

ROUTLEDGE STUDIES IN ECOLOGICAL ECONOMICS

Environmental Finance and Development

Sanja Tišma, Ana-Maria Boromisa and
Ana Pavičić Kaselj



Environmental Finance and Development

This book focuses on environmental financing in the process of alignment with the EU.

Based on a comparative analysis of national environmental strategies and financial needs and their links with strategic development documents in five selected countries (Bulgaria, Romania, Slovenia, Croatia, Turkey), the book identifies major achievements and remaining challenges in the main areas of environmental regulation: nature protection, water, waste, air and climate change.

For each area the same concept is applied: the current situation is presented, followed by an overview of institutional and legal frameworks. Division of competences between actors at the same or at different levels is addressed. Costs of implementation are estimated and possible sources of financing identified.

The analysis shows that a significant role in the decision making related to financing environmental protection has: (i) commercial value of environmental infrastructure necessary for services; (ii) issue of affordability; (iii) price setting mechanisms; (iv) risks for investors and creditors; and (v) policy stability and predictability.

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Authors

List of abbreviations

| | |
|-----------------|---|
| AAU | Assigned Amount Units |
| ACCOBAMS | Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean and Contiguous Atlantic Area |
| AURE | Agency for Efficient Use of Energy (Slovenia) |
| BAP | Biodiversity Action Plan |
| BGN | Bulgarian Lev |
| CBD | Convention on Biological Diversity |
| CCS | Carbon Capture and Storage |
| CDM | Clean Developing Mechanism |
| CEVKO | The Foundation for Environmental Protection and Reappraisal of Packaging Wastes (Turkey) |
| CITES | Convention on International Trade in Endangered Species |
| CLRTAP | Convention on Long-range Transboundary Air Pollution |
| CMS | Conservation of Migratory Species |
| CO ₂ | Carbon Dioxide |
| COP | Conference of Parties |
| DG | Directorate-General |
| DSI | State Hydraulic Works (<i>Devlet Su İşleri</i>) |
| EAFRD | European Agricultural Fund for Rural Development |
| EAP | Environmental Action Programme |
| EC | European Commission |
| ECU | European Currency Unit |
| EBRD | European Bank for Reconstruction and Development |
| EDF | European Development Fund |
| EEA | European Environment Agency |
| EEC | European Economic Community |
| EFF | European Fisheries Fund |
| EIONET | European Environment Information and Observation Network |
| EMEP | Enterprise for Management of Environment Protection Activities |
| EPEEF | Environmental Protection and Energy Efficiency Fund |
| EPIs | Environmental Protection Inspectorates |
| ERDF | European Regional Development Fund |
| ESF | European Social Fund |
| ETS | Emissions Trading System |

| | |
|-----------------|--|
| EU | European Union |
| GDP | Gross Domestic Product |
| GEF | Global Environment Facility |
| Gg | Giga Gram |
| GHG | Greenhouse Gas |
| GNI | Gross National Income |
| GNP | Gross National Product |
| GOCC | Government Office of Climate Change (Slovenia) |
| Ha | Hectare |
| HFCs | Hydrofluorocarbons |
| IFIs | International Financial Institutions |
| IISD | International Institute for Sustainable Development |
| IMF | International Monetary Fund |
| IPA | Instrument for Pre-accession Assistance |
| IPCC | Intergovernmental Panel on Climate Change |
| IPPC | Integrated Pollution Prevention and Control |
| IRSNC | Institute of the Republic of Slovenia for Nature Conservation |
| ISPA | Instrument for Structural Policies for Accession |
| JI | Joint Implementation |
| kg | Kilogram |
| km | Kilometre |
| kt | Kiloton |
| kWh | Kilowatt-hour |
| LCP | Large Combustion Plant |
| LMO | Living Modified Organism |
| LULUCF | Land Use, Land-Use Change and Forestry |
| m ³ | Cubic Metre |
| MDGs | Millennium Development Goals |
| MEAs | Multilateral Environment Agreements |
| MEPPPC | Ministry of Environmental Protection, Physical Planning and Construction (Croatia) |
| MESP | Ministry of Environment and Spatial Planning (Slovenia) |
| MEWM | Ministry of Environment and Water Management |
| MHSW | Ministry of Health and Social Welfare (Croatia) |
| mm | Millimetre |
| MOEW | Ministry of Environment and Water (Bulgaria) |
| Mtoe | Million Tonnes of Oil Equivalent |
| MWFEP | Ministry of Waters, Forests and Environmental Protection |
| n.a. | not available |
| NDP | National Development Programme |
| NEPA | National Environmental Protection Agency |
| NH ₃ | Ammonia |
| NIR | National Inventory Report |
| NGO | Non-governmental Organization |
| NMVOC | Non-methane Volatile Organic Compounds |
| NO _x | Nitrogen Oxide |

| | |
|-----------------|--|
| NRP | National Reform Programme |
| NSDS | National Sustainable Development Strategy |
| NSRF | National Strategic Reference Framework |
| NWMP | National Waste Management Programme/Plan (depending on country) |
| OECD | Organization for Economic Cooperation and Development |
| OP | Operational Programme |
| PAF | Protected Areas Fund |
| PCB | Polychlorinated Biphenyls |
| PCT | Polychlorinated Terphenyls |
| p.e. | Population Equivalent |
| PET | Polyethylene Terephthalate |
| PFCs | Per Fluorinated Compounds |
| PHARE | Poland and Hungary: Assistance for Restructuring their Economies |
| PM | Particulate Matter |
| PPP | Public-Private Partnership |
| R&D | Research and Development |
| RDP | Rural Development Plan |
| SAPARD | Special Accession Programme for Agriculture and Rural Development |
| SDS | Sustainable Development Strategy |
| SF ₆ | Sulphur Hexafluoride |
| SIT | Slovenian Tolar |
| SO ₂ | Sulphur Dioxide |
| SPAs | Special Protected Areas |
| TAP | Foundation of Transportable Battery Producers and Importers (Turkey) |
| Tg | Teragram |
| TRY | Turkish Lira |
| UNDP | United Nations Development Programme |
| UNECE | United Nations Economic Commission for Europe |
| UNEP | United Nations Environment Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| USA | United States of America |
| USD | United States Dollars |
| VOCs | Volatile Organic Compounds |
| WB | World Bank |
| WEEE | Waste Electrical and Electronics Equipment |
| WFD | Water Framework Directive |
| WTO | World Trade Organization |
| WWF | World Wide Fund |

Introduction

Environmental issues are becoming an increasingly important element of the economic and business environment. Mitigation and adaptation to climate change, conservation of biodiversity, increased energy security and efficiency, improved quality of living and working environment are challenges that have recently gained the status of the imperative and have direct implications on the economy. In the business context, this trend is manifested in two ways: as a threat and as an opportunity. On the one hand, the introduction of increasingly demanding environmental standards accelerates the contraction of polluting sectors and firms. On the other, a successfully restructured business becomes more resource and market efficient, as well as competitive, while a new kind of demand and rapidly growing 'green' markets create new business opportunities.

New challenges of green economics and environmental financing have gained particular importance on a global scale in the recent years of economic crisis. The financial and economic crises fostered a change of financial architecture and are now searching for additional challenges to 'standard' structural change. Integration of environmental topics into development strategies and green growth have become key development goals.

In 2011 the world economy is slowly recovering from the deepest recession since the Second World War. After the fall of GDP by 0.5 per cent in 2009, strong fiscal and monetary incentives in developed countries resulted with the growth at a rate of 5.1 per cent in 2010. However, the International Monetary Fund (IMF) forecasts growth slowing to 4.3 per cent in 2011 and 4.5 per cent in 2012 due to the necessity of fiscal consolidation. According to IMF forecasts, growth in developing countries will slow from 7.4 per cent in 2010 to 6.6 per cent in 2011, while in developed countries it will be reduced from 3.0 per cent to 2.2 per cent. There is an increased risk that these growth rates are going to be smaller because the recovery in most developed countries has been achieved with the tremendous growth of public debt and the extreme reduction in interest rates, while there are still significant structural problems and the financial sector is faced with a considerable burden of bad marketing. An exceptionally large increase in prices of raw materials (34.5 per cent for oil and 21.6 per cent for other raw materials) in 2011 will increase inflation in developed countries from 1.6 per cent in 2010 to 2.6 per cent in 2011.

2 Introduction

Under these conditions, forecasts for 2012 and the next five years are very unreliable.¹ It is not a simple task for national economies to 'get stronger' by adapting to or even by taking advantage of a rapidly changing and rather unpredictable business environment. The main development challenge for economically powerful countries is inertia, which hinders structural change and requires adaptation to new market conditions. The main development challenge for countries with a weaker economy is the lack of information, expertise, financial and human resources and the achievement of a compromise between the need to accelerate rapid development and environmental protection.

The recent initiatives of international organizations demonstrate the significance of the problem. Since the United Nations (UN) Conference on Environment and Development in Rio de Janeiro in 1992, the United Nations Millennium Declaration, which was adopted in 2000 by the UN General Assembly, puts environmental protection and sustainable development as fundamental and global goals of humanity.

Most European states have set common standards of environmental protection and conservation and they have generally reached the agreed improvements in environmental management. An initial common reflection of environmental protection was initiated by the First Community Environmental Action Programme (1973–1977). Environmental financing appears only in the Fourth Programme (1987–1992), and the notions of polluter pays and user pays were set as two of the principles of the Sixth Community Environmental Action Programme.

Newer member states, such as Romania and Bulgaria, and those that will soon become members, like Croatia, as well as the ones that are in the process of preparation, such as Turkey and Serbia, have mostly aligned or are aligning their environmental legislation with the *acquis communautaire*, but have also agreed the transitional periods which should enable full implementation in practice. It is important to stress that the EU legislation in the field of environmental protection is one of the widest and most complex of about 300 legal documents sorted through several thematic groups: horizontal legislation, air quality and climate change, waste management, water management, industrial pollution control and risk management, chemical noise and nature conservation. The basic policy framework that should finance environmental protection is the polluter pays principle and the user pays principle but it requires prior infrastructural support for the implementation of environmental policies in order to meet environmental standards.

For the implementation of enacted laws, significant investments are needed, from private sector and public sources (either domestic or foreign). Rough estimates show that about 1.5 per cent of the GDP needs to be invested in the environmental sector alone. For example, it is estimated that about €10 billion need to be invested in environmental infrastructure (water, waste and air) in Croatia over the next 20 years. Thus, new financial tools have to be used. As a side effect at the global level, a fairly new discipline called 'environmental financing' is being developed, which is concerned mainly with the use of various financial instruments for the protection of the environment

and biodiversity. As a scientific category, environmental financing can be viewed as part of environmental economics, which undertakes theoretical or empirical studies of the economic effects of environmental policies on local, regional and national development.

At a professional level, environmental financing is mentioned as an instrument used for promoting environmentally beneficial measures through financial institutions or independent funds. Multiple sources of funding for international environmental actions are now available, which in addition to classical forms of financing infrastructural investment through loans include specialized funding mechanisms (e.g. the Global Environment Facility (GEF), UN agencies, international environmental NGOs – WWF, etc.). A very preliminary and rough estimation of only the key global environmental governance institutions suggests that the basic funds being channelled by multilateral institutions, treaty mechanisms, the regional development banks and a few key environmental NGOs add up to nearly US\$10 billion per annum (IISD, 2007). As they generally provide co-financing, at least the same amount is ensured from other sources, indicating that the occurrence of environmental financing is the notion that deserves double attention – conserved environment and incentives for economic development.

Various sectoral national strategies identify needs for heavy environmental infrastructure investments without clear intersections in the implementation of numerous strategies and plans. It is, therefore, a challenge to link sector-specific environmental strategies with financial and budgetary planning on one side and economic development strategies with green business potential on the other.

Through this book waste, air and nature/biodiversity² sectors are analysed in different countries in order to evaluate the level of interconnection within sectors. The analysis was prepared based on background documents and secondary sources trying to develop an overall picture and to support the creation of an enabling economic environment capable of providing long-term financing, and to establish a financing structure in a certain period with the necessary funding coming from different sources motivated by market principles and not just from national budgets or donor agencies.

Communication and future cooperation between the key actors in the establishment and operation of environmental financing will be a further challenge in the study of the role of environmental financing in the development of national economies, especially strengthening cooperation between environmental ministries and ministries responsible for the financial sector, financial institutions and funds in the case of grants.

In most of the analysed countries, legislation is generally harmonized with EU legislation and there is a clear identification of the environmental problem(s) to be solved. The policy approach of the environmental ministries are developed and elaborated with preferential financing measures, sources and methods for necessary financing (general budget, fees or donor funds) which are defined mainly in the environmental financing strategies of individual countries.

It is the responsibility of governments to do everything to implement environmental financing strategies in practice, according to clear environmental policy

4 *Introduction*

framework, to strictly enforce environmental standards; and it is the responsibility of financial institutions to include long-term financing of environmental projects and programmes in their development programmes.

Undoubtedly, the future success of environmental financing schemes will contribute to a safer and more stable development of society in the future.

1 Development strategies, environmental protection and financing

Sustainable development

Global policy framework

The 1992 Rio Summit¹ established sustainable development as the guiding principle for development. Sustainable is ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland, 1987). It integrates economic, social and environmental objectives and recognizes that economic growth is necessary, but not sufficient for economic development.

The principle of sustainable development was integrated in key documents produced at the Earth Summit:

- Agenda 21, the strategy for sustainable policies in 21st century.
- The Rio Declaration on Environment and Development, which states that the only way to long-term economic progress is to link it with environmental protection and health.
- Forest Principles, which deal with sustainable use of forests and balance the need to protect forests (for environmental and cultural reasons) and to use trees and other forest life for economic development.
- The Convention on Biological Diversity, aiming at sustainable use of biological diversity.
- The Framework Convention on Climate Change which sets the long-term objective to stabilize atmospheric greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system, and an overall framework to tackle challenges posted by climate change.

The final declaration of the UN Millennium Summit, the Millennium Declaration, adopted in 2000 and signed by 189 countries, reaffirmed Agenda 21 and outlined the international agenda for development. The Millennium Declaration lists eight interdependent Millennium Development Goals (MDGs) to be achieved by 2015, including environmental sustainability. The interdependence of goals, activities and results at local, regional and global level makes it difficult to formulate, cost, finance and implement adequate policies. Despite

6 *Development strategies*

these difficulties, MDGs articulated a long-term perspective and provided direction for the implementation of development strategies. They called specifically for integration of the principles of sustainable development into country policies and programmes. Based on the Agenda 21 and MDGs each country was expected to adopt its own national sustainable development strategy (NSDS) and begin implementing them by 2005.

EU approach

Sustainable development became a fundamental objective of the EU in 1997, when it was included in the Treaty of Amsterdam. It was reiterated in the Treaty of Lisbon.

The first EU Sustainable Development Strategy was launched by the European Council at the Gothenburg Summit in June 2001. The 2001 strategy was composed of two main parts: the first with objectives and policy measures, and the second which called for a new approach to policy making. Central to this new approach was impact assessment, which was expected to ensure that the EU's economic, social and environmental policies were mutually reinforcing. Persistence of unsustainable trends required revision of the Sustainable Development Strategy (SDS) in 2006. The renewed SDS set overall objectives and concrete actions for seven priority areas:

- 1 climate change and clean energy
- 2 sustainable transport
- 3 sustainable consumption and production
- 4 conservation and management of natural resources
- 5 public health
- 6 social inclusion, demography and migration, and
- 7 global poverty and sustainable development challenges.

However, the issue of Europe's economic competitiveness has dominated the political agenda. Thus, sustainable development has been regarded as a pillar of growth strategies (first the Lisbon Strategy, and since 2011 the EU 2020 Strategy) instead as an overreaching principle.

In accordance with the Agenda 21 and MDGs, the EU SDS also requires the EU member states to develop national sustainable development strategies and stipulates the importance of an external dimension of sustainable development, e.g. the need to tackle global poverty and strengthen cooperation with partners outside the EU. However, sustainable development is still regarded as one of the pillars of growth, and not the other way around.

Within the current EU's growth strategy, Europe 2020, a sustainable economy presents one of the three priorities – the other two being a smart economy and an inclusive economy. Based on these priorities, targets – on employment, innovation, education, social inclusion and climate/energy – were set to be reached by 2020. Inclusion of climate and energy targets (i.e. reducing greenhouse gas emissions by 20 per cent compared to 1990 levels, increasing

the share of renewable in final energy consumption to 20 per cent and moving towards a 20 per cent increase in energy efficiency) among EU 2020 headline targets shows that the Europe 2020 Strategy recognizes that high standards of environmental quality and climate protection are necessary for long-term and sustainable development.

To achieve these targets, previously planned environmental measures have to be fully implemented and unsustainable trends (e.g. relating to loss of biodiversity and natural resources) reversed. Biodiversity conservation is recognized as one of the key environmental challenges of the EU 2020 Strategy (European Council, 2010: 6). The shift to ‘a greener economy’ (European Commission, 2010d), i.e. a safe and sustainable low-carbon and low input economy, will require more efficient and transparent governance structure and adequate investments in environmental protection (European Commission, 2011).

The implementation of the EU 2020 is guided by ten integrated guidelines and headline targets. Based on the guidelines, member states should develop their national reform programmes (NRPs), while the Stability and Growth Pact serves as the framework for the establishment of stability and convergence programmes.

According to the integrated guidelines the use of environmental taxation is seen as an instrument for achieving public finance stability. Shifting tax burden on environmentally harmful activities is considered as a measure that opens the space to lowering the tax burden on growth enhancing categories (e.g. labour) and boosts green growth, green technologies and green jobs, which is a long-term reform goal. The European Economy Recovery Plan tries to ensure consistency of the short-term anticrisis measures with the long-term goal: the transition of the EU towards an inclusive low-carbon and knowledge-based economy, as defined by EU SDS and EU 2020.

Based on the common principles (Agenda 21, MDGs, and for the EU member states EU SDS) each country was expected to prepare its sustainable development strategy.

Thus, NRPs should define short-term measures (for a three-year period) enabling economic recovery and reaching sustainable development goals, as defined by NSDS.

National policies

Slovenia

In 2005 Slovenia adopted the Development Strategy (Šušteršič *et al.*, 2005) for the period until 2013. The Development Strategy represents Slovenia’s SDS and at the same time transposed the Lisbon Strategy goals into the national environment. The Development Strategy defines the vision and goals of the development of Slovenia and provides guidelines for institutional and development reforms after accession to the EU.

The Strategy serves as a long-term umbrella document for development planning and promotes principles of sustainable development and integration of