



APAT

Agenzia per la protezione dell'ambiente
E per i servizi tecnici

Key Topics

Environmental Data Yearbook

2007

**ENVIRONMENTAL PROTECTION AGENCIES OF THE REGIONS AND
AUTONOMOUS PROVINCES**

LEGAL INFORMATION

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*Sic unum quicquid paulatim protrahit aetas
in medium ratioque in luminis erigit oras¹...*

*Titi Lucreti Cari – De rerum natura
(Liber V, 1454-1455)*

¹ Little by little, time reveals all things, and reason brings them to light...

FORWARD

The need to find effective responses to complex situations and developments, such as those involving the environment and human activities, has come to represent a full-fledged emergency.

The recent National Conference on Climate Change has brought to light the exceptional nature of the state of our planet at present, pointing to the wisdom of a dual response: on the one hand, actions focussed on the causes of the changes and, on the other, the promotion of suitable measures for adjusting to the new climatic conditions. Such efforts call for clear, reliable, constantly updated information capable of promptly describing the ongoing development of trends and situations, in order to gain an understanding of their magnitude and prepare suitable countermeasures.

APAT, with the invaluable assistance of the Environmental Protection Agencies of the Regions and the Autonomous Provinces, has always played a role of fundamental importance in the production, processing and dissemination of official environmental information in our country.

The experience accumulated over time by the whole System of Agencies has made it possible to construct a solid and reliable base of information that is always capable of responding to the demand for knowledge in the environmental sector. In order to draw the greatest possible benefit from a similar resource, I shall take it upon myself to ensure that the entire System is strengthened and that it operates in harmonious fashion.

The present publication, the fruit of the work of numerous, highly qualified professionals, constitutes a valid source of knowledge, capable of providing technical-scientific information that proves complete and reliable. I am convinced that those reading it in order to understand or to obtain in-depth information on the environment and its proper management will inevitably find the document to be of noteworthy interest.

Alfonso Pecoraro Scanio
Minister for Environment, Land and Sea

INTRODUCTION

The APAT Yearbook, being published for the sixth year, can be considered the most extensive and complete collection of official environmental data published in Italy.

The work is the result of the activities carried out by the Agency, in accordance with the institutional tasks assigned to it under the Law, involving the collection and dissemination of environmental information.

As in years past, a key factor in preparing the product has been the synergy established between APAT and the Environmental Protection Agencies of the Regions and the Autonomous Provinces.

Nor would it be right to omit mention of the invaluable contribution made by the many technical-scientific bodies, the so-called Main Reference Institutions, which have provided Agency with support throughout the formulation of the work, and especially during the phases in which the data was confirmed and the information was processed.

The **Full Version of the Yearbook** contains all the information forms filled out during 2007, organised by production sectors, environmental conditions and responses. Its purpose is to provide as detailed an illustration as possible of the environmental topics addressed.

There are a number of new features compared to the earlier editions. The topic area *Atmosphere* has been supplemented with the topic “Climate”, which contains new indexes. In the topic area *Hydrosphere*, a special topic on coastlines has been introduced. The topic area *Industry* contains a new index of eco-efficiency.

The full edition for this year holds more than 270 indicators, of which 10 are new and 190 updated. Of this last group, 60% were updated between 2006 and 2007.

Starting with the 2007 edition, the full version shall be presented annually only in the electronic format (PDF) and made available on CD-ROM and at the sites www.apat.gov.it and <http://annuario.apat.it>; the paper format of the publication shall be published once every three years.

In addition to the full version, the core information shall be provided in three other products:

- **Key Topics** – A version containing supplementary information on priority environmental issues that have been the subject of specific initiatives of prevention and reclamation;
- **Vademecum** – An extremely abbreviated version (pocket) of the assessments contained in the preceding volume;
- **Database** – An instrument designed for telematic consultation of the indicator fact sheets and the production of reports.

With the volume **Key Topics**, APAT has set out to present a possible mode of use of the information base of the Yearbook for evaluating contextual situations regarding the environmental topics that currently constitute the priority concerns of environmental policies. Indeed, in the case of many of the areas considered, the topics addressed are the same as those found in the EU's 6th Environmental Action Plan.

And there is no question that climate change, environment and health, the use of resources and waste generation constitute subjects regarding which the general public wishes to be kept informed.

The same topics are addressed in extremely abbreviated form in the *Vademecum*. In this case the intended purpose is to provide, through the selection of pieces of information that are few in number but extremely significant, an immediate overview of the situations and developments described.

In-depth study of the topics based on the data collected by APAT may still be carried out using the Yearbook **Database** and the **full version** of the publication.

The creation of a number of different information products using the same database is explained by the need to render the elements of knowledge in possession of the Agency available for use in as extensive and varied a manner as possible. Everyone from public-sector decision-makers to researchers to stakeholders to citizens must be provided with the opportunity to access the environmental information. As I have stressed on a number of occasions, I hold that APAT's work in terms of disseminating information can make a noteworthy contribution to the key function of increasing the knowledge of all citizens regarding environmental issues, a fundamental precondition to the success of policies for heightening public awareness.

It is to be hoped that APAT shall always meet with success in carrying out this important task, and I shall take it upon myself to ensure that it always receives all the resources, both intellectual and material, necessary for doing just that.

Giancarlo Viglione
President of APAT

CONTRIBUTORS and THANKS

General considerations

As is known, the Agency's main institutional tasks include coordination of the entire life cycle of environmental information, running from the production of the core set of data up through the dissemination of the information, and including the phases of management, processing and assessment. To this end, it began publishing the Yearbook some time ago, updating its information base annually.

The publication is fruit of a complex work of analysis carried out by a noteworthy number of the technical units of the Agency most directly involved in activities of environmental reporting, and specifically the following departments: State of the Environment and Environmental Metrology; Marine and Inland Waters Protection; Land Resources and Soil Protection; Nature Protection; Nuclear, Technological and Industrial Risk; Library, Documentation and Information; Inter-Departmental Services; Environmental Emergencies; Environmental Information; Guidance, Coordination and Control of Inspection Activities; and Environmental Certification. Equally important were the contributions of the ARPA/APPA agencies, plus the numerous technical-scientific bodies.

As in past years, the information base of the Yearbook shall once again be presented in the form of various products: a document, in both the Italian and English languages, addressing a number of environmental topics of relevance to the European Community, with the information elements presented in abbreviated form; a pocket *Vademecum* touching on the key elements of the environmental topics; the database of the indicators found in the Yearbook, plus the full version in the Italian language.

Starting with this edition, the full version shall be drawn up annually in the electronic format, available from the month of March 2008 on CD-ROM and at the websites www.apat.gov.it and <http://annuario.apat.it/>. The paper version shall be published once every three years.

The planning and coordination of the overall production of the work are handled by the State of the Environment and Environmental Metrology Department, through the Special Yearbook Project and Environmental Statistics Service.

Specific contributions to the present document

Purposes of the document, structure of the document

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The Group has also handled the preparation of specific techniques, together with the related guidelines, for compilation of the indicator fact-sheet and the Yearbook Indicators Database, as well as the integration of the contents of the work, the processing and statistical control of the data published and the overall technical review of both the information contents and the methodological/editing techniques used on those contents.

Information contents – APAT Reference Units

The work involved in the preparation of the information contents of the “Environmental Data Yearbook” was carried out by a Task Force coordinated by Mariaconcetta GIUNTA.

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The full meanings of the symbols for the departments, inter-departmental services, services and sectors are spelled out below:

Departments/Inter-Departmental Services	SYMBOL
Office of the Provisional Commissioner	DIR
Communications Service	DIR/COM
Inter-Departmental Service for Guidance, Coordination and Control of Inspection Activities	ISP
Inter-Departmental Service for Environmental Certification	CER
Department for Land Resources and Soil Protection	SUO/DIR
Service of Background Investigations, Basin Plans and Data Collection	SUO/IST
Natural Risks Service	SUO/RIS
Department for Marine and Inland Waters Protection	ACQ/DIR
Coastal Protection Service	ACQ/COS
Service for the Monitoring and Hydrology of Inland Waters	ACQ/MON
Service for the Lagoon of Venice	ACQ/VEN
Department for the State of Environment and Environmental Metrology	AMB/DIR
Special Yearbook Project and Environmental Statistics Service	AMB/ASA
Service for the Monitoring and Prevention of Atmospheric Impact	AMB/MPA
Physical Agents Service	AMB/AGF
Environmental Metrology Service	AMB/LAB
Environmental Assessment Service	AMB/VAL
Environmental Reporting and Instruments of Sustainability Service	AMB/RAS
Waste Service	AMB/RIF
Department of Nuclear, Technological and Industrial Risk	RIS/DIR
Industrial Risk Service	RIS/IND
Radiometric Measurement Service	RIS/LAB
Department of the Protection of Nature	NAT/DIR
Service for the Sustainable Use of Natural Resources	NAT/SOS
Service for the Protection of Biodiversity	NAT/BIO
Department of Library, Documentation and Information Activities	BIB/DIR
Environmental Education and Training Service	BIB/FOR
Library Service	BIB/DOC
WEB Portal Service	BIB/WEB

Authors of information contents

A detailed listing of specific contributors (authors and collaborators for the specific topics) shall be included at the start of each chapter of the full version in the electronic format.

Contributions of the Agency System

The contribution of the System was greatest during the phases involving the collection of the data and the formulation of the methodologies.

Other contributions from the APAT Technical Units

Other specific **technical contributions** were made by the APAT Units, including:

- on topics regarding the environment and wellbeing, the quality of urban areas, monitoring, the atmosphere, waste and the production sectors of energy, industry, tourism and transportation, from the State of the Environment and Environmental Metrology Department;
- on topics regarding water resources, from the Marine and Inland Waters Department;
- on topics regarding the soil and natural risks, from the Land Resources and Soil Protection Department;

- on topics regarding the biosphere and the agricultural production sector, from the Nature Protection Department;
- on topics regarding ionising radiation and anthropogenic risk, from the Nuclear, Technological and Industrial Risk Department;
- on topics involving the promotion and dissemination of environmental culture, from the Library, Documentation and Information Activities Department;
- on the topic of control, from the Inter-Departmental Service for Guidance, Coordination and Control of Inspection Activities;
- on considerations regarding the environmental quality of organisations, firms and products, from the Inter-Departmental Service for Environmental Certification.

Specific contributions *on considerations of methodology and liaison* were supplied by:

- SISTAN interface, through the APAT Statistics Office: Mariaconcetta GIUNTA;
- the chapter on the Promotion and Dissemination of Environmental Culture: the CIFE Workgroup and the library network of the Agency System;

Other contributions by APAT Units

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- procedural and administrative considerations: Vincenzo PEZZILLO, Elisabetta GIOVANNINI;
- administrative considerations: the Department of General Services and Personnel Management and the Inter-Departmental Service for the Administration and Planning of Activities. With regard to the activities involved in carrying out tenders, the Tender and Contracting Sector;
- the functional support was overseen by Elisabetta GIOVANNINI, Roberta RASTELLI, Maria Loreta VITELLOZZI.

Contributions by Subjects outside of the Agency System

Numerous contributions from central and local government bodies have also been drawn on, as well as from technical-scientific structures and individual experts in different sectors.

With reference to government bodies, specific mention should be made of: the departments of the Ministry of the Environment, Land and Sea, the Ministry of Economic Development, the Ministry of Cultural Resources and Activities, the Ministry of Infrastructures, the Ministry of Agricultural, Food and Forestry Policies, the Ministry of Health, the Ministry of Transport, the Carabinieri Police Command for the Protection of the Environment, the Italian National Forestry Corps, the Manager of the National Transmission Network, the Marine Environmental Unit of the Harbourmasters' Corps, the National Fire-Fighters' Corps, the Regional and Provincial Waste Observatories, the Commissioners for the Waste Emergencies in the Regions of Campania, Calabria, Apulia and Sicily, the regional, provincial and municipal governments, the PMP and local government bodies. Of the technical-scientific authorities and organisations, both public and private, the following should be acknowledged: the ICRAM, the ISTAT, the ISS, the basin authorities, the magistrates of bodies of water, the CNR (IIA, IRSA, ICT, IMAA, III), the ACI, the ENEA, the Italian Glaciological Committee, the Italian Meteorological Society, the ENEL, the European Soil Bureau of the Common

Research Centre of the European Commission in Ispra (VA), EUROSTAT, Agecontrol S.p.A., Biobank, the National Register of the organisations EMAS, ISTIL, ODYSSEE, TELEATLAS, TERNA and Tethys.

Referees

As was done with previous editions, in addition to the numerous contributions received from subjects (individual experts and organisations) outside of the Agency System during the phases involving the formulation and production of the present document, it was held best to request an additional and independent assessment of the final product from experts on the individual topics addressed in the publication.

These experts shared their comments, though it was not always possible to transpose them into modifications of the present edition, both because of the limited time available and on account of the lack of basic data. We shall be sure to return to these comments in editing subsequent editions.

The following individuals, after being consulted, have provided supplementary observations and contributions:

Gianfranco BOLOGNA (WWF Italia), Fabrizio BULGARINI (WWF Italia), Sergio CASTELLARI (Punto Focale Italiano IPCC), Pietro COMBA (ISS), Giovanna FINZI (University of Brescia), Filippo GIORGI (ICTP), Alessandro Maria MICHETTI (University of Insubria - Como), Romano PAGNOTTA (IRSA CNR) and Michele VURRO (IRSA-CNR).

Thanks

Heartfelt thanks are once again expressed to those whose contributions have made publication of the 2007 edition of the Yearbook possible.

The listing of those who have contributed in one way or another, an exercise that may prove tedious but is definitely deserved, further demonstrates, were there any need for such evidence, the complexity of the work behind this volume, which increasingly constitutes an indispensable reference for those who use environmental data and information in the course of their own activities or in order to keep themselves up-to-date on our country's environmental status.

These thanks go to everyone, including those who, though they contributed, are not explicitly mentioned. A few names may have been left out by mistake. We ask these people to accept our most sincere apology.

Finally, we ask that readers send us any observations and suggestions for modifications they might have, so that, on the strength of such contributions, we can continue our ongoing improvements in the development of the Yearbook.

Roberto Caracciolo
Director of the State of Environment and
Environmental Metrology Department

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Objectives and Structure of the Document

Objectives

The volume presents an abbreviated analysis of a number of major environmental topics considered by the European Union to be “priority areas for policy initiatives”.

Unlike the complete edition, which is designed to make a direct and, to a certain extent, “raw” presentation of the environmental information by means of individual indicator fact-sheets, the purpose of this work is to describe select topics through a cohesive organisation of the data that make up the information base of the Yearbook. These data are arrayed in a “system”, in order to provide the reader the value-added of their causal integration.

The end result is a pondered analysis of the environmental information found in the individual indicator fact-sheets that make up the full version.

The volume also sets out to achieve another important objective: that of proving to be easily accessible to a wide range of users. This goal, which regards the sphere of the modes through which the environmental information is transmitted, is pursued by utilising modern reporting techniques, together with a language that proves both clear and rigorous.

In order to attain this objective, particular importance has been placed on the graphic presentation of the information, using special information boxes that are often accompanied by extensive comments capable of explaining not only the individual image but also the broader trend or situation being investigated.

Structure of the Document

As noted, the document addresses environmental topics of primary importance to the European Community, using the information base constituted by the indicator fact-sheets found in the Yearbook Database, as well as in the full version. Each topic has been developed by drawing on the information content of the fact-sheets, making necessary, first and foremost, an attentive selection of the information, as well as a different organisational approach, meaning one better suited to the characteristics of the new product.

The work consists of six chapters: the first five dedicated to a different environmental topic, while the sixth chapter focuses on the instruments of environmental knowledge. The following causal logic has been used to describe each environmental topic: first the present environmental situation is illustrated, then the causal factors of this situation are analysed and, finally, a description is given of the solutions implemented or to be aimed at in the future.

It should also be remembered that there are three different methods for consulting chapters one through five. By using the text, the reader obtains a complete and exhaustive analysis of the topic; the “focuses” in the margin serve for rapid identification of the topics addressed prior to deciding whether to examine them in depth; by consulting the graphic boxes, the reader can obtain information that is sufficiently complete, though limited to the individual situation or development illustrated.

Included as an appendix is a thorough description of the Yearbook Indicator Database, the instrument from which the information elements used in the present volume have been taken.