is regularly stimulated by new environmental laws, increased standards and regulations and more vigilant enforcement. These actions influence both the private and public sectors, especially industries and local authorities who are major investors in projects related to air, waste, water and wastewater.

Each of the surveyed countries has put in place its own general environmental act together with various pieces of specific environmental legislation (e.g. regulations related to air, water and waste management). Bulgaria introduced its Environmental Protection Act in 1991, followed by Slovenia's Environmental Protection Act in 1993. Croatia and Romania implemented their Environmental Protection Acts in 1994 and 1995 respectively. These environmental acts and their amendments force the countries to adopt basic principles such as the requirement for polluters to pay, the focus on prevention and precautionary measure, free access to environmental information and public participation in environmental decisionmaking. Although the regulatory systems are still undergoing changes (mainly related to enacting specific pieces of waste legislation), the level of enforcement is inconsistent in all the countries. The responsible authorities (e.g. the environmental inspectorates) are often understaffed or do not have the necessary equipment and training to carry out their duties as required.

Three of the surveyed countries — Bulgaria, Romania and Slovenia — have signed association agreements with the European Union to seek full membership in the near future. As part of the integration process these countries must harmonize their environmental laws and policies with EU legislation. Formal approximation will involve the adoption of more than 200 environmental laws. In most cases, stricter environmental legislation and enforcement can be expected in these countries as well as new standards which will benefit the environmental business sector.

According to a study of compliance with EU environmental legislation, conducted by the REC in 1996, the associate countries will need to make major legislative changes in several key areas. Necessary improvements in the following problem areas are expected to have a significant impact on the growth of the environmental market in the coming years:

TABLE 1.3: COMPLIANCE WITH EU ENVIRONMENTAL LEGISLATION

	<i>General Environmental Policy</i>	<i>Air</i>	<i>Chemicals, Industrial Risks and Biotechnology</i>	<i>Nature Conservation</i>	<i>Noise</i>	<i>Waste</i>	<i>Water</i>
Bulgaria	55%	43%	27%	67%	50%	24%	50%
Romania	38%	37%	32%	33%	17%	21%	61%
Slovenia	55%	50%	23%	67%	50%	19%	44%

Note: Croatia is not an EU associate country and therefore was not included in the study

Source: Approximation of European Union Environmental Legislation; Regional Environmental Center, 1996

- The rate of compliance with waste management regulations, which averages 21 percent in the three associate countries, is generally lower than compliance with all other environmental regulations and must be improved.
- Regulations regarding chemical, industrial risks and biotechnology are also underdeveloped, with an average compliance level of 27 percent.
- Regulations regarding noise emissions reach on average 39 percent compliance.
- Air quality regulations showed an average compliance level of 43 percent. It should be noted that emission regulations for motor vehicles are generally well-developed in Bulgaria and Slovenia. However, major changes are still needed regarding regulations related to air pollution from stationary sources.

The main policy instrument currently applied to industries is the permit system, including pollution charges and fines for non-compliance. The charges and fines collected are most often earmarked for environmental purposes and administered through the national environmental protection funds when applicable. In general, companies pay pollution charges for regulated substances they emit into the air and/or water, for natural resources they extract and for waste disposal. Fines are collected when a polluter exceeds emissions standards set forth in their operating permits. One problem, though, is that the pollution charges and fines are often too low and do not fulfill the function of correcting the polluting behavior. Charges and fines are generally so low that it is cheaper for polluting industries to continue paying them than to invest in making investments that would reduce or eliminate emissions. Enforcement of environmental regulations remains the most critical issue in environmental protection activities within these countries.

In addition, a number of economic and regulatory incentives which should encourage environmental expenditures are often not as effective as expected. For example, energy is still subsidized in most of the countries, which encourages inefficient and wasteful use of natural resources. In particular, this hinders environmental investments in energy efficient technologies that would contribute to less consumption and pollution emissions under “normal” market conditions.

ENVIRONMENTAL ADMINISTRATION

During the past few years, the system of environmental administration has undergone major changes in all the surveyed countries. Not only has the administrative structure changed and new responsibilities added to the Ministry of Environment, but also the number of staff has increased significantly. Each of the surveyed countries — except Croatia, which operates a State Directorate for Environmental Protection — has a separate Ministry of Environment. The countries have also set up admin-

istrative bodies for various areas such as health care, agriculture, forestry, water management, physical planning and transport. These offices are not always grouped together as part of the Ministry of Environment.

Also, local authorities are receiving an increasing amount of responsibility, particularly related to waste management, water supply and water treatment. Except for Slovenia, where regional responsibilities are covered by local authorities or the Ministry of Environment, the countries have established three levels of environmental administration:

- national level (e.g. Ministry of Environment, State Directorate for Environmental Protection or other ministries with environmental related duties);
- regional level (e.g. environmental department of regional authorities, inspection bodies, water management authorities, etc.); and
- municipal level, overseen by local authorities.

Environmental ministries are usually in charge of determining the national environmental policy and of implementing specific environmental programs. For example, in Slovenia the Ministry of Environment’s responsibilities include a wide range of tasks: environmental and nature protection; water and waste management; geological, seismological, meteorological and other geophysical monitoring; land development; physical planning; nuclear safety; and survey and mapping responsibilities.

The regional environmental authorities are in most cases in charge of regional policy development, issuing environmental permits, imposing penalties and developing local standards. The environmental inspectorate conducts site visits to assess compliance with the law and retains the right to stop any production process which violates environmental regulations.

Physical planning and construction permits are generally issued by the municipalities, which are increasingly responsible for waste management, wastewater treatment (including operating the system) and calculating and collecting charges.

Free access to environmental information is guaranteed by law, but in practice ensuring this openness is extremely difficult. Governments collect information, such as records of compliance, environmental monitoring and discharge monitoring. However, most of the data are not published or announced publicly. The main information sources for obtaining environmental information are generally the State of Environment reports and bulletins published by the ministries of environment. The quality of information varies significantly from country to country. In addition, national statistical offices process and disseminate environmental information.

Environmental Priorities

Environmental priorities are mainly set out in national environmental policy plans. Another indicator is the environmental spending undertaken in the main environmental areas. The national statistical offices of some of the countries collect

TABLE 1.4: ENVIRONMENTAL EXPENDITURES BY MEDIA, 1995

	Total Expenditure (mln USD)	Water and			
		Air	Wastewater	Waste	Other
Bulgaria	118	28%	34%	16%	22%
Croatia	152 ¹	n/a	n/a	n/a	n/a
Romania	211	41%	32%	20%	7%
Slovenia ²	147	71%	9%	18%	2%

1) Estimated; breakdown for Croatia was unavailable because the national statistical office does not track environmental spending

2) Breakdown of expenditures by media was only available for 1994

Source: 1996 Statistical Yearbooks of the surveyed countries and Ministry of Environment

data of environmental spending. However, these data are often misleading and should be considered with caution.

According to the statistical yearbooks of the surveyed countries, Bulgaria devoted the largest portion of its environmental expenditure (34 percent) to water and wastewater projects while Romania and Slovenia devoted their largest shares (41 percent and 71 percent respectively) to air pollution programs. The complete breakdown is shown in Table 1.4.

These figures roughly correspond with the environmental investment priorities set out in the National Environmental Action Plans. In Bulgaria, the highest priorities were identified as air pollution control and drinking water supply, whereas in Croatia industrial waste management and drinking water supply were given the highest investment priorities. In Romania, drinking water supply and air pollution control received the highest attention, and Slovenia gave priority to air pollution control and domestic waste management.

1.2 The Status of Environmental Businesses – Results of the Survey

Since 1990, the market for environmental services and technologies has grown steadily in all the surveyed countries, leading to the dynamic development of local environmental businesses. It is estimated that 700 small and medium-sized enterprises are currently active in the environmental market, and the number is still growing. It should be noted that most of them suffer significant setbacks from various local conditions (i.e. troublesome economic or political conditions, lack of information on project opportunities and financing aspects, etc.). This section analyzes the results of the survey of more than 450 environmental businesses interviewed at the end of 1996. The goal is to compare the size and activities of environmental businesses, assess their information and training needs and determine the best channels for disseminating needed information. In addition, a short section is dedicated to the forms of assistance needed and the barriers which hinder business development.

PROFILE OF ENVIRONMENTAL BUSINESSES

Age, Ownership Structure and Size

Although the marketplace is different in each country, results showed several similarities between the group of countries in this survey and those considered in the 1995 Visegrad survey. In all the countries, the market is extremely young, with the vast majority of companies established after 1990. Also, the companies are generally small. This is especially true in Slovenia and Croatia, where more than half of the companies have fewer than 6 employees. In Bulgaria and Romania, the proportion of small firms is lower (38 percent and 42 percent respectively), showing a tendency in these countries toward larger, state owned companies. Again, throughout both surveys the privatization process was found to have moved very quickly in the environmental business sector. Nearly two-thirds of the compa-

TABLE 1.5: PROFILE OF ENVIRONMENTAL COMPANIES

	Bulgaria	Croatia	Romania	Slovenia
Number of companies interviewed	68	141	122	121
Size (% with less than six full-time employees)	38%	53%	42%	57%
Ownership (% that are fully privately owned)	54%	81%	68%	57%
Age of companies (% founded after 1990)	60%	56%	69%	52%

TABLE 1.6: BREAKDOWN OF FIRMS BASED ON TOTAL TURNOVER FROM ENVIRONMENTAL ACTIVITIES IN 1995

Total Turnover	Bulgaria (42) ¹	Croatia (118) ¹	Romania (82) ¹	Slovenia (95) ¹
Less than 25,000	22%	18%	37%	21%
25,000-100,000	37%	29%	22%	13%
101,000-250,000	17%	12%	12%	20%
251,000-500,000	5%	10%	15%	10%
501,000-1,000,000	6%	10%	4%	13%
More than 1,000,000	13%	21%	10%	23%
Combined annual turnover of surveyed companies	23 mln	99 mln	38 mln	87 mln

1) Number in brackets indicates the number of businesses that provided income data

2) Calculation of combined annual turnover: The average value of total revenues was calculated by multiplying the number of companies within a given range by the mean USD amount in the range. For the first range, USD 20,000 was used in the calculation.

TABLE 1.7: PERCENTAGE OF TOTAL REVENUES GENERATED FROM VARIOUS ENVIRONMENTAL ACTIVITIES IN 1995

	Bulgaria (42)	Croatia (118)	Romania (82)	Slovenia (95)
<i>Technical services</i>	46%	51%	50%	40%
<i>Environmental technologies</i>	33%	30%	26%	26%
<i>Testing/monitoring</i>	11%	14%	10%	15%
<i>Other</i>	10%	5%	14%	19%

Note: Number in brackets indicates the number of businesses that provided income data

TABLE 1.8: PERCENTAGE OF TOTAL REVENUES GENERATED FROM DIFFERENT MEDIA IN 1995

	Bulgaria (42)	Croatia (118)	Romania (82)	Slovenia (95)
<i>Water and wastewater</i>	39%	29%	46%	30%
<i>Waste</i>	25%	40%	19%	30%
<i>Air</i>	8%	7%	13%	9%
<i>Energy</i>	8%	7%	12%	7%
<i>Other</i>	20%	17%	10%	24%

Note: Number in brackets indicates the number of businesses that provided income data

nies interviewed for the latest survey are privately owned. Still, this figure was considerably lower than in the Visegrad countries, where 85 percent of companies were privately owned.

Company Gross Revenues

In order to show spending on environmental activities, the survey asked companies to indicate their annual income from environmental activities. Not all of the businesses were willing to provide income information and some had difficulties separating out their environmental activities income from their total annual revenues. Especially in Bulgaria and Romania, interviewed businesses were reluctant to report their income situation because of tax declaration concerns, business secrets and cultural attitudes.

The combined annual turnover of the 337 companies that responded was approximately USD 247 million. Croatian and Slovenian environmental businesses indicated the largest annual turnover from environmental activities (USD 99 million and 87 million respectively). This reflects not only the large amount of environmental spending in these countries but also the large number of businesses that were willing to provide financial data. Table 1.6 shows the breakdown for each country based on total turnover in 1995.

Companies were also asked to provide information about their income to determine their business activity in type of services offered (e.g. technical services, environmental technology, testing/monitoring) and in media areas (air, water and wastewater, waste, energy, etc.). Again, many of the interviewed companies were not willing to provide information about their annual turnover.

Across the four countries, 28 percent of the annual income came from the sale of environmental technologies and 47 percent came from technical services, including engineering and planning and general consulting activities. Analytical testing and monitoring accounted for 13 percent of turnover. Table 1.7 presents the breakdown of revenues based on business activity for the individual countries.

When total revenue was broken down by media, 36 percent came from water and wastewater projects. Solid waste-related activities generated 29 percent of annual income, followed by

air and energy related activities, which generated 10 percent. Table 1.8 shows the breakdown for the individual countries. The percentages are continually changing, though, due to the dynamics of the market and the changing environmental priorities set by the governments. Therefore, these figures reflect just a snapshot of the market in the surveyed countries.

Foreign Cooperation

Both local and foreign companies can benefit from business cooperation and the creation of joint-ventures. Foreign businesses generally have better management and marketing expertise, access to financial resources and modern technologies, while local companies have a better knowledge of local market conditions and rules. Furthermore, successfully operating joint-ven-

TABLE 1.9: JOINT-VENTURES AND MAJOR PARTNERS

	Bulgaria	Croatia	Romania	Slovenia
<i>% of joint-ventures</i>	7	14	11	13
<i>Top joint-venture partner countries</i>	Austria Germany USA	Germany USA Austria	France Germany USA	Austria Germany Croatia

TABLE 1.10: MOST COMMONLY SPOKEN FOREIGN LANGUAGES

Bulgaria	Croatia	Romania	Slovenia
Russian (80)	English (82)	English (80)	English (88)
English (73)	German (62)	French (68)	Croatian (84)
German (30)	Italian (18)	German (34)	German (71)

Note: Numbers in brackets indicate the percentage of respondents who said they could speak the language

TABLE 1.11: SHARE OF INCOME FROM FOREIGN SOURCES

<i>Percentage of Income from Foreign Sources (in the past two years)</i>	Bulgaria	Croatia	Romania	Slovenia	Average
None	66%	50%	72%	54%	60%
Less than 10%	8%	18%	17%	23%	16%
10-50%	18%	21%	10%	20%	18%
More than 50%	8%	11%	1%	3%	6%

tures facilitate the development of the environmental market and strengthen a country's ability to solve its environmental problems.

The survey showed that so far there is little cooperation between local and foreign companies — only 9 percent of the surveyed companies have foreign partners. Croatia and Slovenia have the highest percentage of joint-ventures with 14 and 13 percent respectively. In Romania, the figure is about 10 percent, while Bulgaria trails with just 7 percent — a figure that likely reflects the extremely shaky economic conditions foreign companies see in the country.

Most of the foreign partners in Croatia and Slovenia come from Austria, Germany and the United States. In Romania, environmental businesses mainly indicated partnerships with companies from the United States, Germany and France, while the main foreign players in Bulgaria come from Austria and Germany. Table 1.9 lists the percentage of joint-ventures and the leading partner countries for each country.

Language barriers can often hinder the successful operation of joint-ventures. However, language problems do not appear to be a major barrier for business development in the surveyed countries. Eighty percent of respondents said they spoke English, and 50 percent spoke German. The three most common foreign languages for each country are listed in Table 1.10.

Income from Foreign Sources

Due to the relatively small size of the environmental business sector and the fact that the market has just recently begun

to develop, only a few companies were actively exporting environmental technologies and services. Almost 60 percent of the respondents received no income from foreign sources, while another 16 percent indicated a minor income of less than 10 percent of total revenue. Just over 18 percent earned between 10 and 50 percent of their income from foreign sources, and less than 6 percent of the companies earned more than half their income from exporting products and services.

The companies that indicated a higher income from foreign sources generally were large firms or firms with foreign partners. This seems to indicate that joint-ventures increase a local company's business opportunities in other countries. As shown in Table 1.11, Croatia and Slovenia are the most active on the foreign markets, while Bulgaria and Romania are still held back by their unfavorable economic conditions.

INFORMATION CHANNELS FOR BUSINESS OPPORTUNITIES

Major Sources of Information for Business Opportunities

Table 1.12 shows the percentage of respondents in each country who considered the various information channels to be major sources of information regarding opportunities for environmental businesses in each country. In general, the survey respondents were not aware of any central body or orga-

TABLE 1.12: INFORMATION CHANNELS FOR BUSINESS OPPORTUNITIES

<i>Source of Information</i>	Bulgaria	Croatia	Romania	Slovenia	Average
Personal contacts	94%	97%	93%	96%	95%
Daily press	65%	56%	63%	61%	61%
Environmental Ministry	60%	56%	55%	70%	60%
Trade shows and fairs	59%	68%	52%	61%	60%
Environmental publications	66%	63%	57%	49%	59%
Direct mail	46%	41%	69%	57%	53%
Conference attendance	65%	46%	42%	57%	52%
Local authorities	35%	55%	54%	54%	50%
Business publications	40%	43%	38%	36%	40%
Chamber of commerce	15%	42%	35%	43%	34%
Professional association	22%	40%	43%	36%	35%
International organization	34%	23%	25%	31%	28%
Broadcast fax service	16%	18%	51%	26%	28%
University/academy of science	30%	26%	33%	24%	28%
Ministry of Economics/Trade	13%	28%	26%	29%	24%
E-mail	10%	8%	7%	20%	11%
Commercial banks	6%	7%	12%	7%	8%

TABLE 1.13: MAJOR ENVIRONMENTAL OR BUSINESS PUBLICATIONS AND READERSHIP (%)

Bulgaria	Croatia	Romania	Slovenia
Pari (19%)	Gospodarstvo i okolis (38%)	Capital (34%)	Gospodarski vestnik (36%)
Kesh (9%)	Okolis (21%)	Tribuna Economica (13%)	Uradni list RS (19%)
Bulgarian Business (6%)	Hrvatske vode (16%)	Mediul Inconjurator (11%)	Okolje (16%)
Capital (6%)	Banka (16%)	Bursa (7%)	Gospodarjenje z odpadki (13%)
Eco (6%)	Zubor (10%)	Protectia Mediului (7%)	Manager (9%)

nization that collected information on environmental business opportunities. Because of this, and because all the countries except Slovenia are still in the process of establishing transparent bidding procedures, informal contacts and daily newspapers were ranked in all four countries as the most useful information channels. Other major sources were the Ministry of Environment, fairs and trade shows and environmental publications. Chambers of commerce and professional associations were not regarded as essential sources of information, an indication of the low priority given to the environmental business sector by the chambers of commerce and the early stage of development of professional associations.

Major Publications

Surprisingly, no single business or environmental publication reaches the majority of respondents in any country. The main environmental and business publications read by environmental professionals surveyed are listed in Table 1.13.

Major Professional Associations

Although personal contacts are the most important source of information for business opportunities, only a third of the survey respondents belong to a professional association. In Slovenia, more than a quarter of the respondents were members of the chamber of commerce. In all the countries, environmental associations tend to focus on specific scientific topics; therefore, names of associations mentioned by the respondents varies significantly. This explains the relatively low occurrence of membership in any given association — even the most popular professional organizations count less than 10 percent of respondents as members. There also is only limited cross-border cooperation, with no professional association operating beyond its own borders.

Conference Attendance

A significant number of business representatives said they regularly attend environmental conferences, fairs and trade shows to learn more about business opportunities. The conferences also provide additional training, networking opportunities and a chance to market products and services. In most of the countries, more than half the survey respondents attended at least two conferences per year. Environmental professionals in Romania and Slovenia tended to participate in conferences more often than their counterparts in Bulgaria and

TABLE 1.14: MAJOR PROFESSIONAL ASSOCIATIONS AND MEMBERSHIP AMONG RESPONDENTS (%)

Bulgaria

Bulgarian Association for Water Supply and Sewage (9%)
Phoenix Resource Waste Branch Association (4%)
BIEA - General Constructions (4%)
Association for Water Quality (4%)

Croatia

Croatian Water Pollution Control Society (10%)
Croatian Association of Energy Experts (4%)
Association of Recyclers (4%)

Romania

Association of Environmental Private Companies (10%)
Association of Engineers (6%)
Association of Hydrogeologists (3%)
Association of Environmental Engineers (3%)
Romanian Society of Chemistry (3%)

Slovenia

Chamber of commerce (28%)
Association of the Protection of Water (5%)
IAH (International Association for Hydrogeology) (3%)
Association of Landscape Architects and Urban Planners (3%)
Ecological Association of Slovenia (3%)

TABLE 1.15: NUMBER OF ENVIRONMENTAL CONFERENCES ATTENDED IN A YEAR

	Bulgaria	Croatia	Romania	Slovenia
None	10%	17%	10%	14%
1-2	43%	42%	35%	29%
3-5	33%	35%	33%	36%
More than 5	14%	6%	22%	21%

TABLE 1.16: MAIN REASONS FOR ATTENDING CONFERENCES

	Bulgaria	Croatia	Romania	Slovenia	Average
Meet others in the same field	70%	69%	75%	68%	71%
Learn about new project opportunities	72%	66%	74%	57%	67%
Find potential partners	72%	56%	59%	53%	60%
Marketing of firm products	48%	56%	43%	26%	59%
Participate for professional training	44%	55%	68%	63%	57%
Participate as speaker	35%	32%	61%	44%	43%

TABLE 1.17: IMPORTANCE OF SELECTED ENVIRONMENTAL INFORMATION TOPICS

	Bulgaria	Croatia	Romania	Slovenia	Average
Domestic environmental regulations	3.5	3.6	3.2	3.7	3.5
Information on where to find domestic partners	3.3	3.7	3.1	3.1	3.3
Domestic environmental problems	3.4	3.3	2.9	3.4	3.2
New environmental technologies	3.2	3.2	2.9	3.3	3.2
Sources of project financing	3.3	3.2	2.6	3.4	3.1
Domestic tenders for projects	3.2	3.0	2.9	3.4	3.1
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	3.3	3.1	2.8	2.8	3.0
EU environmental regulations	3.0	3.1	2.6	3.3	3.0
Eco-efficient and cleaner production practices	3.3	3.1	2.4	2.9	2.9
Announcements of domestic conferences or trade-fairs	2.9	2.8	2.7	3.1	2.9
Certification requirements for environmental professionals	3.0	3.0	2.5	2.8	2.8
Information on where to find international partners	3.0	2.9	2.5	2.8	2.8
Contact information to government agencies	2.8	2.7	2.3	2.6	2.6
International environmental problems	3.0	2.4	2.2	2.7	2.6
Announcements of international conferences or trade-fairs	2.7	2.5	2.1	2.8	2.5
International tenders for projects	2.6	2.3	2.1	2.8	2.4

Note: The following scale was used for rating information demand: 4 = very important; 3 = important; 2 = somewhat important; 1 = not important.

Croatia. Conference attendance frequency for the 12 months prior to the survey is presented in Table 1.15.

When asked to indicate the major reasons for attending conferences, the survey respondents overwhelmingly pointed to the importance of personal contacts and networking. As shown in Table 1.16, 71 percent of respondents cited meeting others in the same professional area of expertise as a reason for attending conferences. Two-thirds said they learned about new project opportunities at such events, and 60 percent stressed their goal of finding potential partners. Increasing the marketing capabilities of their companies was cited by 59 percent of the respondents. Surprisingly, receiving training was mentioned by only 57 percent as a reason to attend conferences.

INFORMATION AND TRAINING NEEDS

Demand for Information

To be successful in the environmental market, companies need a thorough understanding of the financial and regulatory constraints that affect their daily business. In CEE countries especially, companies suffer from a lack of information that is essential for doing business successfully. In most of the surveyed countries, business success depended strongly on personal contacts with various governmental agencies and local authorities. Public procurement processes are, except in Slovenia, in their early stages, and clear bidding processes are not yet in place.

Companies were asked to indicate the importance of several different information resources. The results are shown in Table 1.17. Because governmental regulations affect the demand for environmental services and technologies, it was not surprising that the respondents indicated a great need for information on environmental regulations. Information about domestic partners for joint projects and for experience exchange was also ranked as very important. Information about national environmental problems and new environmental technologies was identified as a high priority, followed by informa-

tion on sources of project financing and on domestic tenders for projects. Information regarding EU environmental regulations was also deemed important, especially in Slovenia, which is a potential candidate for EU membership in the next few years.

Information on business opportunities abroad, international conferences and potential partners was of minor interest. Surprisingly, information on cleaner production practices was also mentioned as a minor problem. This low demand may be due to the general lack of this type of information.

Preferred Information Services

As part of the survey, respondents were asked to rank the usefulness of several information delivery options using the following scale: 4 = very useful; 3 = useful; 2 = somewhat useful; 1 = not useful. The results are shown in Table 1.18. On average, a regular newsletter was considered to be the most useful. Such a newsletter may address project opportunities, financing methods, development of environmental regulations and legislation, and other topics. Conferences addressing specific environmental problems were also considered an important channel in the dissemination of environmental information. The third preferred option was a printed directory of environmental businesses. Some respondents added that it is important for such directories to include specific market information. Finally, an information research service and partnering workshops also received good ratings as options for information delivery.

Some respondents from Bulgaria and Romania also mentioned a need for an environmental business association that would lobby for the environmental business sector at government agencies, regional authorities, and municipalities.

With regard to the cost of information services, almost half of the companies said they would be willing to pay for most of the information products as long as the price was reasonable and the information received was useful. The percentage of respondents willing to pay for a given information product is shown in brackets in Table 1.18.

TABLE 1.18: USEFULNESS OF SELECTED INFORMATION DELIVERY OPTIONS

	Bulgaria	Croatia	Romania	Slovenia	Average
Regular newsletter	3.2 (51%)	3.0 (65%)	2.8 (46%)	2.8 (48%)	3.0 (53%)
Conferences arranged to address specific environmental problems	3.2 (47%)	2.9 (57%)	2.4 (21%)	3.1 (33%)	2.9 (40%)
Environmental business directory (book)	2.8 (46%)	2.7 (54%)	3.1 (54%)	2.8 (36%)	2.8 (47%)
Information research service providing specific information	3.0 (67%)	2.6 (47%)	2.5 (32%)	2.7 (40%)	2.7 (47%)
Partnering workshops designed to introduce s participants to Western partners, government environmental officials and NGO	3.0 (37%)	2.8 (46%)	2.1 (19%)	2.8 (41%)	2.6 (36%)
Environmental Business Directory (CD diskette)	2.2 (48%)	2.7 (50%)	2.7 (56%)	2.8 (40%)	2.6 (49%)
Local business coordinator to arrange meetings, contacts and workshops	2.7 (24%)	2.9 (54%)	1.8 (16%)	2.5 (12%)	2.4 (27%)
Computer database of information resources available on Internet	2.5 (33%)	2.6 (42%)	2.0 (32%)	2.8 (40%)	2.4 (37%)
Broadcast fax service	2.1 (14%)	2.4 (35%)	2.8 (32%)	2.3 (15%)	2.4 (24%)

Note: The following scale was used for the ranking: 4 = very useful; 3 = useful; 2 = somewhat useful; 1 = not useful. Numbers in brackets indicate the percent of respondents willing to pay for such services.

TABLE 1.19: INTEREST IN SELECTED PROFESSIONAL TRAINING TOPICS

	Bulgaria	Croatia	Romania	Slovenia	Average
Environmental regulation and policy	3.2	3.2	2.4	3.2	3.0
Environmental impact assessment	2.8	3.0	3.0	3.2	3.0
Financing environmental investments	2.9	3.0	2.3	3.0	2.8
Environmental economics	2.7	2.7	2.7	3.0	2.8
Environmental management	3.0	2.7	2.4	2.9	2.8
Environmental auditing	2.6	2.6	2.5	2.8	2.6
Environmental systems and their sustainability	2.5	3.1	2.3	2.6	2.6
Project management	2.7	2.8	2.2	2.7	2.6
Environmental risk assessment	2.6	2.8	2.3	2.7	2.6
Strategic planning	2.6	2.6	2.3	2.8	2.5
Integrated solid waste management	2.3	2.9	2.1	2.5	2.4
Hazardous waste site ranking	2.3	2.6	2.2	2.6	2.4
GIS (Geographic Information Systems)	2.1	2.3	2.1	2.5	2.3

Note: The following scale was used in the ranking: 4 = very interested; 3 = interested; 2 = somewhat interested; 1 = not interested.

Demand for Professional Training

As the environmental field and the local marketplace continue their rapid development, professional training becomes ever more important. Successful business development requires not only expertise in certain environmental areas but also an understanding of financial affairs, regulatory frameworks and project management.

Survey respondents were asked to rate their interest in several different advanced professional training areas. The results are shown in Table 1.19. The most notable topic of interest was the development of environmental regulations and policies. Courses in environmental impact assessment and on methods of financing environmental projects also interested businesses, as did training in environmental economics, environmental management and auditing.

ASSISTANCE AND BARRIERS TO BUSINESS DEVELOPMENT

Sources of Assistance

To identify the impact of various groups on the environmental business community, the survey asked companies to rate the importance of several institutions to their business development. Table 1.20 lists the institutions and shows the percentage of respondents in each country who rated them as "important" or "very important."

As expected, governmental institutions and business/industrial associations were considered important sources of support by most respondents, as were financial institutions. International organizations and professional training institutions were said to be of minor importance.

The environmental business sector in Bulgaria and

TABLE 1.20: IMPORTANCE OF VARIOUS GROUPS TO BUSINESS DEVELOPMENT

	Bulgaria	Croatia	Romania	Slovenia	Average
Government	67%	49%	26%	65%	52%
Business/industrial associations	52%	64%	31%	42%	47%
Financial institutions	62%	56%	19%	43%	45%
Scientific/academic institutions	50%	44%	23%	44%	40%
Professional training institutions	30%	38%	30%	43%	35%
International organizations	48%	34%	13%	41%	34%

Note: Percentages indicate the share of respondents who rated the institution as “very important” or “important.”

TABLE 1.21: PERCEIVED BARRIERS TO BUSINESS DEVELOPMENT

	Bulgaria	Croatia	Romania	Slovenia	Average
Access to credit and finance	67%	77%	62%	64%	68%
Tax regulation	66%	59%	33%	39%	49%
Legal regulations and registration requirements	49%	33%	70%	33%	46%
General access to information	54%	47%	55%	34%	47%
Market demand for products and services	54%	55%	48%	24%	45%
Environmental regulations	45%	42%	39%	49%	44%
Foreign competition	33%	22%	16%	15%	22%

Note: Percentages indicate the share of respondents who rated each barrier as a “major barrier” or “barrier.”

Slovenia rated information from government institutions as very important, whereas in Croatia and especially in Romania, government institutions were said to have much less impact. Business and industrial associations and financial institutions play an important role in Bulgaria, Croatia, and Slovenia.

Barriers to Development

Environmental businesses were asked to identify the main obstacles to business development. Table 1.21 lists several common barriers along with the percentage of respondents who identified them as “major barriers” or “barriers”

Access to credit and finance was rated by the respondents as the biggest hindrance to further business development. This reflects the current severity of the financial markets — commercial loans are difficult to obtain and, when granted, require business to pay extremely high interest rates. Tax and legal regulations are also seen to prevent business development, but the amount of interference varies from country to country. Lack of access to information and low market demand were also cited as significant barriers to business development, except in Slovenia.

Most of the countries are EU associate countries, and their environmental legislation will therefore eventually comply with EU standards. This means, in many cases, the laws will be tougher and enforcement stricter. As of now, environmental regulations were not seen to be a major barrier to development of environmental businesses. Foreign competition within the environmental market was also viewed as only a minor barrier.

Unfortunately for environmental businesses, they have little power to eliminate the obstacles that stand in the way of their development. However, the governments could reduce most of the barriers by introducing instruments and incentives that favor environmental enterprises. Above all, the enforcement of environmental and tax regulations and improved access to financing are key factors in creating a market in which environmental businesses can thrive.

Chapter 2: Bulgaria

2.1 Summary of Findings

In 1995, spending on environmental protection in Bulgaria totaled USD 118 million, or 0.9 percent of the country's gross domestic product. The main sources of funds for environmental projects were private and state-owned enterprises (63 percent) and the state budget (29 percent). Local authorities and the State Environmental Protection Fund each contributed about 8 percent of the total environmental expenditure.

The largest portion of environmental spending was allocated to water and wastewater-related projects (34 percent), followed by air pollution-control activities (28 percent) and waste management-related activities (16 percent). The remaining 22 percent went toward other projects, including spending on the national monitoring system.

The environmental business sector in Bulgaria is the smallest of the four surveyed countries. It is estimated that fewer than 100 businesses provide environmental services and technologies (68 were included in this survey). The market is also young — 60 percent of the companies were established after 1990. More than half of the surveyed companies were privately owned, and a significant share (35 percent) were state-owned. The remaining companies were either in the process of privatization or had some combination of state and private ownership.

With only 7 percent of companies operating joint-ventures with foreign firms, Bulgaria has the lowest occurrence of foreign partnerships of all the surveyed countries. Partners for Bulgarian joint-ventures came mainly from Austria, Germany and the United States.

Total annual revenues from environmental activities reported by the 42 companies that provided financial data exceeded USD 23 million in 1995. Technical services generated the highest share of revenues (46 percent), followed by the sale of environmental technologies (33 percent) and testing and monitoring activities (11 percent). Other income was generated from research, training and education, which accounted for 10 percent of total revenues.

When the total revenue was broken down by media, the largest share (39 percent) came from water and wastewater activities, followed by waste-related activities (25 percent). Air pollution control and energy-related activities each generated 8 percent of total revenues. The rest came from other non-media specific activities, including industrial safety and noise prevention, environmental impact assessment and soil and land activities.

As in the other surveyed countries, there exist no effective formal channels for information on project opportunities in Bulgaria. Personal and professional contacts, environmental publications, the daily press, participation in conferences, the Ministry of Environment, and fairs and trade shows are among the primary sources of information regarding environmental business opportunities. Professional associations, such as a chamber of commerce, and the Academy of Sciences are not seen as major information sources or as effective lobbying groups for the environmental business sector.

Bulgaria's environmental professionals showed high interest in information regarding domestic environmental regulations, domestic environmental problems, sources of project financing, ways to find domestic partners, environmental quality standards for industries and eco-efficient and cleaner production practices.

Almost half the respondents showed high interest in conferences arranged to address specific environmental problems; a regular newsletter containing updated information on project opportunities, technologies, and financing; and an information research service providing specific environmental information. More than half of the respondents would be willing to pay for such information products. Other delivery options in high demand included a printed environmental business directory and a workshop designed to introduce Bulgarian firms to Western partners, government environmental officials and NGOs.

Professional environmental training was requested particularly on environmental regulation and policy, environmental management, financing environmental investments and environmental impact assessment.

The government was considered by 67 percent of the respondents as an important source for support and assistance. Other important sources of assistance mentioned as important by more than half of the respondents included financial institutions, business and industrial associations and scientific and academic institutions.

Access to credit and financing was seen as the biggest barrier to the development of Bulgaria's environmental business sector and was mentioned by 67 percent of respondents. Other factors that were considered barriers by more than half of the respondents included tax regulations, market demand for environmental products and services and general access to information.

2.2 Introduction

POLITICAL SITUATION

After the Bulgarian Socialist Party government and its prime minister, Zhan Videnmov, resigned in December 1996, a new party leader, Georgi Purvanov, was appointed and Nikolay Dobrev was nominated as prime minister. However, mass demonstration prevented the Bulgarian Socialist Party from forming a new government, and early parliamentary elections were scheduled for April 1997. In the meantime, a temporary government was appointed by the president to organize the elections and to prepare legislation that would establish a currency board. As expected, the opposition party won the April election, and the newly elected government's first priority was to stabilize the economy. The introduction of the currency board will depend upon support from the International Monetary Fund.

ECONOMIC SITUATION

The transition from a centrally planned economy to a market economy was expected to have a beneficial impact on the environment, as many governmental policies had contributed to environmental degradation through the years. However, most of the environmental improvements of the past seven years can be attributed to a general decrease in economic activity. Bulgaria's economic transition has been more difficult than that of many other countries because of Bulgaria's high dependence on trade with the former Soviet Union and with

TABLE 2.1: KEY ECONOMIC INDICATORS

	1994	1995	1996*	1997*
GDP growth (%)	1.8	2.6	-9.0	-2.0
Inflation (%)	96.3	62.0	220.0	60.0
Unemployment (%)	12.8	10.5	10.4	12.0
Exports (bln USD)	3.94	5.11	4.50	n/a
Imports (bln USD)	3.95	4.68	4.00	n/a
Budget balance (% of GDP)	-5.8	-5.7	-8.9	-5.0
Gross debt (bln USD)	10.3	9.4	9.5	9.6

*forecast

Source: Business Central Europe, The Annual Report, 1996

other Council for Mutual Economic Assistance (CMEA) countries. This trade once accounted for more than 70 percent of Bulgaria's foreign trade. The loss of these markets led to a serious decline in export and economic growth.

By 1995, the economy was improving, but in 1996, the two years of modest growth ended. Gross domestic product fell by an estimated 9 percent, and the inflation rate increased to an annual average of 220 percent. Unemployment also started rising and was estimated at 12.5 percent by the end of the year.

The economic decline was projected to continue through 1997, as annual GDP is expected to decline another 2 percent. However, the economy may begin to grow again in 1998, provided the situation stabilizes before the start of the year.

In 1996, foreign direct investment totaled USD 300 million, an 85 percent increase over 1995. However, foreign direct investment in Bulgaria is still very low compared to regional standards.

2.3 Overview of the Environmental Market

ENVIRONMENTAL EXPENDITURES

Financial resources for environmental expenditures have decreased in recent years, mainly because Bulgaria's severe economic problems have constrained the ability of key sectors to finance environmental expenditures. This has especially discouraged investments in cleaner production processes that require enterprise resources and environmental investments that recover costs via user charges. The government has also tried to reduce public expenditures and contain high budget deficits as part of its macroeconomic stabilization. In addition, the difficult economic conditions have brought pressure to relax or suspend environmental requirements, particularly

TABLE 2.2: ENVIRONMENTAL EXPENDITURES, 1993-1995

Year	Environmental expenditures (mln USD)	Share of GDP (%)
1993	137.5	1.3
1994	108.4	1.0
1995	118.0	0.9

Source: Ministry of Environment, 1996

where they may affect employment.

Total spending on environmental protection in Bulgaria was 1.3 percent of the gross domestic product in 1993 and has decreased since then. In 1995, only 0.9 percent of GDP was spent on environmental protection activities. As shown in table 2.2, annual environmental expenditures amounted to more than USD 137 million in 1993, USD 108 million in 1994 and USD 118 million in 1995.

In 1994, 29 percent of environmental expenditures was derived from governmental sources, 8 percent from local authorities and 63 percent from private and state-owned enterprises. A minor part was derived from the national and municipal Environmental Protection Funds and from international financial assistance. The state budget for 1996 provides expenditures mainly for nuclear safety — USD 70,000 has been allocated to the safety and storage of radioactive waste fund, and USD 5 million is provided for safety investments for the Koslodui nuclear plant.

Although the biggest share of environmental expenditures comes from domestic sources, total commitment of foreign assistance in 1994 amounted to approximately USD 12 million. However, only a portion of the committed funds had been disbursed. Loans totaled more than USD 240 million. In addition, Bulgaria has reached an agreement for a public debt-for-environment swap with Switzerland, and the PHARE Programme provided USD 3.5 million in 1996 for environmental activities.

Two eco-investments started in 1996 are the result of agreements between the Bulgarian and Japanese governments for treatment of a nonferrous metal plant in Plovdiv (USD 60 million) and of mining facilities in Eliseina (USD 20 million). The investments are mainly for technical equipment, waste recycling and air pollution prevention. Additional investments in sewage and drainage systems for some municipalities totaled USD 10 million. These were mainly investments made by the German consortium RWE-RTZ.

Urgent investment will be needed in the near future upon the adoption of EU standards concerning water quality, municipal waste management and modernization of the industry. These regulations will necessitate an overall increase of environmental expenditures.

STATE ENVIRONMENTAL FUNDS

As in other transition economies, both budgetary funds and earmarked revenues for environmental protection are very limited in Bulgaria. The National Environmental Protection Fund was established in 1993 and is operated by the Ministry of Environment. The Environmental Protection Law of 1991 provided the legal framework for the creation of a National Environmental Protection Fund and Municipal Environmental Protection Funds. The primary objective of the funds is to finance the clean-up of environmental pollution.

Sixty percent of the pollution charges and 70 percent of the pollution fines are allocated to the National Environmental Protection Fund. The rest of the pollution charges and fines are allocated to the Municipal Environmental Funds. Additional revenue sources for the funds include fees collected by the Ministry of Environment for special services; proceeds from the privatization of state-owned companies and from taxes on fuel; and installments and interest payments. By the end of 1995, environmental funds had been established in 170 of Bulgaria's 251 municipalities.

In 1996, the Executive Office received 647 applications for funding from municipalities, companies and environmental NGOs. The number of applicants is expected to increase in the future, especially because high inflation makes the long repayment period of loans from the fund particularly attractive. Further, loans given by the environmental funds tend to carry lower interest rates than commercial banks charge.

Total fund revenues for 1996 were estimated at USD 10.6 million, while expenditures amounted to USD 9.3 million. Revenue and expenditure figures for the past four years are shown in Table 2.3.

Over the past four years, the largest portion of the Fund's spending was allocated to water-related projects, predominately for the construction of wastewater treatment plants (45 percent of the total spending in 1996). Spending on air pollution was mainly directed toward air purification equipment and amounted to 13 percent of total spending. Only 8 percent was spent on waste-related projects. Monitoring and information systems were given a high priority in the past (45 percent of total spending in 1993), but spending in this area had decreased to 17 percent by 1996. Table 2.4 shows the breakdown of spending by media.

According to the Fund's managing board, in 1997 priorities were given to air treatment projects (52 percent of total planned spending), water-related projects (32 percent) and waste-related projects (10 percent).

The activities of the National Environmental Protection Fund, the application documents, the terms of financing and the priorities and the areas for financing are published in the mass media. Furthermore, printed brochures are provided free of charge to ministries and institutions as well as to municipalities and interested companies. In 1996, main recipients of funds were state-owned and private enterprises, which received 37 percent of the expenditure, and municipalities, which received 22 percent.

The National Trust Ecofund (NTEF)

In addition to the National Environmental Protection Fund and the Municipal Environmental Protection Fund, the National Trust Ecofund was set forth in 1995 as part of the conditions of the debt-for-environment swap agreement between the governments of Bulgaria and Switzerland. The Ecofund became operational in October 1996. Its main objectives are to manage the funds provided under the debt-for-environment agreement, the debt-for-nature agreement and other types of agreements made with international or Bulgarian sources to finance environmental projects and activities in Bulgaria. The Ecofund would particularly focus on agreements regarding air pollution reduction, water pollution prevention, site remediation activities and the protection of biodiversity.

The Ecofund started in 1996 with an initial USD 7.5 million, but the first investment projects were approved only at the beginning of 1997. Expenditures for 1996 amounted to USD 400,000, which mainly covered administrative and operational costs.

ENVIRONMENTAL PRIORITIES

Bulgaria's environmental problems are serious and have been only partly addressed in the past. In particular, air pollution is an urgent environmental problem in the cities. The extreme high concentration of particles, heavy metals, volatile organic compounds and SO₂ poses significant risks to human health. Local industries are identified as the main polluters, especially the petroleum refining and petrochemical industries, including power and chemical plants and cement, iron and steel factories. Even though some progress has been made as a result of major investments in air pollution abatement technologies, the population of some urban areas is still exposed to extensive levels of pollutants. For example, traffic-related air pollution increased significantly over the past years.

Another area of major concern is solid waste which is collected and disposed of improperly and therefore causes serious soil and water contamination. Nevertheless, ground water is of good quality and usable as drinking water except in a few cases.

Water degradation comes mainly from industrial effluents

TABLE 2.3: REVENUES AND EXPENDITURES OF THE STATE ENVIRONMENTAL FUND (MLN USD)

	1993	1994	1995	1996 ¹
Total revenues	3.8	6.0	7.9	10.6
Total expenditures	2.2	3.6	6.3	9.3

1) estimated

Source: Ministry of Environment; National Environmental Protection Fund, 1997

TABLE 2.4: FUND EXPENDITURES BY MEDIA

	1993	1994	1995	1996 ¹
Air	12%	32%	25%	13%
Water	33%	31%	38%	45%
Waste	4%	2%	3%	8%
Monitoring and Information Systems	45%	30%	29%	17%
Other (e.g. soil protection, etc.)	6%	5%	5%	17%

1) estimated

Source: Ministry of Environment, National Environmental Protection Fund, 1997

TABLE 2.5: FUND EXPENDITURES BY TYPE OF RECIPIENT

	1993	1994	1995	1996 ¹
Enterprises (private and state-owned)	34%	26%	27%	37%
State administration	—	—	7%	12%
Municipal/local administration	23%	40%	31%	22%
NGOs, public institutions, etc.	3%	4%	6%	12%
Other ²	40%	30%	29%	17%

1) estimated

2) includes expenditures for the national environmental monitoring and control system and financing to support the Fund's executive office

Source: Ministry of Environment, National Environmental Protection Fund, 1997

and from municipal sewage. Although there has been some progress, many industries have not installed proper pre-treatment facilities, and the industrial wastewater is directly charged into the municipal sewage system. Compounding the problem, the technologies used in municipal treatment plants are generally outdated or in poor condition. Overall, industrial pollution control equipment is old and not functioning properly.

An inventory of polluted agricultural lands in 1993 revealed almost 20,000 hectares of land contaminated with heavy metals; 1,900 hectares with radionuclides; 400 hectares with severe acidity; and 25 hectares with oil products deposited mainly through industrial activities.

Bulgaria's national environmental strategy emphasizes the

TABLE 2.6: ENVIRONMENTAL EXPENDITURES BY MEDIA

	1994	1995
Air pollution	29%	27%
Water and Wastewater	44%	34%
Waste	13%	16%
Other	14%	22%

Source: Ministry of Environment, 1996

importance of economic reform and structural change in promoting more efficient use of natural resources and energy, encouraging a shift toward less-damaging economic activities and technologies and encouraging a shift toward generating the revenue required by government, enterprises, and households to finance environmental expenditures.

These goals are reflected in the environmental expenditures. In 1995, priority was given to water and wastewater-related projects (34 percent of total environmental expenditures), followed by air pollution control activities (27 percent), and waste related projects (16 percent).

LEGISLATION AND ENFORCEMENT

In 1990, the Ministry of Environment was created and the environmental framework law was passed, introducing the polluter pays principle and the process of environmental impact assessment. Also, an environmental strategy was formulated in 1992 and revised and updated in 1994. The strategy outlines further development of the institutional, legal and regulatory framework and identifies areas of major concern which require immediate action.

Currently all of the Bulgarian environmental legislation is undergoing major revision, and new legislation tends to be in compliance with EU standards, such as the draft water act. However, the compliance level is still very low in the areas of air and water quality, waste management, chemical substances, radiation protection and nature protection. In addition, new environmental impact assessment regulations need to be developed, as past amendments to the standing legislation have weakened its impact. Air emission standards are inadequate, although an air pollution law has been drafted which proposes the introduction of a system of permits. Also, water emission standards are inadequate. Apart from the area of hazardous waste, in which some regulations exist, there is no coherent national policy, no legislation for waste management, no official control of waste management practices and no specific regulation on incineration of waste. Furthermore, the newly drafted waste law does not list all types of waste. Finally, regulations on chemical substances and agricultural pollution are lacking or need to be updated.

Although the national environmental monitoring network was strengthened in the past, enforcement of legislation is still inconsistent and needs more political commitment, better staffing and improved capacity of the national and municipal institutions, in particular the environmental inspectorates.

ENVIRONMENTAL ADMINISTRATION

The primary institutions in Bulgaria concerned with environmental protection are the Parliamentary Commission on Environmental Protection and Water Resources, the Ministry of Environment and its related agencies, and the municipal authorities.

The central government is in principal responsible for

environmental decisionmaking, and the main duties are carried out within the Ministry of Environment. These major duties include formulating draft environmental legislation; coordinating environmental protection activities and pollution control; monitoring the state of the environment; coordinating and managing the National Environmental Protection Fund and issuing permits for water discharges.

The Ministry for Environment acts through 16 regional environmental inspectorates which carry out controlling, licensing and monitoring functions within their area. The National Center for the Environment and Sustainable Development organizes the activity of the national automated systems for ecological monitoring by managing and controlling the regional environmental inspectorates with respect to environmental monitoring. Other responsibilities include the dissemination of information on the state of the environment. In addition to the Ministry of Environment and its related institutions, the following institutions have competence related to environmental protection: the Ministry of Health, the Ministry of Agriculture and Food, the Ministry of Territorial Development and Building, the Committee of Forests and the National Council of Water Resources at the Council of Ministers.

Bulgaria is divided into nine regions which together contain 255 municipalities. The larger municipalities operate their own environmental departments, and local authorities have the right to adopt and enforce local standards and collect environmental taxes.

Pollution monitoring is still centralized. There are a number of metallurgy, energy, chemical and cement enterprises that are major polluters but which have not been equipped with proper pollution monitoring and control systems.

The monitoring and control of surface water pollution is carried out by the National System for Ecological Monitoring. In 1995, the national network for control and protection of the surface waters purity covered 340 monitoring points, including 278 points along the internal rivers, 21 along the Bulgarian sector of the Danube River, 15 for internal lakes and 26 for the Black Sea. The condition of the underground waters is monitored by a network of 238 points.

Monitoring and control over air pollution also is carried out by the National System for Ecological Monitoring. The system has been in existence since 1972 and covers 42 settlements with 105 station points.

2.4 Profile of the Environmental Business Sector

The Bulgarian environmental business sector is small and comprises approximately 100 companies that provide environmental services and technologies. Although a number of the companies were established before 1980, Table 2.7 shows the majority are quite young, with more than 60 percent established after 1990. Most of the environmental businesses founded after 1990 are privately owned. As shown in Table 2.8, of the 68 companies interviewed, 54

TABLE 2.7: AGE BREAKDOWN OF ENVIRONMENTAL COMPANIES

Year Established	Percentage
After 1992	26%
1990-1992	34%
1980-1989	10%
Before 1980	30%

TABLE 2.8: OWNERSHIP STRUCTURE OF ENVIRONMENTAL BUSINESSES

<i>Ownership</i>	<i>Percentage</i>
Privately owned	54%
State owned	35%
State and privately owned	4%
In process of privatization	7%

TABLE 2.9: OFFICE EQUIPMENT USED

<i>Office Equipment</i>	<i>% of respondents</i>
Telephone	99%
Personal computer	87%
Fax	87%
Printer	82%
Photocopier	69%
Telex	31%
Modem	23%
Cellular phone	19%
On-line services connection	19%
Mainframe computer	15%
E-mail	14%
GIS computer	7%

percent were privately owned, 35 percent were state owned, and 7 percent of the companies were state-owned firms in the process of privatization.

As Table 2.9 shows, surveyed companies were outfitted with all types of modern office equipment. Almost all the companies were equipped with telephone lines; and personal computers, printers and fax machines were all relatively standard. However, only 14 percent said they have an e-mail connection.

Most of the companies are small. More than half the survey respondents employ 10 or fewer full-time employees, while only 16 percent employ more than 50. The breakdown is shown in Table 2.10. Overall, the number of people employed in the environmental business sector is not very high.

The surveyed companies reported annual environmental revenues exceeding USD 23 million in 1995, which represents approximately 20 percent of the estimated market. However, some of the companies would not provide detailed financial data, and as a result the total comes from only 42 of the 68 surveyed companies. The breakdown of companies by amount of revenue in 1995 is shown in Table 2.11.

The market is driven by technical services, which accounted for 46 percent of total annual revenues generated by surveyed businesses. As shown in Table 2.12, this is followed by the manufacture of environmental technologies (33 percent), testing and monitoring (11 percent) and other activities, e.g. research and development, education, etc. (10 percent).

Analysis by media shows that water and wastewater-related activities were the leading areas from which companies generated income (39 percent of revenues), followed by waste-related activities (25 percent). Other non-media specific activities (e.g. consultants activities which include more than one media like EMS, EIA, environmental planning, industrial

TABLE 2.10: EMPLOYEES INVOLVED IN ENVIRONMENTAL ACTIVITIES

<i>Number of employees</i>	<i>Full-time workers</i>	<i>Part-time/contractors</i>
Up to 5	38%	-
6-10	13%	60%
11-20	15%	10%
21-50	18%	19%
More than 50	16%	11%

TABLE 2.11: BREAKDOWN OF COMPANIES BASED ON REVENUES FROM ENVIRONMENTAL ACTIVITIES IN 1995

<i>Revenues (USD)</i>	<i>% of Respondents</i>
Less than 100,000	59%
101,000-250,000	17%
251,000-500,000	5%
501,000-1 million	6%
1 million-5 million	11%
More than 5 million	2%

TABLE 2.12: BREAKDOWN OF REVENUES BY ACTIVITY

<i>Activity</i>	<i>% of Revenues</i>
Technical services	46%
Environmental technologies	33%
Testing, monitoring and laboratory	11%
Other	10%

TABLE 2.13: BREAKDOWN OF REVENUES BY MEDIA

<i>Media</i>	<i>% of Revenues</i>
Water and wastewater	39%
Waste	25%
Air	8%
Energy	8%
Other (not media specific)	20%

safety and noise control, etc.) amounted to 20 percent of total annual environmental revenues. The breakdown is shown in Table 2.13.

Joint-ventures are rare in Bulgaria's environmental business market. Only 7 percent of the environmental businesses operate a joint-venture with a foreign company. The leading countries from which survey respondents had joint-venture partners were Austria and Germany (two joint-ventures indicated from each) and the United States (one joint-venture). The main foreign languages spoken by Bulgarian business representatives were Russian, English and German.

2.5 Information Channels for Business Opportunities

Environmental professionals in Bulgaria receive business information mainly through personal contacts and from environmental publications, the daily press and attendance at conferences. Other major channels for information on business development include the Ministry of Environment, fairs and trade shows, direct mail and business publications. Surprisingly, professional associations and chambers of commerce were mentioned by only 22 percent and 15 percent, respectively, as sources of information to find out about business opportunities. Even international organizations and the Academy of Sciences were used more frequently for finding out about environmental business opportunities. Table 2.14 shows the percentage of survey respondents who said they receive information through the listed channels.

Fewer than half of environmental professionals said they participated in more than three conferences annually (see Table 2.15). The major reasons given for attending conferences were to learn about new project opportunities, to find potential partners and to meet others in the same field. The percentage of respondents citing various reasons for attending is shown in Table 2.16.

Comparison of tables 2.17, 2.18 and 2.19 shows a much more widespread readership of the main business publications and newspapers than of the top environmental publications. For example, the most widely read environmental publication, *Eco*, was read by 6 percent of respondents, while the top business publication, *Pari*, was read by 19 percent of respondents. The top three newspapers, *Trud*, *Pari*, and *24 hours*, also enjoyed significant readership, with 16 percent, 13 percent and 11 percent, respectively.

When asked to name the most important professional associations, the largest number of respondents (9 percent)

TABLE 2.14: MOST IMPORTANT CHANNELS OF INFORMATION ABOUT BUSINESS OPPORTUNITIES

<i>Information Channel</i>	<i>% of Respondents</i>
Personal contacts	94
Environmental publications	66
Daily press	65
Conference attendance	65
Environmental Ministry	60
Trade shows and fairs	59
Direct mail	46
Business publications	40
Local authorities/municipalities	35
International organizations	34
University/Academy of Sciences	30
Professional associations	22
Broadcast fax service	16
Chamber of Commerce	15
Ministry of Economics/Trade	13
E-mail	10
Commercial banks	6

TABLE 2.15: ANNUAL CONFERENCE ATTENDANCE

<i>Number of Conferences Attended Annually</i>	<i>% of Respondents</i>
None	10%
1-2	43%
3-5	33%
6-10	12%
More than 10	2%

TABLE 2.16: MAIN REASONS FOR ATTENDING CONFERENCES

<i>Reasons</i>	<i>% of Respondents</i>
Learn about new project opportunities	72%
Find potential partners	72%
Meet others in the same field	70%
Marketing of firms products	48%
Participate in professional training	44%
Participate as speakers	35%

TABLE 2.17: READERSHIP OF ENVIRONMENTAL PUBLICATIONS

<i>Publication</i>	<i>% Who Read</i>
<i>Eco</i>	6%
ME Bulletin	4%
ETP News	3%
<i>Eco Energy</i>	3%
Eco-Info Bulletin of NCEMR	2%

TABLE 2.18: READERSHIP OF BUSINESS PUBLICATIONS

<i>Publication</i>	<i>% Who Read</i>
<i>Pari</i>	19%
<i>Kesh</i>	9%
Bulgarian Business	6%
Capital	6%
Control and Finance	4%
<i>Economika</i>	4%

TABLE 2.19: READERSHIP OF NEWSPAPERS

<i>Newspaper</i>	<i>% Who Read</i>
<i>Trud</i>	16%
<i>Pari</i>	13%
<i>24 hours</i>	11%
Standart	8%
Capital	4%

TABLE 2.20: MOST IMPORTANT PROFESSIONAL ASSOCIATIONS

<i>Association</i>	<i>% of Respondents</i>
Bulgarian Association for Water Supply and Sewage	9%
Phoenix Resource Waste Branch Association	4%
BIEA - General Constructions	4%
Association for the Water Quality	4%

mentioned the Bulgarian Association for Water Supply and Sewage. Other mentioned associations included Phoenix Resource Waste Branch Association and BIEA-General Constructions. These are shown in Table 2.20.

2.6 Information and Training Needs

Survey respondents were asked to rate the type of information significant to their business development. Sixty-eight said updated information on environmental regulations was very important for their business development. Surprisingly, 63 percent indicated that information on in-country environmental problems was very important. More than half of survey respondents also considered very important information on sources of project financing and on domestic tenders for projects. Other important subjects included information on where to find domestic partners and on environmental quality standards for industries. The results of the rankings are shown in Table 2.21.

Respondents were also asked to rank the best delivery options for receiving this requested information. The results are presented in Table 2.22. Conferences and a regular newsletter with updated information were seen by almost half of the respondents as very useful delivery options. One out of three respondents considered very useful each of the following delivery options: information research service providing specific information, partnering workshops designed to introduce participants to partners from various institutions and an environmental business directory that includes specific market information. Table 2.22 also shows the percentage of respondents who would be willing to pay for such services.

TABLE 2.21: IMPORTANCE OF SELECTED ENVIRONMENTAL INFORMATION

<i>Environmental Information</i>	<i>Rating</i>
Domestic environmental regulations	3.5 (68)
Domestic environmental problems	3.4 (63)
Sources of project financing	3.3 (57)
Information on where to find domestic partners	3.3 (49)
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	3.3 (47)
Eco-efficient and cleaner production practices	3.3 (42)
Domestic tenders for projects	3.2 (55)
New environmental technologies	3.2 (49)
EU environmental regulations	3.0 (43)
Certification requirements for environmental professionals	3.0 (35)
Information on finding international partners	3.0 (38)
International environmental problems	3.0 (25)
Announcements of domestic conferences or trade fairs	2.9 (27)
Contact information to government agencies	2.8 (30)
Announcements of international conferences or trade fairs	2.7 (28)
International tenders for projects	2.6 (25)

Note: The following scale was used for the rating: 4 – very important, 3 – important, 2 – somewhat important, 1 – not important. Numbers in brackets indicate the percentage of respondents who rated the information as very important.

Regarding topics for advanced professional training, the subjects most interesting to Bulgarian environmental professionals were environmental regulations and policy, environmental management and financing environmental investments. The need for training on environmental impact assessment and project management was also mentioned by one third of the respondents as very important. Interest in various training topics is presented in Table 2.23.

TABLE 2.22: USEFULNESS OF SELECTED INFORMATION DELIVERY OPTIONS

<i>Delivery option</i>	<i>Rating</i>	<i>% of Respondents Willing to Pay</i>
Conferences arranged to address specific environmental problems	3.2 (48)	47
Regular newsletter	3.2 (48)	51
Information research service providing specific information	3.0 (44)	67
Partnering workshops designed to introduce you to western partners, government environmental officials and NGOs	3.0 (36)	37
Environmental Business Directory (book)	2.8 (36)	46
Local business coordinator to arrange meetings, contacts and workshops	2.7 (29)	24
Computer database of information resources available on Internet	2.5 (27)	33
Environmental Business Directory (CD diskette)	2.2 (19)	48
Broadcast fax service	2.1 (10)	14

Note: The following scale was used for the rating: 4 - very useful, 3 - useful, 2 - somewhat useful, 1 - not useful. Numbers in brackets indicate the percentage of respondents which find delivery option very useful.

TABLE 2.23: INTEREST IN PROFESSIONAL TRAINING

<i>Type of Training</i>	<i>Rating</i>
Environmental regulation and policy	3.2 (45)
Environmental management	3.0 (41)
Financing environmental investments	2.9 (39)
Environmental impact assessment	2.8 (32)
Project management	2.7 (35)
Environmental economics	2.7 (32)
Strategic planning	2.6 (30)
Environmental risk assessment	2.6 (27)
Environmental auditing	2.6 (24)
Environmental systems and their sustainability	2.5 (21)
Integrated solid waste management	2.3 (18)
Hazardous waste site ranking	2.3 (18)
GIS (Geographic Information Systems)	2.1 (16)

Note: The following scale was used for the rating: 4 - very interested, 3 - interested, 2 - somewhat interested, 1 - not interested. Numbers in brackets indicate the percentage of respondents who are very interested in a particular training.

TABLE 2.24: IMPORTANCE OF SELECTED SOURCES OF ASSISTANCE

<i>Institution or organization</i>	<i>Responses for "Very Important" or "Important"</i>
Government	67%
Financial institutions	62%
Business or industrial associations	52%
Scientific or academic institutions	50%
International organizations	48%
Professional training institutions	30%

TABLE 2.25: PERCEIVED BARRIERS TO BUSINESS DEVELOPMENT

<i>Barriers to Development</i>	<i>Responses for "Major Barrier" or "Barrier"</i>
Access to credit and finance	67%
Tax regulation	66%
Market demand for products and services	54%
General access to information	54%
Legal regulation and registration requirements	49%
Environmental regulations	45%
Foreign competition	33%

2.7 Assistance and Barriers to Business Development

When asked to indicate the importance of various institutions to their business development, 67 percent of respondents rated government as "very important" or "important." This likely stems from the fact that the environmental business sector strongly depends on government institutions to provide information on project opportunities. As shown in Table 2.24, financial institutions were further seen as an important source of assistance. Business or industrial associations and scientific institutions were also considered important by at least half the respondents.

Not surprisingly, when it comes to obstacles to business development, 67 percent of companies considered the lack of access to credit and finance as a barrier. As shown in Table 2.25, large percentages of survey respondents also pointed to tax regulations, market demand for environmental products and services and general access to information as significant problems they face. Interestingly, one out of three respondents also considered foreign competition as a barrier to business opportunities and development.

Chapter 3: Croatia

3.1 Summary of Findings

In 1995, spending on environmental protection in Croatia amounted to USD 152 million, or 0.8 percent of the country's gross domestic product. The main sources of funds for environmental projects were private and state-owned enterprises and the state budget. Local authorities contributed only a small portion to total environmental expenditures in 1995.

Direct environmental investments focused primarily on water management projects, including the construction of sewage systems and wastewater treatment facilities. In the future, major spending can be expected on waste management-related projects. Accurate data on environmental spending are currently not available.

The environmental business sector in Croatia is small and young. It is estimated that fewer than 200 businesses provide environmental services and technologies (141 were included in this survey), and 56 percent of the companies were established after 1990. More than 80 percent of the companies were privately owned. The rest are in the process of privatization, fully state-owned or under some combination of state and private ownership.

With 14 percent of environmental companies operating joint-ventures with foreign firms, Croatia has the highest occurrence of foreign partnerships of all the surveyed countries. Partners for Croatian joint-ventures come mainly from Germany, the United States and Austria.

Total annual revenues from environmental activities reported by the 118 companies that provided financial data exceeded USD 99 million in 1995. Technical services generated more than half of the revenues, followed by the sale of environmental technologies (30 percent) and testing and monitoring activities (14 percent). Other income was generated from research, training and education, which accounted for 5 percent of total revenues.

When the total revenue was broken down by media, the largest share was generated from waste-related activities (40 percent), followed by water and wastewater activities (29 percent) and air pollution control and energy-related activities (7 percent each). The remaining revenues came from non-media specific activities, including industrial safety and noise, environmental impact assessment and soil and land activities.

As in the other surveyed countries, no effective formal channels exist to provide information on project opportunities in Croatia. Personal and professional contacts, fairs and trade shows, environmental publications, the State Directorate for Environmental Protection, the daily press and local authorities are among the primary sources for information about business opportunities. Professional associations, such as the chamber of commerce and the Academy of Sciences, are not seen as major information sources or as effective lobbying groups for the environmental business sector.

Croatia's environmental professionals showed high interest in information about ways to find domestic partners, domestic environmental regulations, domestic environmental problems, sources of project financing, new environmental technologies and EU environmental regulations.

Respondents showed high interest in several information delivery options, including a regular newsletter containing updated information on project opportunities, technologies

and financing; conferences arranged to address specific environmental problems; and a local business coordinator to arrange meetings, contacts and workshops. More than half of the respondents would be willing to pay for such information products. Other delivery options in high demand included a partnering workshop designed to introduce Croatian business professionals to Western partners, government environmental officials and NGOs; and an environmental business directory.

Professional environmental training was requested particularly on environmental regulation and policy, environmental systems and their sustainability, environmental impact assessment and financing environmental investments.

The most important source for support and assistance for environmental projects was business and industrial associations, considered important by 64 percent of the survey respondents. Other important sources of assistance mentioned by more than half the respondents were financial institutions and the government.

Access to credit and financing was widely seen as the biggest barrier to the development of Croatia's environmental business sector and was mentioned by 77 percent of respondents. Other obstacles mentioned by more than half the respondents were tax regulations, market demand for environmental products and services and general access to information.

3.2 Introduction

POLITICAL SITUATION

The Croatian Parliament is dominated by the Croatian Democratic Union (HDZ), of which President Tudjman is the founder and party leader. The Croatian Democratic Union won the most recent elections, held in early 1997, and through the complicated electoral system gained a majority in the House of Representatives. HDZ is also the controlling party throughout local government. The government still controls almost all the television, radio and printed media.

In early 1992, Croatia's status as an independent country was officially recognized by the EU and other countries. Croatia became a member of the UN in April of that year and shortly afterward joined the IMF and the World Bank. In 1995, negotiations with the EU regarding a trade and cooperation agreement were suspended after the military took over the area of Krajina. In 1996, the ministerial committee of the Council of Europe rejected Croatia's application for membership until more progress had been made on human and democratic rights. However, Croatia was admitted in late 1996 even though these conditions were only partially fulfilled. This decision allows new negotiations on a trade and cooperation agreement, although an EU association agreement remains a long way off and will not be possible until the government undertakes more serious efforts to protect human and democratic rights.

ECONOMIC SITUATION

The transition to a market economy has been quite different in Croatia compared to other countries in the region. In particular, the Yugoslav war contributed to an economic cri-

TABLE 3.1: KEY ECONOMIC INDICATORS

	1994	1995	1996*	1997*
GDP growth (%)	0.8	-1.5	5.0	6.0
Inflation (%)	97.6	2.0	3.7	3.9
Unemployment (%)	n/a	13.9	15.0	14.2
Exports (bln USD)	4.26	4.63	4.80	5.20
Imports (bln USD)	4.71	7.51	7.80	8.50
Budget balance (% of GDP)	-1.7	-0.8	-2.5	-3.0
Gross debt (bln USD)	3.1	3.7	4.6	5.1

*forecast

Source: Business Central Europe, The Annual Report, 1996

sis that set the country's economic development back by at least a few years.

After a significant decline in GDP growth in the early 1990s, Croatia's economy has begun to recover. In 1996, GDP increased by 5 percent, and its growth is expected to continue at 6 percent in 1997. However, this mainly reflects a return to normal conditions upset by the break-up of former Yugoslavia and by high military spending. The average inflation rate was approximately 100 percent in 1994, its highest level. Since then the government has been successful in controlling inflation and stabilizing it at around 4 percent. Unemployment, which was more than 15 percent in 1996, is expected to fall slightly in 1997. As a result of lost markets in Central and Eastern European countries and the ongoing unrest in Bosnia and Herzegovina, Croatia's exports are currently focused on developed countries, especially those of the EU. Exports have increased only slightly, from USD 4.2 billion in 1994 to USD 4.8 billion in 1996. However, during the same period imports increased from USD 4.7 billion to USD 7.8 billion, and this increase substantially widened the country's trade deficit. Germany, Italy, Slovenia and Austria are currently the main trading partners with Croatia.

3.3 Overview of the Environmental Market

ENVIRONMENTAL EXPENDITURES

Because of the unfavorable economic situation, followed by the introduction of restrictive controls on total income and strict limits on the establishment of funds for specific purposes, environmental investments are comparatively low in Croatia. The State Directorate for Environment roughly estimated the total was USD 152 million in 1995. However, this figure has to be taken with caution because comprehensive data on environmental expenditures is not collected in Croatia, and it can be assumed that non-environmental expenditures are included in this figure.

Environmental funding is very limited in Croatia, and in general it is extremely difficult to obtain funds from the central budget. There are no environmental funds established on the state or the regional level, either. The only fund in the country currently related to environmental investment is the water fund, which deals with water management activities and related projects and operates by collecting fees for water pollution and consumption charges. Spending from the private sector also is estimated to be very low compared to other countries.

Because of the recent political upheaval, Croatia is not

involved with the main foreign assistance programs (e.g. the PHARE Programme). However, funding is still required to establish a monitoring system for air and water, to develop projects for solid and hazardous waste management, to clean up the main polluted rivers and the Adriatic Sea, and to reconstruct water supply and sewage networks.

The environment is not treated as a priority by either the government or the public. This is evident in the small amount of environmental funding derived from state or municipal budgets.

STATE ENVIRONMENTAL FUNDS

Croatia does not currently operate a state environmental protection fund, nor do such funds exist on regional or local levels.

ENVIRONMENTAL PRIORITIES

Croatia's environmental situation is to some extent different from that of other Central and Eastern European countries. On one hand, the wartime destruction of chemical plants, oil refineries and numerous water and wastewater networks increased the environmental problems. On the other hand, the closure of heavily damaged polluting industrial plants improved the environmental situation.

Of four surveyed countries, the government of Croatia is giving the least attention to environmental protection issues. Environmental priorities are currently set without any comprehensive strategy and instead are mainly in response to the most pressing environmental problems causing threats to human health.

However, over the past few years some priority was given to the quality and availability of environmental information. The State Directorate for Environmental Protection has established an Information System for the Environment program designed to support decisionmaking in environmental regulation and protection. The system contains information on pollution levels, selected information on the state of the environment, expert and scientific information from various institutions and documentation and information related to environmental protection issues. Furthermore, priority was given to the protection of sea and surface water, consistent with the fact that the most extensive parts of environmental legislation are dedicated to water protection issues.

One of the major environmental problems facing Croatia is still a lack of proper waste management. Municipal and industrial waste is dumped on open dumpsites, jeopardizing soil and groundwater. The problem mainly stems from the lack of appropriate landfill sites, incomplete legislation and illegal dumping of all kinds of waste.

The major direct environmental investments so far have focused on water protection issues and include the construction of sewage systems and wastewater treatment facilities. In the future, major spending can be expected on waste management projects and perhaps air and nature protection. However, the lack of accurate data makes it extremely difficult to predict the magnitude of spending that is likely to take place.

LEGISLATION AND ENFORCEMENT

In 1994, a new environmental protection law was passed by the Croatian parliament stating the main goals and principles of environmental protection in the country. Issues outlined in the environmental protection law include:

- institutionalization of environmental protection at national and local levels;
- environmental impact assessment procedures;
- the environmental information system, environmental

monitoring and pollution inventory;

- earmarked funds and other funds to finance environmental protection;
- polluter pays principle;
- methods for environmental monitoring and inspection;
- obligation to develop environmental strategies, policies and programs; and
- environmental protection measures that encourage the use of environmentally sound products and technologies.

To date there is sufficient institutional capacity only in a few environmental areas, and few specific regulations and standards have been implemented. In particular, the most comprehensive regulations can be found in the fields of water protection and environmental impact assessment. Besides specific environmental regulations, there are more than 400 regulations relating to the environment but with little coverage of environmental issues. In addition, national environmental protection issues are also incorporated in the Physical Plan and in several sectoral strategies, such as the Strategy for Water and the Agricultural Strategy.

In general, the legislative basis of environmental protection is fragmented, does not address specific urgent problems, and lacks regulatory coordination. There are also major gaps in regulations, and a large part of the regulations are inappropriate or outdated. In particular, there is a lack of systematic environmental monitoring, and the clear definitions of rights, liabilities, responsibilities, control, financing and charges. Overall, environmental regulation is weak, and major improvements will be required to bring the country up to date with current EU standards.

In short, the lack of comprehensive environmental regulations and the insufficient enforcement of existing legislation seriously hinder the development of Croatia's environmental business sector.

ENVIRONMENTAL ADMINISTRATION

As part of the reorganization of the national administrative bodies, the State Directorate for Environmental Protection was established in 1994. All the duties previously handled by the Ministry of Civil Engineering and Environmental Protection were transferred to the State Directorate.

In general, the State Directorate for Environmental Protection has the main responsibility of coordinating environmental activities, but its activities are hindered by a low operational budget and a lack of support from other related ministries. Also, many problems arise because the State Directorate operates at a lower level than the ministries, resulting in difficulties of coordination among the various bodies.

Under the existing administrative scheme, most environmental protection issues are handled at the national level. Municipalities have authority mainly over local environmental protection issues and physical planning. Monitoring and enforcement of laws and regulations is carried out by the local governments and state inspectorates. The Environmental Law contains numerous measures an inspector in charge may undertake to ensure compliance. However, the level of enforcement is still inconsistent, and pollution fines are too low to change the behavior of the polluting industries, especially state-owned companies.

There are also specialized agencies that deal with environmental protection issues and are organized as public companies, such as the Croatian Hazardous Waste Management Agency (APO), the Waste Management and Environmental Protection Agency and the Energy Research and Environmental Protection Institute (EKONERG).

TABLE 3.2: AGE OF COMPANIES

<i>Year of Establishment</i>	<i>% of Respondents</i>
After 1992	12%
1990-1992	44%
1980-1989	11%
Before 1980	33%

TABLE 3.3: OWNERSHIP STRUCTURE OF ENVIRONMENTAL BUSINESSES

<i>Ownership</i>	<i>% of Respondents</i>
Privately owned	81%
State owned	6%
State and privately owned	8%
In process of privatization	5%

3.4 Profile of the Environmental Business Sector

The recent war and a lack of government commitment to the environment have slowed the development of Croatia's environmental business sector. It is estimated that fewer than 200 companies provide environmental services or technologies. As shown in Table 3.2, most of the companies are young — 44 percent of them were established between 1990 and 1992. Only 12 percent of the companies were established after 1992, evidence of the negative impact the war had on the development of the environmental business sector. Almost all of the environmental businesses founded after 1990 are privately owned. From the 141 surveyed companies, 81 percent are privately owned, the highest share of private ownership of the four surveyed countries. Six percent of companies are state-owned and 5 percent are currently state owned but in the process of privatization. Table 3.3 shows the ownership breakdown.

As shown in Table 3.4, Croatian companies are generally outfitted with all types of modern office equipment. Telephone, personal computers, fax machines and printers are standard equipment in the firms surveyed. All of the companies surveyed are equipped with phone lines. Interestingly, 65

TABLE 3.4: OFFICE EQUIPMENT USED

<i>Office Equipment</i>	<i>% of Respondents</i>
Telephone	100%
Personal computer	93%
Fax	98%
Printer	92%
Photocopier	78%
Modem	45%
Cellular phone	65%
Mainframe computer	40%
E-mail	20%
On-line services connection	19%
Telex	18%
GIS computer	6%

TABLE 3.5: EMPLOYEES INVOLVED IN ENVIRONMENTAL ACTIVITIES

<i>Number of Employees</i>	<i>Full-time Workers</i>	<i>Part-time/ Contractors</i>
Up to 5	53%	–
6-10	17%	70%
11-20	14%	20%
21-50	8%	5%
More than 50	8%	5%

percent of respondents use cellular phones, and one out of five has an e-mail connection.

For the most part, environmental companies in Croatia are small. More than half of the companies surveyed employ fewer than five full-time employees, while only 8 percent employ more than 50 full-time workers. The breakdown is shown in Table 3.5.

The surveyed companies listed annual environmental revenues exceeding USD 99 million in 1995. However, this only represents approximately 70 percent of the market because only 118 of the 141 surveyed companies responded to these questions. The breakdown of companies by amount of revenue in 1995 is shown in Table 3.6.

More than half of the total revenues of the surveyed companies were derived from technical services, followed by 30 percent from the manufacture of environmental technologies and 14 percent from testing and monitoring. The breakdown of revenues by activity is shown in Table 3.7.

Analysis by media showed that the highest portion of income was received from waste-related activities (40 percent), followed by water and wastewater-related activities and air and energy related activities. Other activities, such as industrial noise and safety, EMS, EIA, etc., accounted for 17 percent of total annual revenues. The breakdown of revenues by media is shown in Table 3.8.

Joint-ventures are more common in Croatia than in the other three countries surveyed — 14 percent of the survey respon-

TABLE 3.6: BREAKDOWN OF COMPANIES BASED ON REVENUES FROM ENVIRONMENTAL ACTIVITIES IN 1995

<i>Revenues (USD)</i>	<i>% of Respondents</i>
Less than 100,000	47%
101,000-250,000	12%
251,000-500,000	10%
501,000-1 million	10%
1 million-5 million	16%
More than 5 million	5%

TABLE: 3.7 BREAKDOWN OF REVENUES BY ACTIVITY

<i>Activity</i>	<i>% of Revenues</i>
Technical services	51%
Environmental technologies	30%
Testing, monitoring and laboratory	14%
Others	5%

TABLE 3.8: BREAKDOWN OF REVENUES BY MEDIA

<i>Media</i>	<i>% of Revenues</i>
Water and wastewater	29%
Waste	40%
Air	7%
Energy	7%
Other (not media specific)	17%

dents in Croatia had a joint-venture with a foreign company. The countries of the top three joint-venture partners were Germany and the United States (four joint-ventures each) and Austria (three joint-ventures). The three main foreign languages spoken by business representatives were English, German and Italian.

3.5 Information Channels for Business Opportunities

Environmental professionals receive business information mainly through personal contacts, from fairs and trade shows and from environmental publications. Other major information sources included the State Directorate for the Environment, the daily press and local authorities. Professional associations and the Chamber of Commerce were mentioned by approximately 40 percent of the respondents as information sources. Table 3.9 shows the percentage of survey respondents who said they receive information about business opportunities through the listed channels.

Conference attendance received moderate response as a way to receive business information, and, as Table 3.10

TABLE 3.9: MOST IMPORTANT CHANNELS OF INFORMATION ABOUT BUSINESS OPPORTUNITIES

<i>Information Channel</i>	<i>% of Respondents</i>
Personal contacts	97%
Trade shows and fairs	68%
Environmental publications	63%
Environmental Ministry (state directorate)	56%
Daily press	56%
Local authorities/municipalities	55%
Conference attendance	46%
Business publications	43%
Chamber of Commerce	42%
Direct mail	41%
Professional associations	40%
Ministry of Economics/Trade	28%
University/Academy of Sciences	26%
International organizations	23%
Broadcast fax service	18%
E-mail	8%
Commercial banks	7%

TABLE 3.10: ANNUAL CONFERENCE ATTENDANCE

<i>Number of Conferences Attended Annually</i>	<i>% of Respondents</i>
None	17%
1-2	42%
3-5	35%
6-10	4%
More than 10	2%

TABLE 3.11: MAIN REASONS FOR ATTENDING CONFERENCES

<i>Reason</i>	<i>% of Respondents</i>
Meet others in the same field	69%
Learn about new project opportunities	66%
Marketing firms products	56%
Find potential partners	56%
Participate in professional training	55%
Participate as speaker	32%

shows, 41 percent of the respondents participated in more than 3 conferences annually. As shown in Table 3.11, the major reasons for attendance were to meet others in the same field, to learn about new project opportunities, to market a firm's products, to find potential partners and to participate in professional training.

The top environmental publications reach a fairly broad audience in Croatia. The most popular environmental publication, *Gospodarstvo i Okolis*, is read by 38 percent of environmental business professionals. Readership of other environmental publications is shown in Table 3.12.

Business publications had a slightly lower readership among environmental business professionals, and the top business periodicals did not reach a particularly broad audience in this field. The most widely read business publication was *Banka* (read by 16 percent of survey respondents), followed by *EGE* (read 8 percent). Readership of business publications is shown in Table 3.13.

The top two newspapers read by survey respondents were *Vecernji* and *Vjesnik*, each read by 23 percent of respondents. Readership of newspapers is shown in Table 3.14.

Environmental professionals were also asked to name the most important business associations. Associations commonly mentioned included the Croatian Water Pollution Control Society, the Croatian Association of Energy Experts, and the Association of Recyclers. The list of associations is shown in Table 3.15.

3.6 Information and Training Needs

Croatia's environmental professionals were asked to rank the information topics which are most important for their business development. Information on in-country environmental regulations was considered very important by 70 percent of the respondents, followed by information on domestic environmental problems (54 percent), information on where to find domestic partners (48 percent) and sources of project financing (48 percent). The results of the rankings are shown in Table 3.16.

TABLE 3.12: READERSHIP OF ENVIRONMENTAL PUBLICATIONS

<i>Publication</i>	<i>% Who Read</i>
<i>Gospodarstvo i Okolis</i>	38%
<i>Okolis</i>	21%
<i>Hrvatske Vode</i>	16%
<i>Zubor</i>	10%
<i>EGE</i>	6%
<i>Atmospheric Environment</i>	3%
<i>Energetika</i>	3%
<i>Europe Environment</i>	3%

TABLE 3.13: READERSHIP OF BUSINESS PUBLICATIONS

<i>Publication</i>	<i>% Who Read</i>
<i>Banka</i>	16%
<i>EGE</i>	8%
<i>Info</i>	3%
<i>Kapital</i>	3%
<i>RRIF</i>	2%
<i>Economist</i>	2%
<i>Profit</i>	2%
<i>Info</i>	2%

TABLE 3.14: READERSHIP OF NEWSPAPERS

<i>Newspaper</i>	<i>% Who Read</i>
<i>Vecernji List</i>	23%
<i>Vjesnik</i>	23%
<i>Slobodna Dalmacija</i>	4%
<i>Privredni Vjesnik</i>	1%
<i>Nacional</i>	1%

TABLE 3.15: MOST IMPORTANT PROFESSIONAL ASSOCIATIONS

<i>Association</i>	<i>% of Respondents</i>
<i>Croatian Water Pollution Control Society</i>	10%
<i>Croatian Association of Energy Experts</i>	4%
<i>Association of Recyclers</i>	4%
<i>Drzavna uprava za zastitu okolisa</i>	3%
<i>Hrvatska Gospodarska Komora</i>	3%

As shown in Table 3.17, the preferred delivery options for this information were a regular newsletter, conferences to address specific environmental problems and local business coordinators. Sixty-five percent of the respondents were willing to pay for a regular newsletter with updated

TABLE 3.16: IMPORTANCE OF SELECTED ENVIRONMENTAL INFORMATION

<i>Environmental information</i>	<i>Rating</i>
Information on where to find domestic partners	3.7 (48)
Domestic environmental regulations	3.6 (70)
Domestic environmental problems	3.3 (54)
Sources of project financing	3.2 (48)
New environmental technologies	3.2 (41)
EU environmental regulations	3.1 (44)
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	3.1 (43)
Eco-efficient and cleaner production practices	3.1 (36)
Certification requirements for environmental professionals	3.0 (43)
Domestic tenders for projects	3.0 (40)
Information on finding international partners	2.9 (37)
Announcements of domestic conferences or trade fairs	2.8 (30)
Contact information to government agencies	2.7 (26)
Announcements of international conferences or trade fairs	2.5 (22)
International environmental problems	2.4 (22)
International tenders for projects	2.3 (16)

Note: The following scale was used for the rating: 4 - very important, 3 - important, 2 - somewhat important, 1 - not important. Numbers in brackets indicate the percentage of respondents rated the information as very important.

project information. Also 57 percent were willing to pay for conferences, and 54 percent were willing to pay for a local business coordinator.

In the area of professional training, environmental regulations and policy was ranked as most important by environmental professionals, followed by training on environmental systems and their sustainability, environmental impact assessment and financing environmental investments. Interest in various training topics is presented in Table 3.18.

TABLE 3.18: INTEREST IN PROFESSIONAL TRAINING

<i>Type of Training</i>	<i>Rating</i>
Environmental regulation and policy	3.2 (40)
Environmental systems and their sustainability	3.1 (40)
Environmental impact assessment	3.0 (34)
Financing environmental investments	3.0 (36)
Integrated solid waste management	2.9 (29)
Project management	2.8 (28)
Environmental risk assessment	2.8 (23)
Environmental management	2.7 (22)
Environmental economics	2.7 (19)
Strategic planning	2.6 (24)
Hazardous waste site ranking	2.6 (21)
Environmental auditing	2.6 (16)
GIS (Geographic Information Systems)	2.3 (14)

Note: The following scale was used for the rating: 4 - very interested, 3 - interested, 2 - somewhat interested, 1 - not interested. Numbers in brackets indicate the percentage of respondents who were very interested in a training subject.

3.7 Assistance and Barriers to Business Development

Business and industrial associations were considered important sources of support to environmental businesses by 64 percent of the survey respondents. Financial institutions were ranked as important by 56 percent. However, as shown in Table 3.19, fewer than half of the survey respondents viewed the government and scientific institutions as important sources of assistance and only a third considered international organizations to be an important source of assistance.

The bulk of environmental professionals in Croatia (77 percent) viewed limited access to credit and finance as a barrier to their business development. Tax regulation and market demand for products and services were also widely indicated as obstacles companies face. Environmental regulation was viewed by 42 percent of the respondents as a barrier, while for-

TABLE 3.17: USEFULNESS OF SELECTED INFORMATION DELIVERY OPTIONS

<i>Delivery Option</i>	<i>Rating</i>	<i>% Willing to Pay</i>
Regular newsletter	3.0 (25)	65
Conferences arranged to address specific environmental problems	2.9 (29)	57
Local business coordinator to arrange meetings, contacts and workshops	2.9 (25)	54
Partnering workshops designed to introduce you to Western partners, government environmental officials and NGOs	2.8 (31)	46
Environmental Business Directory (CD diskette)	2.7 (21)	50
Environmental Business Directory (book)	2.7 (19)	54
Computer database of information resources available on the Internet	2.6 (21)	42
Information research service providing specific information	2.6 (12)	47
Broadcast fax service	2.4 (9)	35

Note: The following scale was used for the rating: 4 - very useful, 3 - useful, 2 - somewhat useful, 1 - not useful. Numbers in brackets indicate the percentage of respondents who rated the delivery option as very useful.

TABLE 3.19: IMPORTANCE OF SELECTED SOURCES OF ASSISTANCE

<i>Institutions/ Organizations</i>	<i>Responses for “Very Important” or “Important”</i>
Business or industrial associations	64%
Financial institutions	56%
Government	49%
Scientific or academic institutions	44%
Professional training institutions	38%
International organizations	34%

TABLE 3.20: PERCEIVED BARRIERS TO BUSINESS DEVELOPMENT

<i>Barriers to Development</i>	<i>Responses for “Major Barrier” or “Barrier”</i>
Access to credit and finance	77%
Tax regulation	59%
Market demand for products and services	55%
General access to information	47%
Environmental regulations	42%
Legal regulation and registration requirements	33%
Foreign competition	22%

Foreign competition was considered a barrier to business development by only one out of five professionals. The perceived barriers to business development are presented in Table 3.20.

Chapter 4: Romania

4.1 Summary of Findings

In 1995, spending on environmental protection in Romania totaled USD 211 million, or 0.6 percent of the country's gross domestic product. The main sources of funds for environmental projects were private and state-owned enterprises (60 percent) and the state budget (40 percent). Romania does not currently operate a state environmental protection fund.

The largest portion of environmental spending was allocated to air pollution control (41 percent), followed by water and wastewater projects (32 percent) and waste management-related activities (20 percent). The remaining 7 percent was spent on other projects, primarily the national monitoring system.

The environmental business sector in Romania is small and young. It is estimated that fewer than 200 business provide environmental services and technologies (122 were included in this survey), and 69 percent of the companies were established after 1990. More than two-thirds of the companies were privately owned, although a significant share (22 percent) were state owned. The remaining companies were either in the process of privatization or under some combination of state and private ownership.

With 11 percent of environmental businesses involved in joint-ventures with foreign firms, Romania has the second lowest occurrence of foreign partnerships of the surveyed countries. Partners for Romanian joint-ventures come mainly from Germany, France and the United States.

Total annual environmental revenues from the 82 companies that provided financial data exceeded USD 38 million in 1995. Half the income was generated from technical services, followed by the sale of environmental technologies (26 percent) and testing and monitoring activities (10 percent). The other 14 percent of total revenues came from research, training and education.

When the total revenues are broken down by media, the largest share was generated from water and wastewater activities (46 percent), followed by waste-related activities (19 percent), air pollution control (13 percent) and energy-related activities (12 percent). The remainder was generated by other activities, including industrial safety and noise reduction, environmental impact assessment and soil and land activities.

As in the other surveyed countries, no effective formal channels exist to provide information on project opportunities. Personal and professional contacts, direct mail, the daily press, environmental publications, the Ministry of Environment, local authorities and fairs and trade shows are among the primary sources for information about business opportunities. Professional associations, such as the chamber of commerce, and the Academy of Sciences are not seen as major information sources or as effective lobbying groups for the environmental business sector.

Romania's environmental professionals showed high interest in information regarding domestic environmental regulations, finding domestic partners, new environmental technologies, domestic tenders for projects, domestic environmental problems, and environmental quality standards for industries.

More than half of the respondents showed high interest in an environmental business directory and a regular newsletter containing updated information on project opportunities, technologies and financing. Half the respondents would be

willing to pay for such information products. Other information delivery options in high demand included a broadcast fax service and an information research service providing specific environmental information.

Professional environmental training was requested particularly on environmental impact assessment, environmental economics, environmental auditing, environmental regulation and policy and environmental management.

There was no indication of a major institution that provides widespread support or assistance to environmental companies in Romania. Business and industrial associations and professional training institutions were the most commonly named sources of assistance, but they were only mentioned by 31 percent and 30 percent of respondents, respectively.

Legal regulations and registration requirements were seen as the largest barrier to business development in Romania and were mentioned by 70 percent of survey respondents. Other barriers mentioned by more than half of the survey respondents were access to credit and finance, general access to information, and low market demand for environmental products and services.

4.2 Introduction

POLITICAL SITUATION

In November 1996, the political landscape in Romania changed significantly as a result of the Parliamentary election victory of the main opposition party, the Romanian Democratic Convention (CDR). The CDR now leads a coalition government, which also includes the Social Democratic Union (USD) and The Hungarian Democratic Union of Romania (UDMR). The elections also brought in a new president, who is the leader of the CDR.

Since then, the new government has announced a strong stabilization and liberalization program involving a reduction of the fiscal deficit, the liberalization of the foreign exchange market, accelerated structural reforms and support for European and Euro-Atlantic integration. Although the French government adamantly supported Romania's initiative to be included in the first round of NATO enlargement, Romania was not invited to join.

Despite continued economic troubles at the end of 1996, the democratic changes and the newly launched government program against corruption brought the sympathy of the international community and the opportunity for the new administration to bring about radical and rapid reform. In January 1997, international bodies such as the IMF, the World Bank, the EBRD and the European Commission expressed strong support for Romania's reform program.

ECONOMIC SITUATION

After years of an economic uncertainty, Romania seems ready to begin a solid economic recovery. Inflation decreased from 137 percent in 1994 to about 30 percent in 1995 and 1996. Unemployment decreased from almost 11 percent in 1994 to 8.5 percent in 1996. However, GDP growth slowed from 6.9 percent in 1995 to 4.5 percent in 1996. One of the biggest

TABLE 4.1: KEY ECONOMIC INDICATORS

	1994	1995	1996*	1997*
GDP growth (%)	4.0	6.9	4.5	5.0
Inflation (%)	137	32	30	30
Unemployment (%)	10.9	8.9	8.5	7.5
Exports (bln USD)	6.15	7.52	7.80	8.20
Imports (bln USD)	7.11	9.41	9.00	9.10
Budget balance (% of GDP)	-1.8	-3.5	-3.0	-4.0
Gross debt (bln USD)	3.4	4.8	5.4	n/a

* projected

Source: Business Central Europe, The Annual Report, 1996

problems of the Romanian economy is that relatively little progress has been made in restructuring the country's heavy industries, which are not profitable and are a major financial burden for the government.

The privatization of state-owned companies has been particularly slow, although the "Acceleration of Privatization" law approved by the Parliament in March 1995 is supposed to speed up large-scale and medium-scale privatization in the coming years. Nonetheless, unemployment is expected to rise due to the privatization efforts. Other major obstacles to business development in Romania are continually high taxes, a lack of clear market rules and information, and to some extent, corruption.

The present government has set a number of other goals as part of its plan to rebuild the economy. These goals include liberalizing imports and reducing import duties; promoting exports; lowering energy prices; reforming the financial markets, including privatization of state-owned banks; reforming the agricultural sector; promoting small and medium-sized enterprises; developing infrastructure; and creating a legal and tax framework that is favorable to investors. A reduction in taxes is also foreseen. Implementation of these reforms should benefit the environmental market.

4.3 Overview of the Environmental Market

ENVIRONMENTAL EXPENDITURES

The two major sources of environmental investments in Romania are private investments and allocations from the state budget. If the proposed decentralization of state spending is approved, other investment sources will emerge (e.g. a national environmental protection fund and local municipalities). According to the National Center for Statistics and other sources, total annual environmental expenditures remained constant at around 0.6 percent of GDP between 1993 and

TABLE 4.2: TOTAL ENVIRONMENTAL EXPENDITURES, 1993-1996

Year	Environmental expenditures (mln USD)	Share of GDP
1993	157.7	0.6%
1994	170.8	0.6%
1995	210.6	0.6%
1996	201.9	0.6%

Source: Environment Protection Strategy, Ministry of Waters, Forests and Environmental Protection (MWFEP), Bucharest, 1996; and MWFEP Report, 1997

1996. In 1996, total environmental investments amounted to more than USD 200 million. However, the amount of environmental investment in Romania is very low compared to the EU level, and the situation is worsened by the lack of economic instruments. It should be also noted that Romania will require massive environmental investment by both the government and industries to comply with EU standards.

In 1994 and 1995, government environmental expenditures accounted for 2.7 percent of the state budget. At that time, the state funds accounted for approximately 57 percent of total environmental spending. However, in 1996 the state budget's share decreased to 40 percent of total expenditures, or USD 80.7 million. The remaining USD 121 million came from the private sector and from municipalities. The investments from private enterprises were directed strictly toward pollution control and prevention, and investments from the State Budget were directed mainly toward water and forest management.

Government spending on the environment is expected to continue its decline in the coming years. The cabinet of the new coalition government stated that environmental funding from the state budget "will be reduced significantly through the introduction of economic reforms such as price liberalization, fiscal and monetary reforms, privatization, etc."

STATE ENVIRONMENTAL FUND

The only fund currently devoted to environmental protection issues is the Water Fund, which is used mainly to finance investments in wastewater treatment, discharge control equipment and other water- and wastewater-related investments. However, this fund does not provide sufficient financial resources to finance the most urgent water-related projects.

Although Romania does not currently operate any broad environmental protection funds, the new government has announced plans to create an environmental fund as a basic instrument to implement the national environmental policy. Economic instruments such as user fees, disposal charges and non-compliance fines would generate income for the fund. In

TABLE 4.3: SOURCES OF ENVIRONMENTAL EXPENDITURES, 1993-1996 (MLN USD)

Source of Funds	1993	1994	1995	1996
State Budget	90.9 (58)	96.6 (56)	119.9 (57)	80.7 (40)
Private Sector/Municipalities	66.8 (42)	74.2 (44)	90.7 (43)	121.2 (60)
Total	157.7	170.8	210.6	201.9

Note: Number in brackets indicates the share of total environmental expenditure

Source: Environment Protection Strategy, Ministry of Waters, Forests and Environmental Protection

this way, the protection of the environment would not compete with other social programs for scarce resources from the national budget.

The Romanian Environmental Protection Law, a second generation framework law which adopts the principles of precaution, polluter pays and public participation, was passed in December 1995. Among the provisions concerning the creation of the environmental fund was a section stating that the existing Ministry of Waters, Forests and Environmental Protection was not prepared to manage such funds.

Based on data from the Romanian National Commission for Statistics and the Ministry of Finance, the OECD estimated in 1995 that revenues from the proposed Romanian environmental fund for 1997 could amount to USD 53 million. The bulk of the income would come from charges for industrial water and from a 1 percent surcharge on the sale of fuel.

ENVIRONMENTAL PRIORITIES

Romania's environment faces severe problems with regard to water quality, waste management and air and soil pollution. In general, the quality of drinking water and of groundwater is not satisfactory, and the level of sewage treatment is low. Pollution that affects surface water and groundwater is mainly caused by untreated municipal and industrial wastewater and by nitrates spread by intensive farming. Furthermore, the treatment and disposal of waste is a major concern that reflects the weakness of existing waste regulations. In fact, waste management legislation does not exist, and the concept of hazardous waste management has not been introduced. Air pollution is also a big problem in larger cities and industrial areas and is caused mainly by heavy emissions from the energy, chemical, paper, mining and transport sectors, as well as from domestic heating. Improvements in the past have resulted mainly from decreasing economic activities and partly from remediating "hot spot" areas.

Clearly, up to now the environmental problems facing Romania have not been addressed. The main obstacle to implementing environmental projects is still the lack of financing. The low amount of environment investments is primarily due to a lack of environmental financing instruments.

According to the governing program of the new coalition cabinet, the future policy regarding natural capital will be "stable and predictable" and will address "both past and new responsibilities for the environment." The environmental policy has not yet been detailed as such, but can be found in the restructuring of the economy chapter of the government's program.

The following priorities have been highlighted as "policies toward the use of natural capital": development of an extensive monitoring system; studies to identify the real cost of environmental factors; production of management plans for highly polluted areas; introduction of environmental standards and development of professional accreditation; enforcement of environmental regulations; definition of environmental priority areas for public investments; use of economic instruments such as environmental taxes, environmental funds, etc. for stimulating a better use of natural capital; introduction of waste management systems; involvement of NGOs; and encouragement of partnerships.

The environmental protection strategy presented in 1996 by the former representatives of the Ministry of Waters, Forests and Environmental Protection (MWFEP) is still the only valid reference related to environmental priorities and mentions the following strategies and priorities:

Short-term objectives (before 2000)

- reducing by 20-30 percent the emissions in the 14 "hot spots"
- reducing sulfur dioxide and nitrogen emissions by 20 per-

TABLE 4.4: ENVIRONMENTAL EXPENDITURES BY MEDIA, 1995

<i>Media</i>	<i>% of Total Expenditures</i>
Water and wastewater	32%
Waste management	20%
Air pollution control	41%
Others	7%

Source: Environment Protection Strategy, Ministry of Waters, Forests and Environmental Protection, Bucharest, 1996

cent, and chlorine and H₂Cl by 40 percent

- reusing wastes collected from gases and used waters by 10-15 percent
- increasing reuse of solid wastes by 20 percent
- recovering the soils with exhausted capacity deposits of solid residues
- controlling dumping of municipal waste
- irrigating 1.5 million hectares and planting 50,000 hectares of forest belts
- combating soil erosion on 1.5 million hectares used for agriculture
- increasing the forestry area by 200,000 hectares

Medium-term objectives (before 2005)

- reducing by 50 percent the existing water shortage
- improving the quality of surface waters by raising the length of first category rivers to 60-65 percent of total and reducing the length of degraded rivers (D category) to 10-15 percent of total
- diminishing air pollution by 20-30 percent of 1989 levels for SO₂, CO, NH₃, CH₄
- reducing heavy metals pollution by 80 percent
- zero emissions of greenhouse gases affecting the ozone layer (by 2008 for certain gases)
- increasing forestry area by 30 percent
- recovering 70-80 percent of the Danube Delta

Long-term objectives (before 2025)

- reaching living conditions compatible with the standards of advanced countries
- reducing pollution to an acceptable level according to EU standards
- complying with international conventions and agreements

To some extent the priorities set in the short-term strategies also reflect Romania's environmental expenditures. As shown in the Table 4.4, priorities for environmental spending in 1995 were air pollution control technologies, which accounted for almost 41 percent of total spending; water and wastewater-related projects (32 percent); and waste management (20 percent). A significant increase can be expected in waste management as well as water and wastewater investment.

LEGISLATION AND ENFORCEMENT

Romania has many laws for environmental protection, both old and new. However, compliance with these regulations is generally weak, mostly because of poor economic conditions, poor management practices and poor dissemination of informa-

tion. For example, a number of new orders passed by the ministry and implemented by the authorities are still unknown to the public and not yet legal as they have been not published as part of the official government collection of laws, *Monitorul oficial*.

The most important environmental regulation is the Environmental Protection Law (no. 137/1995), passed in December 1995. It is a second generation framework law based on the principles of precaution, polluter pays and public participation. As it is only a framework law, the Environmental Protection Law is complemented by specific laws, government decisions, government orders, ministerial decisions and ministerial orders.

All new laws, governmental decisions, orders of the minister, decisions and standards are drafted in compliance with the EU regulations. Certain provisions and standards of Romanian legislation actually exceed the EU standards.

However, one of the biggest problems with environmental legislation in Romania is the lack of implementation and compliance. This is due to the absence of incentives, weak enforcement, insufficient technology, financial constraints and poor public participation.

Romania is also a signatory party to various international and bilateral environmental conventions and agreements (Ramsar, Basel, Montreal etc.). However, according to legislative experts, there are certain Romanian environmental laws which must be revised in order to fully comply with some of these conventions and agreements.

The following institutions are responsible for enforcement of environmental legislation in Romania:

- environmental protection agencies;
- municipalities;
- local health authorities (health and veterinary police);
- district water authorities (branches of AR);
- district forest authorities (branches of ROMSILVA); and
- the police.

In 1995, an organizational structure was established to deal with EU integration, including law harmonization. This included three separate offices: the Parliamentary Committee for European Integration, the Interministerial Committee for European Integration and the Governmental Department of European Integration.

Compliance with EU requirements will take a long time. Romania's problems are particularly serious in the areas of solid and hazardous waste management, where, except for a draft law currently under consideration, legislation is almost non-existent. The national regulations concerning air pollution are not comprehensive enough to meet EU standards, and major changes are required. Also, safety regulations related to radiation protection and radioactive waste management need to be formulated.

ENVIRONMENTAL ADMINISTRATION

Environmental administration is coordinated on the national, regional and local level in Romania.

In 1990, the Ministry of Environment was established, and in 1992, it was renamed the Ministry of Water Resources, Forests and Environmental Protection (MWFEP). The MWFEP operates 41 Environmental Protection Agencies, one in each county, and the Administration of the Danube River Delta. Furthermore, the autonomous Romanian Water Authority (Apele Romane) operates 10 branches along the major rivers and tributaries; and the autonomous Forest Authority (ROMSILVA) operates 41 branches, again one in each county. Both the Water Authority and the Forest Authority report directly to the MWFEP.

In addition, there are several research institutes that focus on environmental protection: the Institute for Research for Environmental Engineering, the Institute for Maritime Waters, the Institute for Research and Forestry Planning, the Institute for Soil Science and Agro-chemical Research, the Institute for Hygiene and Public Health, and others.

There are also agencies, offices and inspectorates organized by county governments or that function as part of other ministries (e.g. the Ministry of Health, Ministry of Agriculture and Food). Most of the institutions mentioned are involved in licensing discharges to the environment.

4.4 Profile of the Environmental Business Sector

The Romanian environmental business sector comprises almost 200 companies that provide environmental services and technologies. As shown in Table 4.5, most of the companies are quite new — 69 percent were established after 1990, and only 18 percent were established before 1980. Most of the environmental businesses established after 1990 are privately owned. Of the 122 surveyed companies, 68 percent are privately owned and 22 percent are state-owned. Only 4 percent

TABLE 4.5: AGE OF ENVIRONMENTAL COMPANIES

<i>Year of Establishment</i>	<i>% of Respondents</i>
After 1992	24%
1990-1992	45%
1980-1989	13%
Before 1980	18%

TABLE 4.6: OWNERSHIP STRUCTURE OF ENVIRONMENTAL BUSINESSES

<i>Ownership</i>	<i>% of Respondents</i>
Privately owned	68%
State owned	22%
State and privately owned	6%
In process of privatization	4%

TABLE 4.7: OFFICE EQUIPMENT USED

<i>Office Equipment</i>	<i>% of Respondents</i>
Telephone	99%
Personal computer	84%
Printer	83%
Fax	82%
Photocopier	63%
Modem	34%
Telex	29%
Mainframe computer	14%
On-line services connection	14%
E-mail	11%
Cellular phone	10%
GIS computer	4%

TABLE 4.8: EMPLOYEES INVOLVED IN ENVIRONMENTAL ACTIVITIES

<i>Number of Employees</i>	<i>Full-time Workers</i>	<i>Part-time/ Contractors</i>
Up to 5	42%	-
6-10	15%	74%
11-20	11%	17%
21-50	13%	4 %
More than 50	19%	5 %

TABLE 4.9: BREAKDOWN OF COMPANIES BASED ON REVENUES FROM ENVIRONMENTAL ACTIVITIES IN 1995

<i>Revenues (USD)</i>	<i>% of Respondents</i>
Less than 100,000	59%
101,000-250,000	12%
251,000-500,000	15%
501,000-1 million	4%
1 million-5 million	8%
More than 5 million	2%

TABLE 4.10: BREAKDOWN OF REVENUES BY ACTIVITY

<i>Activity</i>	<i>% of Revenues</i>
Technical services	50%
Environmental technologies	26%
Testing, monitoring and laboratory	10%
Other	14%

TABLE 4.11: BREAKDOWN OF REVENUES BY MEDIA

<i>Media</i>	<i>% of Revenues</i>
Water and wastewater	46%
Waste	19%
Air	13%
Energy	12%
Other (not media specific)	10%

of the companies are state-owned companies in the process of privatization, an indication of the slow development of the privatization process in Romania. The breakdown by ownership is shown in Table 4.6.

In general surveyed companies are outfitted with all types of modern office equipment. Telephones, personal computers, printers, and fax machines are standard equipment in the firms surveyed. As shown in Table 4.7, almost all of the companies are equipped with phone lines, but only 11 percent said they have an e-mail connection.

Most of the companies in the survey are small enterprises: 42 percent employ fewer than five full-time workers, and 68

TABLE 4.12: MOST IMPORTANT CHANNELS OF INFORMATION ABOUT BUSINESS OPPORTUNITIES

<i>Information Channel</i>	<i>% of Respondents</i>
Personal contacts	93%
Direct mail	69%
Daily press	63%
Environmental publications	57%
Environmental Ministry	55%
Local authorities/municipalities	54%
Trade shows and fairs	52%
Broadcast fax-service	51%
Professional associations	43%
Conference attendance	42%
Business publications	38%
Chamber of Commerce	35%
University/Academy of Sciences	33%
Ministry of Economics/Trade	26%
International organizations	25%
Commercial banks	12%
E-mail	7%

percent employ fewer than 20 people full time. Still, as Table 4.8 shows, a significant number of the companies (19 percent) are large and employ more than 50 full-time workers.

The total annual environmental revenues reported by the surveyed companies exceeding USD 38 million in 1995, or 30 percent of the estimated market. However, this figure comes from only 82 of the 122 Romanian companies surveyed, as many of the companies did not disclose detailed financial data. The breakdown of companies by amount of revenue in 1995 is shown in Table 4.9.

Half the total revenues generated by the surveyed businesses came from technical services, followed by the manufacture of environmental technologies (26 percent) and testing and monitoring (10 percent). The breakdown of total revenues by activity is shown in Table 4.10.

Analysis by media, shown in Table 4.11, revealed that water and wastewater-related activities generated the largest share of company revenues (46 percent). This was followed by waste-related activities (19 percent), air-related projects (13 percent) and energy-related projects (12 percent).

With regard to cooperation with foreign companies, 11 percent of the environmental businesses surveyed operate a joint-venture with a foreign partner. The largest number of partners involved in joint-ventures with surveyed companies comes from Germany (four joint-ventures), followed by the France and the United States (two joint-ventures each). The main foreign languages spoken by Romanian business representatives are English, French and German.

4.5 Information Channels for Business Opportunities

Personal contacts were considered by Romania's environmental business professionals as the most important source of information regarding business opportunities, followed by materials received through the mail and from the daily press. As shown in Table 4.12, other major sources include environmen-

TABLE 4.13: ANNUAL CONFERENCE ATTENDANCE

<i>Number of Conferences Attended Annually</i>	<i>% of Respondents</i>
None	10%
1-2	35%
3-5	33%
6-10	10%
More than 10	12%

TABLE 4.14: MAIN REASONS FOR ATTENDING CONFERENCES

<i>Reason</i>	<i>% of Respondents</i>
Meet others in the same field	75%
Learn about new project opportunities	74%
Participate in professional training	68%
Participate as speaker	61%
Find potential partners	59%
Marketing of firm's products	43%

tal publications; the Ministry of Water Resources, Forests and Environmental Protection; local authorities; and fairs and trade shows. Professional associations and the chamber of commerce were seen as important information sources by only 43 and 35 percent, respectively. Also, only a third of respondents viewed the Academy of Sciences or the Ministry of Economics as important channels for business opportunities.

Table 4.13 shows that more than half of the surveyed environmental professionals participated in more than three conferences annually, even though only 42 percent of survey respondents indicated conference attendance as an important source for finding out about business opportunities. As shown in Table 4.14, other major reasons cited for attending conferences included meeting people in the same field, learning about new project opportunities and receiving professional training.

When asked to name the most important professional associations, survey respondents most often mentioned the Association of Environmental Businesses, the Association of Engineers and the Association of Hydrogeologists. Top professional associations are listed in Table 4.15.

The top three environmental publications read by respondents are *Mediul Inconjurator*, *Protectia Mediului* and

TABLE 4.16: READERSHIP OF ENVIRONMENTAL PUBLICATIONS

<i>Environmental Publication</i>	<i>% Who Read</i>
<i>Mediul Inconjurator</i>	11%
<i>Protectia Mediului</i>	7%
<i>Hidrotehnica</i>	8%
<i>Terra XXI</i>	7%
<i>Buletin de informare Curenta</i>	6%
<i>Jurnalul Naturii</i>	4%
<i>Waste Management of Environment</i>	3%
<i>Environmental Engineering Works</i>	3%

TABLE 4.15: MOST IMPORTANT PROFESSIONAL ASSOCIATIONS

<i>Association</i>	<i>% of Respondents</i>
Association of Environmental Businesses	10%
Associations of Engineers from Romania	6%
Association of Hydrogeologists from Romania	3%
Association of Environmental Engineers	3%
Romanian Society of Chemistry	3%

Hidrotehnica. The main newspapers read by the respondents are *Romania Libera* and *Adevarul*, and the top business publications mentioned are *Capital*, *Tribuna Economica* and *Bursa*. Readership figures are presented in tables 4.16-4.18.

4.6 Information and Training Needs

With regard to needed information, 60 percent of Romania's environmental businesses ranked information on environmental regulations as very important for their business development. Also considered very important by 58 percent of the survey respondents was information on where to find domestic partners. Updates on new environmental technologies and on tenders for projects were both considered very important by 48 percent of respondents. Information on environmental quality standards for industries (ISO 14000 and EMAS) and specific in-county problems were listed as very important by 46 and 43 percent, respectively. Surprisingly, information on project financing, EU environmental regulations, certification requirements and announcement of domestic conferences and trade fairs were considered as very important by only a third of business professionals. The results of the rankings are shown in Table 4.19.

TABLE 4.17: READERSHIP OF NEWSPAPERS

<i>Newspaper</i>	<i>% Who Read</i>
<i>Romania Libera</i>	12%
<i>Adevarul</i>	10%
Local daily	8%
<i>Vocea Romaniei</i>	8%
<i>Evenimentul Zilei</i>	7%

TABLE 4.18: READERSHIP OF BUSINESS PUBLICATIONS

<i>Business Publication</i>	<i>% Who Read</i>
<i>Capital</i>	34%
<i>Tribuna Economica</i>	13%
<i>Bursa</i>	7%
<i>Lumea Afacerilor</i>	7%
<i>Revista Economica</i>	7%
<i>Adevarul Economic</i>	7%
<i>Idei de Afaceri</i>	5%
<i>Business Central Europe</i>	5%

TABLE 4.19: IMPORTANCE OF SELECTED ENVIRONMENTAL INFORMATION

<i>Environmental information</i>	<i>Rating</i>
Domestic environmental regulations	3.2 (60)
Information on where to find domestic partners	3.1 (58)
New environmental technologies	2.9 (48)
Domestic tenders for projects	2.9 (48)
Domestic environmental problems	2.9 (43)
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	2.8 (46)
Announcements of domestic conferences or trade fairs	2.7 (33)
Sources of project financing	2.6 (34)
EU environmental regulations	2.6 (34)
Certification requirements for environmental professionals	2.5 (35)
Information on where to find international partners	2.5 (30)
Eco-efficient and cleaner production practices	2.4 (24)
Contact information to government agencies	2.3 (28)
International environmental problems	2.2 (17)
International tenders for projects	2.1 (17)
Announcements of international conferences or trade fairs	2.1 (17)

Note: The following scale was used for the rating: 4 – very important, 3 – important, 2 – somewhat important, 1 – not important. Numbers in brackets indicate the percentage of respondents who rated the information as very important.

The most preferred delivery option for this information was a printed environmental business directory, mentioned as a very useful delivery product by 55 percent of respondents. Table 4.20 shows that other options considered useful were regular newsletters (very useful to 45 percent of respondents) and a broadcast fax service (very useful to 44 percent).

When asked about topics for professional training, 57 percent of the surveyed environmental business professional said

TABLE 4.21: INTEREST IN PROFESSIONAL TRAINING

<i>Type of Training</i>	<i>Rating</i>
Environmental impact assessment	3.0 (57)
Environmental economics	2.7 (39)
Environmental auditing	2.5 (38)
Environmental regulation and policy	2.4 (33)
Environmental management	2.4 (30)
Strategic planning	2.3 (28)
Financing environmental investments	2.3 (28)
Environmental risk assessment	2.3 (24)
Environmental systems and their sustainability	2.3 (29)
Project management	2.2 (25)
Hazardous waste site ranking	2.2 (25)
Integrated solid waste management	2.1 (20)
GIS (Geographic Information Systems)	2.1 (16)

Note: The following scale was used for the rating: 4 – very interested, 3 – interested, 2 – somewhat interested, 1 – not interested. Numbers in brackets indicate the percentage of respondents who are very interested in a particular training.

they were very interested in training on environmental impact assessment, and about a third showed high interest in environmental economics, environmental auditing, environmental regulations and policy and environmental management. Only one in four respondents was interested in training on financing environmental investments or on project management. Interest in various training topics is presented in Table 4.21.

4.7 Assistance and Barriers to Business Development

In general, external support for the environmental business sector in Romania is very low. The government shows little interest in supporting this sector, and, as Table 4.22 shows, there is no other major institution providing significant assis-

TABLE 4.20: USEFULNESS OF SELECTED INFORMATION DELIVERY OPTIONS

<i>Delivery options</i>	<i>Rating</i>	<i>% of Respondents Willing to Pay</i>
Environmental Business Directory (book)	3.1 (55)	54
Regular newsletter	2.8 (45)	46
Broadcast fax service	2.8 (44)	32
Environmental Business Directory (CD diskette)	2.7 (43)	56
Information research service providing specific information	2.5 (32)	32
Conferences arranged to address specific environmental problems	2.4 (28)	21
Partnering workshops designed to introduce you to western partners, government environmental officials and NGOs	2.1 (16)	19
Computer database of information resources available on the Internet	2.0 (23)	32
Local business coordinator to arrange meetings, contacts and workshops	1.8 (13)	16

Note: The following scale was used for the rating: 4 – very useful, 3 – useful, 2 – somewhat useful, 1 – not useful. Numbers in brackets indicate the percentage of respondents which find delivery option very useful.

TABLE 4.22: IMPORTANCE OF SELECTED SOURCES OF ASSISTANCE

<i>Institution/ Organization</i>	<i>Responses for "Very Important" or "Important"</i>
Business or industrial associations	31%
Professional training institutions	30%
Government	26%
Scientific or academic institutions	23%
Financial institutions	19%
International organizations	13%

TABLE 4.23: PERCEIVED BARRIERS TO BUSINESS DEVELOPMENT

<i>Barriers to Development</i>	<i>Responses for "Major Barrier" or "Barrier"</i>
Legal regulation and registration requirements	70%
Access to credit and finance	62%
General access to information	55%
Market demand for products and services	48%
Environmental regulations	39%
Tax regulation	33%
Foreign competition	16%

tance to Romania's environmental business sector. Therefore, it is not surprising that most important source of support indicated by survey respondents — business or industrial associations — received mention by only 31 percent of the companies. Professional training institutions received the next highest mention, but still the low response indicates a lack of training institutions with programs tailored specifically for the environmental business sector. Only a fourth of survey respondents mentioned governmental institutions, in particular the Ministry of Water Resources, Forests and Environmental Protection, as an important source of assistance to business development.

Table 4.23 shows the perceived barriers to development of the environmental business sector in Romania. The major obstacle has been the legal regulation and registration requirements, mentioned as a barrier by 70 percent of the companies (see Table 4.24 for information about Romania's certification requirements). Access to credit and finance and general access to information were also seen as barriers to business development, mentioned by 62 and 56 percent, respectively.

Funding is particularly problematic in Romania because the legislation does not give incentives to environmental business and funding must therefore be acquired through normal bank loans. These are difficult to obtain because environmental activities are expensive and do not result in immediate profits. However, it is hoped the creation of the National Environmental Protection Fund will contribute to the financing of environmental projects. Furthermore, foreign institutions such as the PHARE Programme, the Romanian-American Enterprise Fund, USAID and the World Bank have specific environmental programs (e.g. in the field of energy-efficiency and eco-efficiency of highly polluting industries) from which funding may be available.

TABLE 4.24: CERTIFICATION OF ENVIRONMENTAL PROFESSIONALS IN ROMANIA

Certification of environmental professionals is regulated by a 1996 order of the Minister of Waters, Forests and Environmental Protection (no. 278/1996). According to this order, "specialized units, juridical persons and individuals" can be certified to conduct environmental impact assessments and/or environmental audits. While there is only one level of certification for environmental audit for juridical persons, individuals can request to be certified as assistant experts, associate experts, or principal (senior) experts according to their degree of expertise. For environmental impact assessments, there is only one level of certification both for juridical persons and individuals. The certification process, drafted with the help of foreign experts, is compatible with similar processes in Western countries.

The complete files of the applicant institution or person requesting the certification for one or both of the activities is assessed by a commission. In certain cases, "when clarifications are needed," the applicant may be interviewed by the assessing commission. Successful applicants receive the certification for a period of two years. At the expiration of the two-year period, a renewal of the certification must be requested. After two successful renewals, i.e. after six years, certified institutions or individuals must pass a new examination. For individuals certified for environmental audits, promotion to a higher level than the one already obtained is possible at any time. The procedure is also based on files, and applicants must prove they have raised their degree of expertise to the requested higher level of certification.

The 1996 assessment commission comprised the minister, a councilor and three university professors. An additional 40 university professors were associate assessors. The process was administered by a technical secretariat based at the Ministry of Water Resources, Forests and Environmental Protection, at the Strategy and Regulation Direction.

Since May 1996, when the certification process was regulated by the order of the Minister, only professionals certified according to this procedure are authorized to conduct environmental impact assessments and environmental audits.

Environmental impact assessments and environmental audits are necessary for obtaining the environmental agreement and authorization requested by the Environmental Protection Law. The procedures, minimum requisites etc. for an environmental impact assessment and for an environmental audit are established by Order No. 125/1996 of the Minister of Waters, Forests and Environmental Protection "for the approval of the regulating procedure of economic and social activities with impact on the environment."

During the survey, several senior managers of environmental businesses made the following suggestions for donors and investors who wish to help the development of Romania's environmental business sector:

- Support the creation of private small and medium-sized companies.
- Give grants and loans for producing environmental goods and services.
- Offer general management training.
- Offer subject-oriented training.

- Support capacity building and strengthening of professional associations.
- Support the creation of environmental business information centers.

Finally, about half the respondents considered low environmental expenditures, and hence low market demand for their products and services, as an obstacle. Only 39 percent indicated environmental regulations were a barrier, and only 16 percent mentioned foreign competition as a barrier to business development.

Chapter 5: Slovenia

5.1 Summary of Findings

In 1995, spending on environmental protection in Slovenia totaled USD 150 million, or 0.8 percent of the country's gross domestic product. The main sources funds for environmental projects were private and state-owned enterprises and the state budget. The State Environmental Protection Fund contributed approximately 7 percent of the total environmental expenditures.

Details of environmental spending in 1995 were not available. In 1994, the vast majority of environmental spending was allocated to air pollution-control activities (71 percent), followed by waste management-related activities (18 percent) and water and wastewater-related projects (9 percent). The remaining funds were spent on other projects, including the national monitoring system.

The environmental business sector in Slovenia is perhaps the largest of the surveyed countries. It is estimated that nearly 250 companies provide environmental products or services (121 of them were included in this survey. The market is also young — 52 percent of the companies were established after 1990. More than half of the companies were privately owned, although a significant share (25 percent) were state-owned. The remaining companies were in the process of privatization or operated under a combination of state and private ownership.

With 13 percent of environmental companies involved in joint-ventures with foreign firms, Slovenia has the second largest occurrence of foreign partnerships of all the surveyed countries. Partners for Slovenian joint-ventures come mainly from Austria, Germany and Croatia.

The total revenues from environmental activities reported by the 95 companies that provided financial data exceeded USD 87 million in 1995. Technical services generated the highest share of revenues (40 percent), followed by the sale of environmental technologies (26 percent) and testing and monitoring activities (15 percent). Other sources of income were research, training and education.

When the total revenues were broken down by media, the top income areas were water and wastewater activities and waste-related activities, each of which generated 30 percent of revenues. Air pollution control generated 9 percent of revenues, energy-related activities generated 7 percent. The remaining 24 percent came from industrial safety and noise reduction, environmental impact assessment and soil and land activities.

As in the other surveyed countries, no effective formal channels exist to provide information on project opportunities. Personal and professional contacts, the Ministry of Environment, fairs and trade shows, the daily press, direct mail and participation in conferences are among the primary sources of information about business opportunities. Professional associations, such as the chamber of commerce, and the Academy of Sciences are not seen as major information sources or as effective lobbying groups for the environmental business sector.

Slovenia's environmental professionals showed high interest in information about domestic environmental regulations, domestic tenders for projects, domestic environmental problems, sources of project financing, EU environmental regulations, and new environmental technologies.

Only one third of the survey respondents showed high

interest in conferences arranged to address specific environmental problems; a computer database of information resources available on the Internet; and a partnering workshop designed to introduce Slovenian professionals to Western partners, government environmental officials and NGOs. Approximately 40 percent of the respondents would be willing to pay for such information products.

Professional environmental training was requested particularly on environmental impact assessment, environmental regulation and policy, financing environmental investments, environmental economics and environmental management.

The government was considered by 65 percent of the survey respondents to be an important source of support and assistance for environmental activities. Other important sources of assistance mentioned by more than 40 percent of the respondents were scientific and academic institutions, professional training institutions, financial institutions, business or industrial associations and international organizations.

Access to credit and financing was seen as the biggest barrier to the development of Slovenia's environmental business sector and was mentioned by 64 percent of respondents. The next biggest barrier, mentioned by almost half the survey respondents, was environmental regulations.

5.2 Introduction

POLITICAL SITUATION

In June 1991, Slovenia declared its independence from the Yugoslav Federation, and the country was formally recognized by the United Nations and the European Union in January 1992. In the most recent parliamentary elections, held in November 1996, the center-right alliance won exactly half of the seats in the 90-member National Assembly, and formed a centrist coalition government. The strength of the conservative forces within the coalition will likely benefit Slovenia's economic reform, although a more Euro-skeptic position could emerge and might delay Slovenia's harmonization of laws with EU standards. Regardless, it seems the right will speed up the industrial privatization and promote free-trade agreements that are currently in existence with more than 40 countries, including the EU and EFTA countries. It is also highly probable that Slovenia will be accepted in the first wave of EU enlargement scheduled for early next century.

ECONOMIC SITUATION

At the beginning of its independence, Slovenia's economy suffered severe decline. Economic output reached the lowest point ever in 1992, causing unemployment to rise to over 15 percent. Since 1994, many of the economic indicators have shown improvement. However, the rate of GDP growth has slowed from almost 5 percent in 1994 to 2.5 percent in 1996, mirroring a decline in the rate of growth of industrial output, which fell from 6.4 percent in 1994 to 1.5 percent in 1996. There is still a major crisis of competitiveness and a widespread need for restructuring, and industrial output remains 20 percent below the level of 1990.

Despite the economic crisis, the government has managed

TABLE 5.1: KEY ECONOMIC INDICATORS

	1994	1995	1996*	1997*
GDP growth (%)	4.9	3.5	2.5	3.5
Inflation (%)	19.8	12.7	10.2	8.5
Unemployment (%)	14.4	13.9	13.5	13.8
Exports (mln USD)	6.8	8.3	8.5	9.1
Imports (mln USD)	7.3	9.5	9.5	10.1
Budget balance (% of GDP)	-0.2	0.0	-0.3	-0.4
Gross debt (bln USD)	2.3	3.0	4.2	4.6
Annual foreign direct investment inflows (mln USD)	128	176	55	120

* projected

Source: Business Central Europe, The Annual Report, 1996

to hold down the budget deficit, keeping it below 0.5 percent of GDP since 1994. Inflation also decreased significantly from almost 20 percent in 1994 to 10.2 percent in 1996. The unemployment rate, which was 13.5 percent in 1996, is still regarded as quite high, and more jobs are threatened in labor intensive industries. Foreign direct investment peaked in 1995 at USD 176 million and decreased significantly to USD 55 million in 1996.

In 1993, Slovenia signed a trade and cooperation agreement with the EU to improve Slovenia's access to the EU market. By the end of 1995, more than two-thirds of Slovenia's international trade was with members of the European Union. The rest was predominately with the countries of the former Yugoslavia and with members of the Central European Free Trade Agreement (CEFTA).

Slovenia has become a member of the International Monetary Fund, the World Bank and the European Bank for Reconstruction and Development. In January 1996, Slovenia became a member of CEFTA and joined the Visegrad countries, Bulgaria and Romania in a free trade union, taking over the presidency at the beginning of 1997 from the Slovak Government.

5.3 Overview of the Environmental Market

ENVIRONMENTAL EXPENDITURES

Slovene environmental expenditures are financed mainly through the state budget, local governments and municipalities, the National Environmental Protection Fund and spending from the private sector (e.g. enterprises and external sources). The PHARE Programme is one of the biggest foreign contributors of funding in Slovenia and has contributed more than USD 110 million since 1992. However, these contributions were only partly related to environmental projects, in particular, for the construction of wastewater treatment plants and sewage networks, industrial sanitation and coastal management programs. Additional financial aid was provided by the EBRD and the World Bank, which financed the conversion of domestic and small commercial heaters from coal to natural gas. Further donors include the governments of Austria, the Netherlands, the United Kingdom and France, all of which support various programs in the public and private sector.

Co-funding of environmental investments is also a common scheme in Slovenia. Under the arrangement, the government supports environmental projects of businesses for up to

TABLE 5.2: ENVIRONMENTAL EXPENDITURES, 1994-1996

Year	Environmental Expenditures (mln USD)	Share of GDP
1994	146.6	1.0%
1995	150.4	0.8%
1996*	147.6	0.8%

*estimated

Source: Spring Report 1997, IMAD, based on SORS, Ministry of Finance, EcoFund of the Republic of Slovenia and IMAD estimates.

30 percent of their total investments. Projects are chosen based on a public tender. Between 1991 and 1994, annual co-funding increased from USD 1.7 million to USD 4 million. The main condition of co-funded projects is that they must ensure direct reduction of emissions.

Total spending on environmental protection in Slovenia was approximately 1.0 percent of the gross domestic product in 1994, and it decreased to 0.8 percent of GDP in 1995 and 1996. As shown in Table 5.2, annual environmental expenditures amounted to USD 147 million in 1994, 150 million in 1995, and 148 million in 1996.

An increase in environmental expenditure can be expected over the next few years as a result of efforts to harmonize local environmental legislation and policy with EU standards. According to a study prepared for the EU in 1997 entitled "Assessing the Costs of CEE Approximation with EU Environmental Directives," the total annual cost of compliance in the major environmental sectors (e.g. air, wastewater and waste) are estimated to exceed USD 152 million in Slovenia. The bulk of that money is expected to be spent on purchasing new environmental technologies and on updating old systems.

Environmental investments from the private sector will also increase significantly due to provisions in the privatization law that allow companies to reserve long-term funds for investments in environmental protection.

STATE ENVIRONMENTAL FUNDS

In 1993, the Environmental Development Fund of Slovenia (EcoFund) was established under the Environmental Protection Act with a total capital of USD 100,000. The following year, the capital was increased to USD 15.5 million through the transfer of repayment and interest from 277 loans previously awarded by the Ministry of Environment. The EcoFund's income consists mainly of budgetary contributions, income from charges for the use of natural resources (including two-thirds of the revenue from CO₂ emissions charges), 8.5 percent of the revenue from privatization programs and the transferred loan repayment previously awarded by the Ministry of Environment.

The EcoFund operates as a nonprofit financial organization

TABLE 5.3: TOTAL ECOFUND REVENUES AND EXPENDITURES (MLN USD)

	1994	1995	1996*
Total revenues	1.2	10.5	13.9
Total expenditures	-	0.6	10.3

*estimated

Source: The Slovenian Environmental Development Fund, 1997

TABLE 5.4: FUND EXPENDITURES BY MEDIA

	1995	1996*
Air	100%	57%
Water	–	29%
Waste	–	14%

*estimated

Source: The Slovenian Environmental Development Fund, 1997

and provides soft loans on preferential terms for environmental projects on the basis of public announcement. The tendering procedures are defined according to the priorities of the Environmental Protection Act and the National Environmental Protection Program, which will be launched in 1997. The Fund is mainly dedicated to air pollution abatement, phasing out of ozone-depleting substances, municipal infrastructure development and industrial pollution reduction programs. The EcoFund has been fully operational since 1995, but significant spending was undertaken only in 1996, when total revenues were USD 13.9 million and expenditures were USD 10.3 million.

It is estimated that 57 percent of EcoFund's expenditures in 1996 were dedicated to air pollution reduction programs, 29 percent to water-related activities and 14 percent to waste management projects. The largest portion of the funds (46 percent) was awarded to private individuals to support the conversion to cleaner heating systems in households, while 32 percent of the expenditure was given to municipal and local administrations and 22 percent went to private and state enterprises.

In 1995 and 1996, the EcoFund awarded USD 4.5 million worth of loans to municipalities and municipal service companies for waste water treatment; waste management; and construction of water, sewage and gas pipelines. In 1996, the EcoFund borrowed USD 19 million from the EBRD to finance the conversion to cleaner heating systems. That year the EcoFund also awarded USD 7 million in loans to companies for air and water pollution-reduction projects and for programs to phase out ozone-depleting substances.

In May 1996, the World Bank granted the EcoFund a USD 20 million loan for projects to reduce air pollution and a USD 3.5 million loan to set up the Geo-Information Center. Currently, the PHARE Programme is considering awarding the EcoFund a grant of ECU 5 million, which would be made available for environmental investments.

The main problems facing the EcoFund are a lack of capital and high interest rates (6 percent plus the rate of inflation). Another problem with the EcoFund commonly stated by businesses is the long time it takes authorities to make a decision regarding an application for funding.

ENVIRONMENTAL PRIORITIES

In general, Slovenia's environment is in good condition compared to many other CEE countries, and no particular environmental hot spots exist. However, there are significant problems related mainly to water quality and waste management, as well as increasing air and soil pollution.

In particular, surface and groundwater has deteriorated over the past decades, mainly due to agricultural run-off, discharge of untreated municipal and industrial wastewater and pollution caused by the numerous industrial and municipal waste disposal sites. The quality of drinking water is generally low, and there is little treatment of wastewater in Slovenia. Improvements and investments are expected over the next few years. Waste management is a particular area of concern because of the growing amount of untreated industrial and

TABLE 5.5: BREAKDOWN OF ENVIRONMENTAL EXPENDITURES BY MEDIA, 1994

Total investment for Environmental Protection (mln USD)	147
Air pollution	71%
Waste and waste water	9%
Waste	18%
Other	2%

Source: The Statistical Yearbook of Slovenia, 1995

municipal waste and because of leakage from unregulated and illegal dump sites.

The energy sector was once the largest area of concern, and high priority was given to flue gas desulfurization at power stations. In 1994, air pollution control programs accounted for more than 70 percent of environmental spending. Although these programs have since been successful, power plants and increasing urban traffic are still the main sources of air pollution, especially around Ljubljana. Furthermore, acid rain has become a problem, and soil pollution has been caused by the extensive use of pesticides and fertilizers.

Most of the environmental decisions made in the past were based mainly on political grounds without any comprehensive strategy or direction. The National Environmental Action Plan, which will be launched this year, should help focus environmental efforts and give a more focused outline of national environmental priorities.

The breakdown of environmental spending for 1994 is shown in Table 5.5. Figures for 1995 and 1996 were not available because of ongoing reorganization at the Slovenian Statistical Office. However, a new system to track environmental spending has already been started and will be implemented in 1998.

LEGISLATION AND ENFORCEMENT

The fundamental legal instrument for environmental protection in Slovenia is the Environmental Protection Act, which was established in 1993 and which functions as the general environmental code covering the most important environmental activities. In addition, the Act works as an umbrella for other legal instruments such as directives, regulations and standards which are prepared by different levels of government. The main issues covered by the Act are the basic principles of environmental protection aimed at sustainable development.

The general structure of environmental legislation follows the pattern of the Slovenian legal system, and its hierarchy of legal sources begins with the constitution, followed by basic environmental legislation (e.g. the Environmental Protection Act of 1993) and subordinate regulations and decrees covering individual aspects of environmental protection. A legislative framework regarding air and water pollution is already in place. Although the government has recently adopted a waste strategy, there is still a lack of legislation covering waste management. In general, secondary legislation on the implementation and enforcement of existing regulations is lagging behind.

The most important state bodies involved in environmental legislation are the Parliament, which passes the basic legislation; the Ministry of the Environment and Regional Planning, which is responsible for regulatory measures and control; the Environmental Protection Council, which adopts positions, informs the public, etc.; the Institute for Environmental Protection, which was established within the

Ministry of the Environment and Regional Planning; and the local authorities, which deal with environmental protection issues on the local level.

Slovenian officials are putting great effort into harmonizing national environmental legislation with EU standards, but gaps still remain, especially in sectoral and enforcement legislation. Also, there is not enough information available regarding the degree of compliance with recent legislation. It is known, however, that levels of compliance are still below the EU norm in many key areas, such as the industrial and energy sectors in municipal and hazardous wastes. The country's efforts to force compliance with regulations have focused mainly on water quality and have neglected many other important areas, including product-related directives as well as waste directives. In the future, more attention will also need to be paid to the agricultural sector, which poses significant environmental threats; to creating directives to deal with air, waste and water; to the Integrated Pollution Prevention and Control (IPPC) directive; and to establishing funding sources for projects related to water, air and waste management.

ENVIRONMENTAL ADMINISTRATION

The central authority in charge of the environment is the Ministry of Environmental Protection and Land Use. Within the Ministry there are several independent agencies with different tasks related to the environment. For example, the Nature Protection Authority is in charge of the general protection of the natural flora and fauna, including the handling of waste, public services protection, information services, technical work for the EcoFund, water management, etc. The Office for Physical Planning is in charge of land use and management, including urban and regional development and supervision of the preparation of land-use plans by local authorities. The Inspectorate for Environment and Physical Planning supervises the implementation of legal instruments; oversees water development and management; and regulates physical planning and house planning activities.

In addition, the following institutions operate as part of the Ministry of Environment: the geophysics administration, the surveying and mapping authority, the nuclear safety administration and the hydro-meteorological institute.

Administration of environmental regulations in Slovenia is carried out on the national level and on the local level, which is made up of 147 municipalities. No public administration exists on the regional level, although there are 58 regional administrative units which operate as links between the national and the local authorities and which perform some local administrative tasks.

The Nature Protection Authority also deals with many environmental issues. For instance, its Water Management Department consists of eight subdivisions, one for each major watershed. The Nature Protection Department has seven regional offices that operates as technical supervisory bodies for local authorities. In addition, the Inspectorate for Environment and Physical Planning has established nine offices for environmental inspections and another 12 for the inspection of physical planning.

The main function of local authorities related to the environment are the protection of air, soil and water resources; the regulation and maintenance of water and power supply facilities; the protection against noise and the provision of facilities for the collection and disposal of waste in urban municipalities; and the preservation of natural and cultural monuments of local interest.

Finally, there are several independent or semi-independent scientific institutes which play a major role in environmental protection. These include the Josef Stefan Institute, the Water Management Institute and the National Chemical Institute.

TABLE 5.6: AGE OF ENVIRONMENTAL COMPANIES

<i>Year of establishment</i>	<i>% of Respondents</i>
After 1992	20%
1990-1992	32%
1980-1989	13%
Before 1980	35%

TABLE 5.7: OWNERSHIP STRUCTURE OF ENVIRONMENTAL BUSINESSES

<i>Ownership</i>	<i>% of Respondents</i>
Privately owned	57%
State-owned	25%
State and privately owned	8%
In process of privatization	10%

TABLE 5.8: OFFICE EQUIPMENT USED

<i>Office Equipment</i>	<i>% of Respondents</i>
Telephone	100%
Personal computer	91%
Fax	91%
Printer	85%
Photocopier	73%
Modem	61%
Cellular phone	52%
Mainframe computer	43%
E-mail	38%
On-line services connection	25%
Telex	16%
GIS computer	11%

5.4 Profile of the Environmental Business Sector

The Slovenian environmental business sector is comprised of more than 250 companies that provide a wide range of environmental services and technologies. While the majority of environmental companies are quite young — 52 percent were established after 1990 — more than a third are older companies established before 1980. The age breakdown of environmental companies is shown in Table 5.6.

Almost all of the environmental businesses founded after 1990 are privately owned. As shown in Table 5.7, of the 121 companies surveyed, 57 percent are privately owned, 25 percent are state owned and 10 percent are state-owned companies in the process of privatization — a sign of the positive development of the privatization process in Slovenia.

In general, surveyed companies are outfitted with all types of modern office equipment. Telephones, personal computers, fax machines and printers are standard equipment in the firms surveyed. As Table 5.8 shows, all of the companies are equipped with phone lines. Interestingly, more than half of the

TABLE 5.9: EMPLOYEES INVOLVED IN ENVIRONMENTAL ACTIVITIES

<i>Number of Employees</i>	<i>Full-time Workers</i>	<i>Part-time/ Contractors</i>
Up to 5	57%	–
6-10	15%	69%
11-20	10%	20%
21-50	8%	7%
More than 50	10%	4%

surveyed businesses use cellular phones, and a third have access to e-mail.

Most of the environmental companies in Slovenia are small enterprises. As Table 5.9 shows, more than 50 percent of survey respondents employed fewer than five full-time workers, and more than 80 percent of the companies employed fewer than 20 people full time. Only a tenth of the survey respondents were large companies that employed more than 50 full-time workers in their environmental business activities. It is estimated that more than 1,000 people are employed in the environmental business sector in Slovenia.

The surveyed companies reported total annual environmental revenues exceeding USD 87 million, approximately 40 percent of the estimated market. However, several companies would not provide detailed financial data, and as a result the reported total comes from only 95 of the 121 companies surveyed. A breakdown of companies based on annual revenue is shown in Table 5.10.

The environmental technology market in Slovenia is geared primarily toward providing technical services, which accounted for 40 percent of total revenues in 1995. As shown in Table 5.11, the next major source of income is the manufacture of environmental technologies, which accounted for 26 percent of revenues. Testing and monitoring accounted for 15 percent of total revenues.

Analysis by media shows that water and wastewater activities and waste-related activities each generated 30 percent of total revenues. This was followed by air-related and energy-related activities, which generated 9 percent and 7 percent of revenues, respectively. Non-media specific revenues (e.g. consultant activities that include more than one media, like EMS, EIA, environmental planning, industrial safety and noise control, etc.) amounted for 24 percent of revenues. The breakdown of revenues by media is shown in Table 5.12.

With regard to foreign cooperation, 13 percent of the environmental businesses operate a joint-venture with a foreign partner. As expected, the top three countries from which survey respondents found joint-venture partners were Austria (four joint-ventures), Germany (three joint-ventures) and Croatia (two joint-ventures). The main foreign languages spoken by business representatives are English, Croatian, and German.

5.5 Information Channels for Business Opportunities

Environmental professionals in Slovenia receive most of their information about business opportunities from personal contacts and from the Ministry for Environment. As shown in Table 5.13, other major information sources included fairs and trade shows, the daily press, direct mail, conferences and local authorities. Environmental publications and the chamber of commerce were also mentioned somewhat frequently as important sources of information.

TABLE 5.10: BREAKDOWN OF COMPANIES BASED ON REVENUES FROM ENVIRONMENTAL ACTIVITIES IN 1995

<i>Revenues (USD)</i>	<i>% of Respondents</i>
Less than 100,000	34%
101,000-250,000	20%
251,000-500,000	10%
501,000-1 million	13%
1 million-5 million	19%
More than 5 million	4%

TABLE 5.11: BREAKDOWN OF REVENUES BY ACTIVITY

<i>Activity</i>	<i>% of Revenues</i>
Technical services	40%
Environmental technologies	26%
Testing, monitoring and laboratory	15%
Other	19%

TABLE 5.12: BREAKDOWN OF REVENUES BY MEDIA

<i>Media</i>	<i>% of Revenues</i>
Water and wastewater	30%
Waste	30%
Air	9%
Energy	7%
Other (not media specific)	24%

TABLE 5.13: MOST IMPORTANT CHANNELS OF INFORMATION ABOUT BUSINESS OPPORTUNITIES

<i>Information Channel</i>	<i>% of Respondents</i>
Personal contacts	96%
Environmental Ministry	70%
Trade shows and fairs	61%
Daily press	61%
Direct mail	57%
Conference attendance	57%
Local authorities/municipalities	54%
Environmental publications	49%
Chamber of Commerce	43%
Professional associations	36%
Business publications	36%
International organizations	31%
Ministry of Economics/Trade	29%
Broadcast fax-service	26%
University/Academy of Sciences	24%
E-mail	20%
Commercial banks	7%

TABLE 5.14: ANNUAL CONFERENCE ATTENDANCE

<i>Number of Conferences Attended Annually</i>	<i>% of Respondents</i>
None	14%
1-2	29%
3-5	36%
6-10	6%
More than 10	15%

TABLE 5.15: MAIN REASONS FOR ATTENDING CONFERENCES

<i>Reasons</i>	<i>% of Respondents</i>
Meet others in the same field	68%
Participate in professional training	63%
Learn about new project opportunities	57%
Find potential partners	53%
Participate as speaker	44%
Marketing of firm's products	26%

TABLE 5.16: MOST IMPORTANT PROFESSIONAL ASSOCIATIONS

<i>Association</i>	<i>% of Respondents</i>
Chamber of commerce and its associations (GZS)	28%
Association for the Protection of Waters	5%
IAH (International Association for Hydrogeology)	4%
Association of Landscape Architects and Urban Planners	3%
Ecological Association of Slovenia	3%
International PR Association	3%
IAWQ (International Association of Water Quality)	2%
ISWA (International Solid Waste Management)	2%

TABLE 5.17: READERSHIP OF ENVIRONMENTAL PUBLICATIONS

<i>Environmental Publications</i>	<i>% Who Read</i>
Okolje	16%
Gospodarjenje z Odpadki	13%
Environmental Science and Technology	6%
Gea	6%
Umwelt	5%
European Water Pollution Control	4%
Ujma	4%
Umanotera	4%

As Table 5.14 shows, more than 50 percent of environmental professionals participated in more than three conferences annually. Major reasons for attending conferences were to meet other professionals, to receive training, to learn about project opportunities and to find potential partners. The percentage of respondents citing various reasons for attending is shown in Table 5.15.

When asked to name the most important professional associations, the largest portion of survey respondents (28 percent) mentioned the chamber of commerce. Other associations mentioned included the Association for the Protection of Waters, the International Association for Hydrogeology and the Association of Landscape Architects and Urban Planners. Important professional associations are listed in Table 5.16.

Tables 5.17-5.19 show the readership of various publications. The top environmental publications read by the survey respondents are *Okolje* and *Gospodarjenje z odpadki*, while the top business publications mentioned were *Gospodarski vestnik*, *Uradni list RS*. The most popular newspaper, *Delo*, was read by 63 percent of survey respondents. Other newspapers mentioned included *Dnevnik* and *Večer*.

5.6 Information and Training Needs

When asked to indicate the type of information necessary to their business development, Slovenian environmental professionals expressed a need for updated information on domestic environmental regulations (listed by 77 percent of respondents); information on project opportunities, especially on tenders (listed by 62 percent); updates on the status of environment and environmental problems (listed by 60 percent); and information regarding sources of project financing (listed by 57 percent). The results of the rankings are shown in Table 5.20.

Surprisingly, information on eco-efficient and cleaner production practices and environmental management systems was not seen as urgent. This may be explained by a lack of awareness and by the fact that the implementation of these

TABLE 5.18: READERSHIP OF BUSINESS PUBLICATIONS

<i>Business Publications</i>	<i>% Who Read</i>
Gospodarski vestnik	36%
Uradni list RS	19%
Manager	9%
Podjetnik	8%
Finance	7%
Obrtnik	6%
Glas gospodarstva	4%
Kapital	4%

TABLE 5.19: READERSHIP OF NEWSPAPERS

<i>Newspapers</i>	<i>% Who Read</i>
Delo	63%
Dnevnik	18%
Večer	10%
Republika	9%
Primorske novice	3%

TABLE 5.20: IMPORTANCE OF SELECTED ENVIRONMENTAL INFORMATION

<i>Environmental information</i>	<i>Rating</i>
Domestic environmental regulations	3.7 (77)
Domestic tenders for projects	3.4 (62)
Domestic environmental problems	3.4 (60)
Sources of project financing	3.4 (57)
EU environmental regulations	3.3 (49)
New environmental technologies	3.3 (46)
Announcements of domestic conferences or trade fairs	3.1 (41)
Information on finding domestic partners	3.1 (36)
Eco-efficient and cleaner production practices	2.9 (35)
International tenders for projects	2.8 (35)
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	2.8 (32)
Announcements of international conferences or trade fairs	2.8 (31)
Certification requirements for environmental professionals	2.8 (29)
Information on finding international partners	2.8 (22)
Contact information to government agencies	2.6 (22)
International environmental problems	2.7 (21)

Note: The following scale was used for the rating: 4 – very important, 3 – important, 2 – somewhat important, 1 – not important. Numbers in brackets indicate the percentage of respondents who rated the information as very important.

tools and techniques is still in the early stages. However, it was noted in the survey that there are ongoing initiatives to establish a cleaner production center in Slovenia as well as to promote environmental management systems more widely throughout the country.

Companies were also asked to rank the best delivery option for receiving important information. The results are presented in Table 5.21. While there was no single overwhelmingly popular means of delivering information, conferences were the most preferred delivery option, followed by the Internet.

TABLE 5.21: USEFULNESS OF SELECTED INFORMATION DELIVERY OPTIONS

<i>Delivery option</i>	<i>Rating</i>	<i>% of Respondents Willing to Pay</i>
Conferences arranged to address specific environmental problems	3.1 (36)	33
Computer database of information resources available on Internet	2.8 (33)	40
Partnering workshops designed to introduce you to western partners, government environmental officials and NGOs	2.8 (23)	41
Environmental Business Directory (CD diskette)	2.8 (22)	40
Environmental Business Directory (book)	2.8 (16)	36
Regular newsletter	2.8 (16)	48
Information research service providing specific information	2.7 (20)	40
Local business coordinator to arrange meetings, contacts and workshops	2.5 (14)	12
Broadcast fax service	2.3 (10)	15

Note: The following scale was used for the rating: 4 - very useful, 3 - useful, 2 - somewhat useful, 1 - not useful. Numbers in brackets indicate the percentage of respondents which find delivery option very useful.

TABLE 5.22: INTEREST IN PROFESSIONAL TRAINING

<i>Type of Training</i>	<i>Rating</i>
Environmental impact assessment	3.2 (41)
Environmental regulation and policy	3.2 (35)
Financing environmental investments	3.0 (36)
Environmental economics	3.0 (31)
Environmental management	2.9 (29)
Environmental auditing	2.8 (27)
Strategic planning	2.8 (24)
Project management	2.7 (24)
Environmental risk assessment	2.7 (21)
Hazardous waste site ranking	2.6 (17)
Environmental systems and their sustainability	2.6 (16)
Integrated solid waste management	2.5 (17)
GIS (Geographic Information Systems)	2.5 (13)

Note: The following scale was used for the rating: 4 - very interested, 3 - interested, 2 - somewhat interested, 1 - not interested. Numbers in brackets indicate the percentage of respondents who are very interested in a particular training

Partnering workshops designed to bring together Western partners, government officials and NGOs and an environmental business directory were also seen as useful information delivery options. On average, between a third and half of the surveyed businesses were willing to pay for such products.

With regard to topics for advanced professional training, the top three subjects of interest to survey respondents were environmental impact assessment, environmental regulation and policy and financing environmental investments. Interest in various training topics is presented in Table 5.22.

5.7 Assistance and Barriers to Development

When asked to indicate the importance of various institutions to their business development, 65 percent of environmental professionals said the government, particularly the Ministry

TABLE 5.23: IMPORTANCE OF SELECTED SOURCES OF ASSISTANCE

<i>Institutions/ Organizations</i>	<i>Responses for “Very Important” or “Important”</i>
Government	65%
Scientific or academic institutions	44%
Professional training institutions	43%
Financial institutions	43%
Business or industrial associations	42%
International organizations	41%

TABLE 5.24: PERCEIVED BARRIERS TO BUSINESS DEVELOPMENT

<i>Barriers to Development</i>	<i>Responses for “Major Barrier” or “Barrier”</i>
Access to credit and finance	64%
Environmental regulations	49%
Tax regulation	39%
General access to information	34%
Legal regulation and registration requirements	33%
Market demand for products and services	24%
Foreign competition	15%

of Environment and Physical Planning, was an important source of support. As shown in Table 5.23, scientific, professional training, and financial institutions, business associations and international organizations, were each considered important sources of support by about 40 percent of survey respondents.

As in other surveyed countries, a large percentage of Slovenian environmental professionals (64 percent) viewed limited access to credit and financing as a major barrier to development. Nearly half pointed to weak environmental legislation and enforcement as a factor that holds back their business development, while one out of three survey respondents considered general access to information and legal regulations and registration requirements to be barriers. Market demand and foreign competition were not seen as major barriers. The perceived barriers to business development are listed in Table 5.24.

Appendix: Questionnaire Used in the Survey

Part 1: Respondent Profile

1. **When was your company established?** _____

2. **What approximately was your company's turnover from environmental activities in 1995?** _____

Converted to USD: _____

3. **Is your company (please check one):**

State-owned Privately owned State and privately owned In process of privatization

4. **Are you an associate to a foreign company?**

Yes No

If yes, please specify your partner company: _____ Country: _____

5. **How many people are involved in the environmental activities of your company?**

Full-time employees: _____

Part-time/contractors: _____

6. **Foreign languages spoken (check all that apply)?**

English German Russian French Italian Bulgarian
 Romanian Croatian Slovenian Hungarian Other (specify): _____

7. **What type of office equipment does your company have (check all that apply)?**

Telephone Cellular phone Telex Mainframe computer
 Printer Photocopier Modem Personal computer
 E-mail Fax GIS computer On-line services connection

8. **Within your area of expertise, please provide us your best estimate of the percentage of your 1995 annual revenues that were derived from the following activities.** (Please complete the following table using approximate percentages and *add up to 100%*)

	<i>Technical Services</i> (e.g. design, engineering, construction, general consulting, etc.)	<i>Environmental Technologies</i>	<i>Testing, Monitoring and Laboratory</i>	<i>Other</i> (e.g. R&D and Education, etc.)	Total in %
Water and wastewater					
Waste					
Air					
Energy					
Other					
Total in %					100%

2. Business Information Sources

1. How do you find out about environmental business opportunities? (Check all that apply)

- | | | |
|--|---|--|
| <input type="checkbox"/> Personal contacts | <input type="checkbox"/> Environmental ministry | <input type="checkbox"/> Professional associations |
| <input type="checkbox"/> Daily press | <input type="checkbox"/> Ministry of Economics/Trade etc. | <input type="checkbox"/> Commercial banks |
| <input type="checkbox"/> Direct mail | <input type="checkbox"/> Chamber of Commerce | <input type="checkbox"/> International organizations |
| <input type="checkbox"/> Broadcast fax service | <input type="checkbox"/> Local authorities/municipalities | <input type="checkbox"/> Environmental publications |
| <input type="checkbox"/> Trade shows and fairs | <input type="checkbox"/> University/Academy of Sciences | <input type="checkbox"/> Business publications |
| <input type="checkbox"/> Conference attendance | <input type="checkbox"/> E-mail | <input type="checkbox"/> Other (specify): _____ |

2. Which environmental or business publications do you read regularly or your company is subscribed to?

(List more than one, if applicable)

Environmental publications: _____

Business publications: _____

Main newspaper: _____

3. What professional association(s) do you belong to?

4. How many conferences do members of your company attend annually?

- None 1 to 2 3 to 5 6 to 10 More than 10

5. What were the main reasons for your company attending conferences last year? (Check all that apply)

- | | | |
|---|--|--|
| <input type="checkbox"/> Participate in professional training | <input type="checkbox"/> Find potential partners | <input type="checkbox"/> Marketing firm's products |
| <input type="checkbox"/> Meet others in the same field | <input type="checkbox"/> Participate as speaker | <input type="checkbox"/> Learn about new project opportunities |

3. Information and Training Needs

1. What type of information do you think is important for your business development?

TYPE OF INFORMATION	<i>Very Important</i>	<i>Important</i>	<i>Somewhat Important</i>	<i>Not Important</i>
Announcements of domestic conferences and trade fairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Announcements of international conferences and trade- fairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Domestic environmental problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International environmental problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Domestic environmental regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EU environmental regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact information to government agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sources of project financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New environmental technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Domestic tenders for projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International tenders for projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on where to find domestic partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on where to find international partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Certification requirements for environmental professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental quality standards for industries (e.g. ISO 14000, EMAS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eco-efficient and cleaner production practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How useful do you rate the following services for delivering information, and would you be willing to pay for them?

TYPE OF INFORMATION SERVICE	<i>Very Useful</i>	<i>Useful</i>	<i>Somewhat Useful</i>	<i>Not Useful</i>	<i>Would you pay for it?</i>	
					<i>Yes</i>	<i>No</i>
Regular newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information research service providing specific information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental business directory (book)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental business directory (CD diskette)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local business coordinator to arrange meetings, contacts and workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Computer database of information resources available on the Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broadcast fax service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partnering workshops designed to introduce you to Western partners, government environmental officials and NGOs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conferences arranged to address specific environmental problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Please rate your interest in receiving advanced professional training on the following topics.

TYPE OF TRAINING	<i>Very Interested</i>	<i>Interested</i>	<i>Somewhat Interested</i>	<i>Not Interested</i>
Environmental economics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental auditing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental impact assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental regulation and policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental systems and their sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financing environmental investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GIS (Geographic Information Systems)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous waste site ranking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integrated solid waste management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strategic planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Assistance and Barriers to Development

1. How important are the following institutions for supporting your business development?

SOURCES OF ASSISTANCE	<i>Very Important</i>	<i>Important</i>	<i>Somewhat Important</i>	<i>Not Important</i>
Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business or industrial associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
International organizations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scientific or academic institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional training institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Which of the following have hindered the development of your company?

BARRIERS TO DEVELOPMENT	<i>Major Barrier</i>	<i>Barrier</i>	<i>Somewhat of a Barrier</i>	<i>Not a Barrier</i>
Environmental regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal regulation and registration requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tax regulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to credit and finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foreign competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General access to information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market demand for products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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