

ENVIRONMENTAL POLLUTION REGULATIONS

Prabir Ganguly

Centre for European Studies, VSB-Technical University of Ostrava, Ostrava-Poruba, Czech Republic

Keywords: Human rights; environment; pollution control regulations; philosophy; principles and policy; characteristics of pollution regulations; mandatory sector-specific regulations; integrated pollution prevention and control; voluntary regulations; miscellaneous tools for pollution control access to information; education and awareness; public participation; economic instruments.

Contents

1. Introduction
 2. Human rights & environmental protection
 3. Meaning of environmental pollution regulation
 4. History and trends of environmental pollution regulation
 - 4.1 The historical context
 - 4.2 Modern trends in regulatory practice
 5. Basic philosophies, principles and policies of pollution control
 - 5.1 Guiding philosophies for pollution control
 - 5.2 Basic principles governing pollution control regulations
 - 5.3 Pollution control policy
 6. Pollution control legislation
 - 6.1 Characteristics of pollution control legislation
 - 6.2 Different sectors of pollution control
 - 6.2.1 Planning and pollution control
 - 6.2.2 Regulatory control of contaminated land
 - 6.2.3 Air pollution regulation
 - 6.2.4 Water pollution regulation
 - 6.2.5 Waste control regulation
 - 6.2.6 Noise Pollution Regulation
 - 6.2.7 Integrated pollution prevention and control
 - 6.3 Voluntary pollution control
 - 6.4 Other tools for pollution control
 - 6.4.1 Access to information
 - 6.4.2 Public participation
 - 6.4.3 Environmental education and awareness
 - 6.4.4 Economic instruments
 - 6.4.5 Reliance on market forces
 - 6.4.6 Enforcement
 7. Concluding remarks
- Acknowledgements
Glossary
Bibliography
Biographical Sketch

Summary

An overview of the state-of-the-art in environmental pollution regulations is presented here, starting from the right of human beings to live in a decent environment as enshrined in the Stockholm and Rio Declarations under the auspices of the United Nations. After elaborating on the meaning of environmental pollution regulation, an attempt has been made to trace the history of evolution of pollution control regulations and their characteristic changes during the evolutionary process. A short introduction to the contemporary philosophies of pollution control is then given to explain the seven basic principles that underpin modern regulatory policy and practices. The discussion focuses on the characteristic features of present pollution control regulations, with particular emphasis on sectoral regulations on planning control, contaminated land, air and water pollution, waste control, and noise pollution. Given the shortcomings of the compartmental approach to regulation, the discussion also includes integrated pollution prevention and control regulations—a new breed of regulations for the integrated control of processes and products.

No doubt mandatory regulations are very important for pollution control. But they are only part of the answer to the problem, and so other tools have to be introduced such as public participation, access to information, environmental education and awareness, economic instruments, reliance on market forces, and enforcement. It is pointed out that public consultation, public agreement and consensus can strongly reinforce regulatory practices for environmental pollution control.

1. Introduction

One of the major tasks of safeguarding the environment—clearly a new challenge facing humanity—is the regulation of environmental pollution. In the increasingly industrialized society today, there is growing concern over environmental pollution issues that are relevant not only in the local, regional or national context, but also in the global context. Pollution is the result of human activities going back to pre-history. But the scale to which it has grown in recent decades, and the growing threat it poses, became apparent not very long ago. Although pollution regulation records are available from the thirteenth century, and specific pollution control regulations had been enacted in the nineteenth century, it is only after the Second World War that the need for comprehensive legislative control over pollution issues became increasingly evident in both national and international contexts. It can be said with some degree of certainty that, within the bounds of existing scientific knowledge, an array of complex legislative measures has been established by international organizations and by different nations to combat environmental pollution.

The discussion presented herein is an overview of the state-of-the-art in environmental pollution regulations. It has been divided into sub-topics to make the text easier to follow.

2. Human rights and environmental protection

The right to life is a fundamental human right. Many national and international documents link this right to the right to a quality environment and emphasize the duty of the State to protect the environment. The 1972 Stockholm Declaration, adopted by the UN Conference on the Human Environment (UNCHE) in June 1972, proclaims that “...human beings have a fundamental right to freedom, equality and adequate conditions of life in an environment of a quality that permits a life of dignity and well-being and bears a solemn responsibility to protect and improve the environment for present and future generations”.

The 1991 United Nations Report on Human Rights and the Environment proclaims that “the right to the environment should fit quite naturally into the normative and institutional structure of protection of the rights, dignity and freedoms of the human being”. This Report states furthermore that the right to a decent environment cannot be reduced to an individual right. Thus, such rights remain only as a statement of intent by consenting nations without the power of sanction or redress. The Stockholm Declaration, therefore, reflects only the political and moral commitments of national governments, but it does not provide legally-binding provisions regarding the relations between the States and individuals with respect to environmental quality. Nevertheless, today the Stockholm Declaration is broadly recognized as the cornerstone of modern environmental regulatory principles, as evidenced by its growing practical application (by the incorporation of many of the principles of that declaration into treaties, conventions, national laws, etc.).

Referring once again to the right of humans to a quality environment, it is possible to examine further milestones in the development of regulatory practices. One of these is the World Charter for Nature adopted by the United Nations General Assembly (UNGA) in October 1982. It is pointed out, however, that this document does not seem to have any greater legal effect than the Stockholm Declaration. The next milestone is the Report of the World Commission on Environment and Development (WCED) commissioned by the UNGA. The WCED experts, building on the elements of Principle 1 of the Stockholm Declaration, proposed that “all human beings have the fundamental right to an environment adequate for their health and well-being”. However, this was not taken seriously by the UNGA, by the Preparatory Committee of the United Nations Conference on Environment and Development (UNCED), or by the Rio Conference itself. The reason was simple: it was that the governments participating in the UNCED process were unwilling to accept it. Seen from this viewpoint, the Rio Declaration was a backward step. Because, whereas the Stockholm Declaration affirmed the sovereign right of States to exploit their own resources pursuant to their own *environmental* policies, the Rio Declaration affirmed the sovereign right of States to exploit their own resources pursuant to their own *environmental and developmental* policies. The philosophy of the Principle 2 of the Rio Declaration has further been manifested in the Framework Convention on Climate Change, Convention on Biological Diversity and Statement of Principles on Forests. The Rio Declaration does not refer to the right of human beings to a quality environment. In fact, in Principle 1 it merely states that “human beings are entitled to a healthy and productive life in harmony with nature”. This raises the complex question of the relationship between right to life and quality environment on one hand, and productivity and development on the other. If the crux of the matter is development, then one may reasonably ask questions about “what

development”, “whose development”, etc.

The Rio Declaration is the result of many compromises, and it endorses many of the modern environmental principles that are universally accepted. It is characterized by many features, included for subtle reasons, that may not be considered by many observers as being environment-friendly in the global context. The basic reasons for this are: workings of the prevailing free-market economic system; need to achieve economic growth; and emphasis on national economic sovereignty over international environmental obligations. Some of these features are enumerated below:

- (1) Paragraph 2 (a) of the Statement of Principles on Forests declares, “States have the sovereign and inalienable right to utilize, manage and develop their forests in accordance with their developmental needs and level of socio-economic development and on the basis of national policies consistent with sustainable development and legislation”. This provision can be interpreted to mean that national forest policies are not required to be formulated in accordance with environmental obligations to international treaties, conventions, etc.
- (2) Principle 13 of the Rio Declaration affirms that “States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage”. This is a backward step, as it restricts the issue of liability and compensation only to the ambit of national law. By contrast, the same issue in the Stockholm Declaration clearly speaks of the development of international law.
- (3) Principle 1 of the Rio Declaration affirms that “human beings are at the center of concerns for sustainable development”. The Document does not acknowledge that human beings are only a part of nature and that all other species, whatever their worth might be, have the right to exist too.
- (4) Principle 12 of the Rio Declaration proclaims that “State should cooperate to promote a supportive and open economic system that would lead to economic growth and sustainable development”.

Ever since the publication of the WCED Report (*Our Common Future*), the term “sustainable development” has become an integral part of the environmental vocabulary, meaning environmentally sound development. It is to be pointed out, however, that “sustainable development” as defined in the WCED Report is really “a new concept for economic growth”. As a result, the term “sustainable development” has slowly regressed to “sustainable growth” and then to “sustained growth”.

The WCED Report, even before the Rio Declaration, therefore affirms that the promotion of economic growth in developing countries is essential to addressing their problems of environmental degradation. It also stresses the importance of a supportive international economic climate that would lead to sustained economic growth and development in all countries. Subsequent texts adopted at UNCED also support the same vision.

In 1994, the UN Sub-Commission on Prevention of Discrimination and Protection of Minorities observed that the constitutions of over sixty States contained provisions

relating to the protection of the environment, and that an increasing number of constitutions explicitly recognized and placed the State under a duty to protect human rights to a satisfactory environment. It observed that there had been a tangible shift towards the right to a healthy and decent environment. The essential elements of that right include the right to development, and life and health, and it implies a right to the due process of law, to public participation in environmental decision-making, to access to information concerning the environment held by public authorities, and to access to effective national remedies.

3. Meaning of environmental pollution regulation

The word “environment” is commonly used to mean “surroundings”. It always refers to a certain object that is surrounded by its environment. Albert Einstein provided a simple definition of environment as “...the environment is everything that isn’t me”. Therefore, the term “human environment” conveys the sense of the “surroundings of human beings”. Although this seems to be a fascinatingly simple definition, it cannot be used as an operational definition especially in the context of legal issues. Clearly, for the purposes of environmental legislation, there must be a legal definition of “environment”. The legal definition carries a more specific meaning and is understood to be the physical surroundings that are common to human beings including the natural resources of land, air and water, and the flora and fauna that inhabit them.

Definition of “pollution” is difficult as water, air or land is never pure in their natural states. The identification and assessment of pollution is also very difficult. However, there is general agreement on two essential features of environmental pollution: that pollution is of human origin, and that excessive pollution can cause harm to human health or the quality of environment. This philosophy is reflected in the European Commission Directive on Integrated Pollution Prevention and Control, which defines “pollution of the environment” as:

“... the direct or indirect result of human activity, of presence of substances, vibration, heat or noise into the air, water or land which may be harmful to human health or quality of the environment, and which may result in damage to material, property, or interfere with amenities and other legitimate use of the environment”.

The words “harmful” and “damage” play important roles in the definition of pollution. Mere presence of a substance in a certain medium is not enough to cause harm or damage. There must be an unwanted effect to cause harm or damage. Extraneous substances, while present in the media, must exhibit through their distribution, concentration and physical or chemical behavior that there is a harmful or damaging consequence. Often it is not the nature of the pollutant itself that makes it a pollutant. Rather, it is the circumstance in which it is present, and often the attitude of the people affected by it and on their value judgments.

Regulation is essentially a process that controls some substances or processes for different reasons. In the present context it is understood to be the prime legal tool to combat environmental pollution. It is essentially the use of a certain set of specific rules

to prevent or reduce pollution and its consequences. These rules may be those of criminal or civil law, private non-legal rules, or the rules of the free market. However, when one talks of direct regulation of environmental pollution, it is understood as the use of rules by public bodies to combat pollution. On the basis of the above, environmental pollution regulations may be defined as a set of specific rules (of criminal or civil law, private non-legal rules, rules of free market, etc.) designed, implemented and enforced by local, regional, national or international bodies to prevent or reduce harm to human health and environmental quality, and to reduce damage to material or property arising out of the direct or indirect human activity leading to the introduction of harmful or damaging substances, vibration, heat or noise into the air, water or land.

4. History and trends of environmental pollution regulation

4.1 The historical context

Environmental resources, their utilization by human beings and the consequence of such utilization has led to the evolution of environmental protection regulations that are broadly divided in two groups: regulation pertaining to the conservation of natural resources, and regulations for controlling environmental pollution.

As far as environmental pollution regulations are concerned, the first known attempt to protect people from the consequences of human activities endangering the environment was made in 1273 when King Edward I of the United Kingdom issued a decree prohibiting the burning of sea coal in order to protect the health of his subjects.

Some such sporadic, local and largely ineffective attempts were made at that time, in the eighteenth century and during the Industrial Revolution. Manufacturing industry was at its infancy at that time, and economy was based almost exclusively on rural agriculture. Thus it was not possible for man, and the technology upon which he relied, to cause any radical or perceptible change to the environment. At that time there were only local environmental problems in areas of high population density.

However, with the dawning of the Industrial Revolution, expansion of colonies and the need to maintain them, as well as the need to satisfy certain basic preconditions for a viable economy, the focus shifted to the following considerations:

1. The environment is the source of energy and materials that can be transformed into goods and services.
2. The environment acts as a vast sink for wastes and polluting substances generated by human activities.
3. Environmental resources are the basis of all human development, and, therefore, limits should be set to such development.
4. High rate of depletion of environmental resources, and increased pollution and wastes, are at the root of many environmental problems faced by society.

Thus the second phase of environmental pollution regulation was ushered by the need to deal with growing pollution, wastes, and other problems that often created totally

unpleasant social conditions. In the United Kingdom, this was witnessed by the revival of the tort of nuisance, The Alkali Act of 1863, establishment of the Alkali Inspectorate (the world's first pollution control agency), water pollution statute of 1861, Clean Air Act of 1956, and others. During this phase comprehensive statutory control regimes were developed, but the objectives of such legislation were limited to the nature and quantity of the pollutant themselves. There was little or no understanding of how pollution could degrade the wider natural environment of entire nations, regions or continents.

Concern for the environment grew substantially after Second World War. Starting from the 1960s, a series of activities can be identified that were of concern for the environment. This provided the impetus to regulate the impacts of pollutants on the biosphere as a whole by imposing appropriate quality standards. The other contributory factor has been the emergence of OECD and the United Nations, as well as pressure groups in the United States and the European Community, to initiate environmental actions and influence policy.

However, the regulatory regime for pollution prevention naturally suffers from many defects, notably that compliance with regulations, conceived as a set of criminal and civil rules of law administered by public bodies, are costly to enforce and monitor. The standards in pollution regulations are the minimum requirements to be complied with, and sanctions are applicable when they are not.

The polluters take those legal standards as norms and make no effort for further environmental improvement. The standards that are used to restrict emission levels of pollutants are based on technical feasibility and are wrapped up in terms such as “best practicable means”, “best available technology not entailing excessive costs”, etc. The use of such terms leads one to believe that technical and economical reasons may override the environmental priorities.

Considering the cost of the regulatory process (set of rules enforced by public bodies) and its inherent flaws, it might be necessary to find acceptable alternatives. But whether such alternatives could be found remains an open question.

-
-
-

TO ACCESS ALL THE 39 PAGES OF THIS CHAPTER,
Visit: <http://www.eolss.net/Eolss-sampleAllChapter.aspx>

Bibliography

Agius E., Busuttill S. (1998). *Future Generations and International Law*, 208 pp., United Kingdom: Earthscan Publications Limited. [A collection of papers with new insights into the responsibility of international law to future generations].

Ball S., Bell S. (1995). *Environmental Law*, 546 pp., United Kingdom: Blackstone Press Limited. [This book looks at the general issues that cut across all issues of environmental protection and then examines specific environmental laws].

Burnett-Hall R. (1995). *Environmental Law*, 1168 pp., London, United Kingdom: Sweet & Maxwell. [This is an excellent book which in one volume provides what law years are likely to know on applicable environmental law, particularly in the UK and the EU].

Dupont R. R., Baxter T. E., Theodore L. (1998). *Environmental Management*, 334 pp., USA: Lewis Publishers. [This is the work of a group of authors who have presented problems and solutions on issues of environment management].

Ercmann S. (1996). *Pollution Control in the European Community*, 822 pp., Kluwer Law International Ltd. [This guidebook contains all EC pollution control texts and provides information on the implementation of EU environmental legislation by the Member States].

Facchetti S., Pitea D. (1995). *Chemistry and Environment: Legislation, Methodologies and Applications*, 532 pp., Brussels and Luxembourg: Kluwer Academic Publishers. [This book introduces a series of papers from a course organized to introduce chemists to environmental issues].

Garbutt J. (1996). *Environmental Law - A Practical Handbook*, 184 pp., United Kingdom: John Wiley & Sons Ltd. [This handbook provides general practitioners of law with an overview of the present state of environmental law in the UK].

Gouldson A., Murphy J. (1998). *Regulatory Realities - The Implementation and Impact of Industrial Environmental Regulation*, 178 pp., United Kingdom: Earthscan Publications Limited. [This book analyses the nature of industrial regulations and compares their implementation and impacts in the UK and the Netherlands].

Kiss A., Shelton D. (1991). *International Environmental Law*, 542 pp., New York, USA: Transnational Publishers, Inc. Ardsley-on-Hudson. [This book gives an introduction to the major international legal norms aimed at protecting the environment].

Lang W. (1995). *Sustainable Development and International Law*, 326 pp., United Kingdom: Graham Trotman / Martinus Nijhoff. [An excellent book on the subject compiled from the works of several authors].

Leeson J. D. (1995). *Environmental Law*, 482 pp., London, United Kingdom: Pitman Publishing. [This book provides a source of materials with general exposition and commentary, especially for those with a non-legal background].

Malcolm R. (1994). *A Guidebook to Environmental Law*, 260 pp., London, United Kingdom: Sweet & Maxwell. [The book deals with different aspects of environmental law and forms a cohesive perspective on the subject].

Nath B., Hens L., Compton P., Devuyt D. (1993). *Environmental Management - Volume II - The Ecosystems Approach, Volume III - Instruments for Implementation*, 256 pp., Brussels, Belgium: VUB University Press. [This book focuses on a holistic approach to environmental management].

Nath B., Hens L., Devuyt D. (1996). *Textbook on Sustainable Development*, 368 pp., Brussels, Belgium: VUB University Press. [This textbook gives an overview of the state-of-the art in Sustainable Development and tries to answer a number of questions on related issues].

Robinson N. A. (1997). *Comparative Environmental Law and Regulation 1 and 2*, New York, USA: Oceana Publications. [This book gives much information on the evolution of environmental law in different countries of the world].

Sands P. (1993). *Greening International Law*, 262 pp., London, United Kingdom: Earthscan Publications Limited. [This book is a collective work addressing and defining major international legal issues of sustainable development].

Thornton J., Beckwith S. (1997). *Environmental Law*, 316 pp., London, United Kingdom: Sweet & Maxwell. [As a textbook for law students, this book gives a lucid description of numerous and interdependent provisions].

Werksman J. C. J., Roderick P. (1996). *Improving Compliance with International Environmental Law*, 342 pp., London, United Kingdom: Earthscan Publications Limited. [A collective work aiming at improved understanding of how international environmental agreements operate and how compliance with their provision might be improved].

Wolf A. (1997). *Quotas in International Environmental Agreements*, 198 pp., London, United Kingdom: Earthscan Publications Limited. [This book gives a timely critical examination of quotas as regulatory tools and as products of negotiation].

Biographical Sketch

After graduating from Calcutta University (India) in 1967, **Dr. Prabir Ganguly** worked for four years in Indian coal mines in various capacities, rising to the position of Manager of a large coal mine. In 1971 he went to what was then Czechoslovakia to do his PhD, which he completed in 1975. He worked in the coal industry in India until 1980 as a senior planning engineer. In 1980 he took up an assignment to work at the University of Liberia in West Africa. He completed this assignment in 1986, following which he joined the Faculty of the Technical University of Ostrava in the Czech Republic. During his tenure at that university he became head of the Institute of Environmental Engineering and "Phare Project Management Cell" of the university. Currently he is the Director of the Centre for European Studies of that university.

Dr. Ganguly has been responsible for organising and participating in several international postgraduate teaching and training programmes sponsored by the Commission of the European Communities, as well as a number of international conferences and seminars.

Dr. Ganguly has published widely, mainly on sustainable development, environmental protection and related issues. He is on the Editorial Board of the journal, *Environment, Development and Sustainability* published by the Kluwer Academic Publishers of Dordrecht, the Netherlands.