



ISPRA

Institute for Environmental
Protection and Research

**ITALIAN ENVIRONMENTAL
DATA YEARBOOK 2008**

VADEMECUM



ARPA ENVIRONMENTAL
PROTECTION
AGENCIES OF REGIONS
AND AUTONOMOUS
PROVINCES

APPA

ISPRA Database has allowed the Institute to turn out a number of very different information products, all for the purpose of spreading environmental information among a wide-ranging public of users: from public decision-makers to researchers, from holders of economic interests, or stakeholders, to private citizens.

The 2008 edition comes in the form of four products:

- **Environmental Data Yearbook – full version** – contains the indicator fact-sheets populated during 2008 and organised by production sectors, environmental conditions and responses, is produced in an electronic format (PDF), available on CD-ROM and at the web sites www.apat.gov.it and <http://annuario.apat.it>;
- **Key Topics** – A version in which the information elements are organised according to priority environmental issues that constitute the subject of specific initiatives of prevention and recovery;
- **Vademecum** – An extremely abbreviated (*pocket*) version of the assessments contained in the preceding volume;
- **Yearbook Indicators Database** (<http://annuario.apat.it>) – An instrument designed for the telematic consultation of the indicator fact-sheets and the reports production.

The information sources are listed in the database and in the full version of the Environmental Data Yearbook 2008.

SOCIO ECONOMIC FRAMEWORK

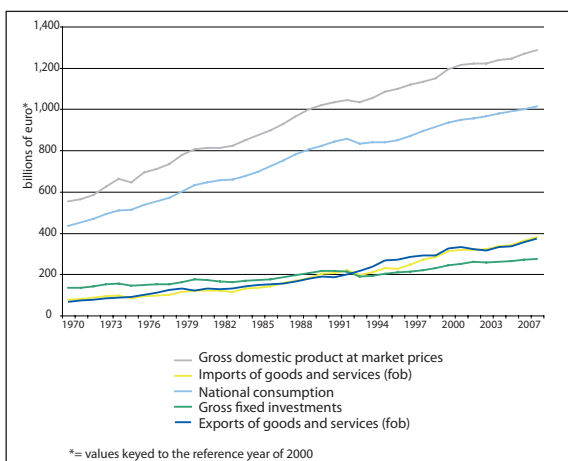
The characteristics of the country's territorial and socio-economic context and, in particular, the demographic dynamics and the modes of behaviour of economic subjects (families and businesses), are closely connected with the anthropogenic pressures that threaten the national environment (pollution of the air, water, soil and nature, waste generation, consumption and deterioration of natural resources).

As of 31 December 2007, the resident population in Italy was 59,619,290 inhabitants, making for an increase of 488,003 units over the previous year. As has been the case for a number of years now, this growth is due almost exclusively to immigration from abroad.

Within Europe as a whole, Italy is one of the most densely populated countries. The most densely populated regions, with respective figures of 426 and 400 inhabitants per km², are Campania and Lombardy.

Levels and patterns of consumption are also affected by demographic changes, with variations in family budgets having an especially noticeable effect on the allocation of available spending. Average monthly spending per family in 2007 was 2,480 euro (2,461 euro in 2006). The region with the highest level of average monthly spending per family was Veneto, at 3,047 euro, while the lowest figure was recorded by Sicily, at 1,764 euro.

Between 1970 and 2007, the main categories of the income statement for national resources and investments showed noteworthy growth. The GDP, consumption and investments doubled, while imports and exports quadrupled.



Main aggregates of the income statements of resources and investments

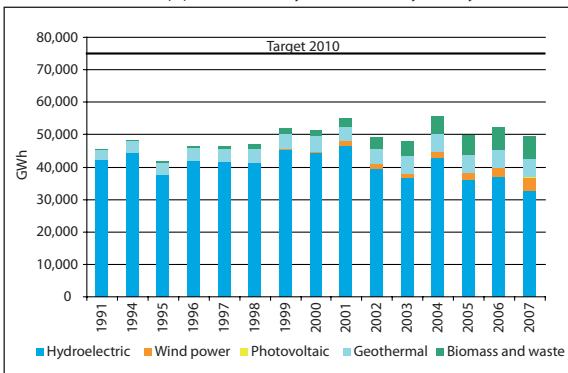
In detail, the national GDP for 2007, calculated in values keyed to the reference year of 2000, grew by 1.5% compared to 2006, though the gap between the northern and southern regions was not reduced. In all the countries of the European Union (EU25), more than 60% of the GDP (70.4% in Italy) is generated by the tertiary sector (which includes banking activities, tourism, transport and insurance). Industry and agriculture, though still significant, have declined in economic importance in recent years. The percentage of Italy's total value added accounted for by the primary sector in 2007 was only 2.5 percent, while the industrial sector (industry strictly speaking, plus construction) accounted for 27%.

As for Italy's production structure, the central regions show a greater vocation for service enterprises, while micro-firms are predominant in the South, and medium-size enterprises are the most widespread in the northeast regions. Large-scale industry plays the leading role in the Northwest.

Within Europe as a whole, Italian companies are more focussed on manufacturing activities, specialising primarily in the sectors referred to as “Made in Italy”. In Italy, industry produces roughly 27% of the value added to basic prices, with the contribution of traditional industry equal to approximately 21%.

Looking at the energy sector, and specifically the ratio between final consumption and total consumption of energy, the Italian figure is higher than the European average, pointing to greater overall efficiency when it comes to converting the energy contained in primary sources.

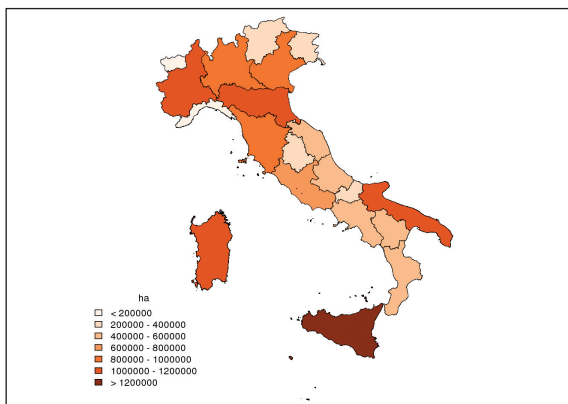
The demand for primary energy totalled 194.5 Mtep in 2007, down by roughly a percentage point compared to 2006. Electricity produced from renewable sources as a percentage of total production of electricity was 15.7%, due primarily to the significant contribution of hydroelectric energy, but despite the increase registered in recent years, the results for the production of electricity from such sources do not appear adequate for achieving the target set under Directive 2001/77/EC of approximately 75 TWh by the year 2010.



Gross electricity production from renewable sources (2007)

The main sectors in which strong growth in final consumption had been recorded since 1990 presented lower figures in 2007. Looking at the breakdown of consumption of final energy, the transportation absorbed 34.3% of consumption, followed by the residential and industrial sectors, at respective figures of 32.8% and 30.4%.

Agricultural activities generate pressures, but are also affected by changes in ecosystems. In 2007, the national figure for Utilized Agricultural Area was 12,744,196 hectares, and farming enterprises numbered 1,679,439 overall.



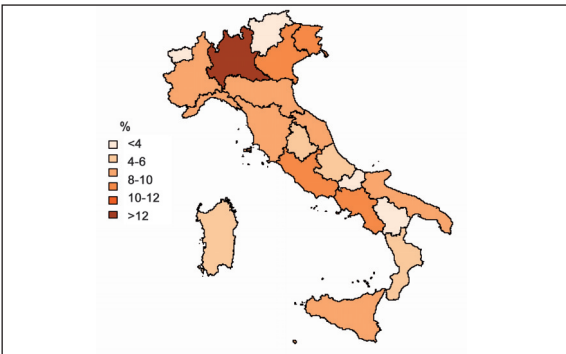
Regional break-down of Utilized Agricultural Area (UAA-2007)

The Standard Gross Margin (SGM) is used to determine the economic dimensions of farming enterprises. More than 46% of the SGM for 2007 was produced in Northern Italy, while the total national SGM for 2007 was equal to 25,000,347 ESU, making for a noteworthy increase over 2005 (+12.6%) and 2000 (+31.2%). The distribution of plant health products has fallen by 10.8% since 1997. Approximately 149 thousand tons of such products were put on the mar-

ket in 2006. More than half the national total (58%) is distributed in five regions alone: Emilia Romagna (13.2%), Sicily (13.1%), Veneto (11.8%), Apulia (11.5%) and Piedmont (8.4%).

A total of 5,443,730 tons of fertilisers were distributed in Italy in 2007. Roughly 45% of the total amount of fertiliser was distributed in the three regions of Veneto, Lombardy and Emilia Romagna.

In the whole of transport mode in Italy, mobility of freight and passengers shows constant growth in recent years. Roadway transport continued to be the predominant mode for the transport of both freight and passengers, absorbing 64.9% of the km-tons of freight transported and 92.2% of the km-passengers. An overview of the urbanised surface area set aside for infrastructures and the transport network is provided by the following figure, which illustrates the percentage of the total surface area for each region. The region with the highest infrastructure density is Lombardy, at more than 12.3%, followed by a set of regions in the range of 8-10%: Veneto (9.7%), Campania (8.9%), Friuli Venezia Giulia (8.3%) and Lazio (8.2%).



Percentage break-down of urbanised areas set aside for infrastructure and the transport network, on regional total (2005)

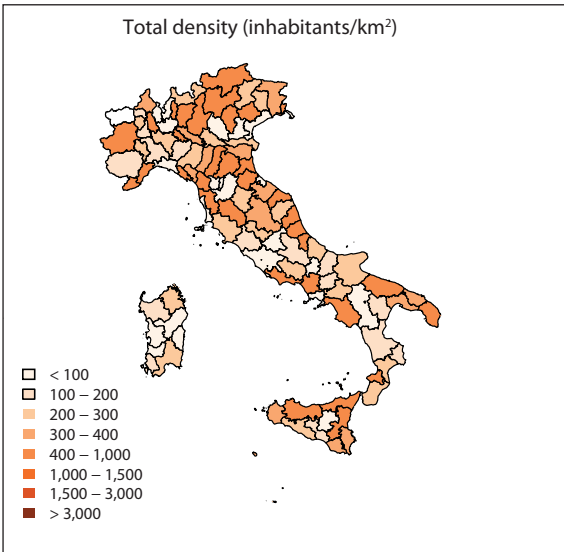
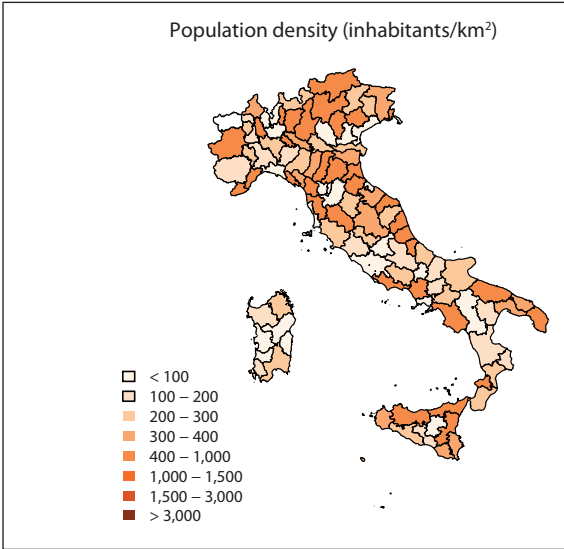
There is also a special tie between tourism and the environment, seeing that tourist activities draw on environmental resources, in the broadest sense of the term, as an indispensable asset for their development, while, at the same time, the environment benefits from the resources brought into play by tourist activities, assuming such operations are compatible with the environment.

Tourist arrivals and overnight stays in Italy grew by respective figures of 3.3% and 2.7%.

Tourist arrivals and overnight stays involve a temporary increase in the population, that can disturb socio-environmental balances. The highest ratios of tourist overnight stays/inhabitants are registered by the autonomous provinces of Bolzano (55.3) and Trento (28.6), as well as the Aosta Valley (24.7). Climate is one of the main driving factors behind the seasonal structure of tourist demand. In 2007, the third quarter accounted for 49% of overnight stays.

The mode of transport used most frequently by Italians taking trips is the automobile (65.3%). Foreign visitors entering Italy continue to favour the most "polluting" means of transport, such as automobiles and the airplanes, which continued to show growth between 2006 and 2007, at respective figures of 5.4% and 8%.

Tourist flows radically modify residential density, as in the cases of Rimini and Florence, which reach very high levels when their tourists are included in the calculation.



Variation in the population densities of Italian provinces taking into account tourist flows (2007)

CLIMATE CHANGE

Climate change is no longer merely a scientific issue, but a global emergency given increasingly high priority on the policy agendas of national and international institutions.

During the 14th session of the Conference of the Parties (COP) of the Framework Convention on Climate Change, the Parties reached agreement on the scheduling of the upcoming negotiating sessions, with an eye towards establishing an instrument for full implementation of the Convention. On that occasion, the Italian Minister of the Environment Mrs. Stefania Prestigiacomo, announced that the G8 meetings presided over by Italy would be enlarged to include emerging countries, in order to favour the stipulation of an agreement by the 15th session of the Conference of the Parties, to be held in December 2009 in Copenhagen.

In terms of scientific assessments, the IPCC (Intergovernmental Panel on Climate Change) has confirmed that "Warming of the climate system is unequivocal", indicating with *a very high confidence* that "The global average net effect of human activities since 1750 has been one of warming".

Globally, the analyses confirm that the overall rise in temperature (of the land-ocean system) was 0.76 °C up to 2006, compared to pre-industrial levels. The rate of warming during the last 50 years, equal to 0.13 °C per decade, is roughly double the rate for the last 100 years.

As far as Italy is concerned, the most recent estimates obtained by the ISPRA show that, following a decrease in the average temperature between 1961 and 1981, an increase was registered up to

2007, making for an overall rise of approximately 0.94 °C in 46 years.

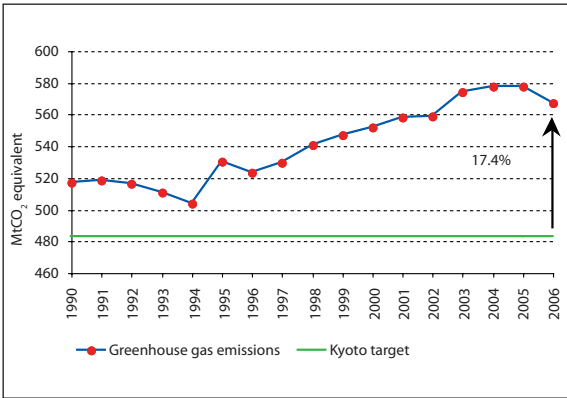
Observations formulated in the fourth report of the IPCC on dry land and on the oceans show that many natural systems have been affected by regional climate change, and especially by increases in temperature.

In Europe, based on the latest report of the European Environment Agency on the impact of climate change, many natural systems, as well as numerous socio-economic sectors, have already been affected by climate change, in terms of loss of biodiversity, reduced quantities and quality of water resources, risk to human health, damage to agriculture and forestry activities and to the sectors of tourism, energy and transport. Italy is one of the European countries most vulnerable to the impacts of climate change.

The average global concentration of carbon dioxide, the main greenhouse gas, has risen from 280 ppm during the period 1000-1750 to 383 ppm in 2007, corresponding to growth in carbon dioxide emissions from roughly zero to 31.2 billion tons, taking into account solely emissions from fossil fuels use in combustion and cement production. The other greenhouse gases, such as methane, nitrogen dioxide and the fluorocarbons, have shown similar patterns of growth.

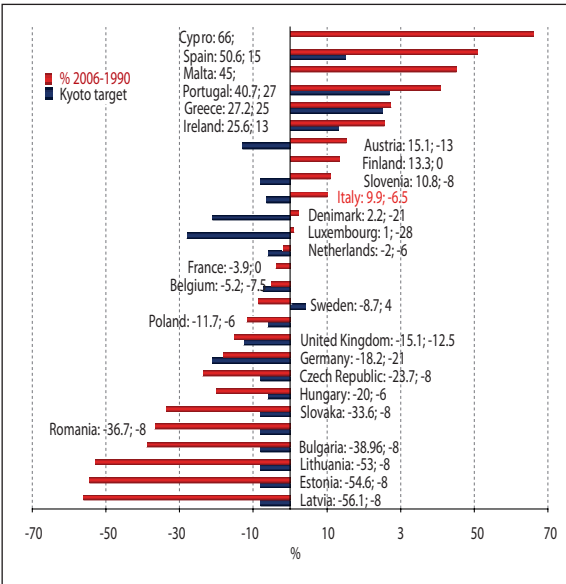
Italy follows the same trend of greenhouse gas emissions: the most recent figures for the national inventory of greenhouse gas emissions show that emissions in equivalent tons of CO₂ raise from 516.85 million tons to 567.92 million tons during the period 1990-2006, for an increase of 9.9%, whereas, according to the Kyoto Protocol, Italy should reduce its emissions, during the period 2008-2012, to levels 6.5% lower than those of 1990, meaning to 483.26 Mt CO₂ eq..

It will have to draw on credits generated by forestry activities and international cooperation initiatives (*Clean Development Mechanism, Joint Implementation*) as defined under the Kyoto Protocol. In 2006 greenhouse gas emissions were approximately 85 Mt greater than the Kyoto target (+17.4%). In 2006, total greenhouse gas emissions were lower, for the first time, than in the previous year.



Total greenhouse gas emissions compared with the Kyoto target

Looking at the European Union (EU15), it is clear that the majority of the countries are not in line with the objectives set under the Kyoto Protocol. Germany, Belgium and the Netherlands have met the objectives, while, in 2006, the United Kingdom, Sweden and France lowered emissions beyond the objectives set for the period 2008-2012.



Comparison of greenhouse gas emissions in 2006 compared to the reference year 1990 and to the Kyoto target for the period 2008-2012 in the EU Member States (EU27)

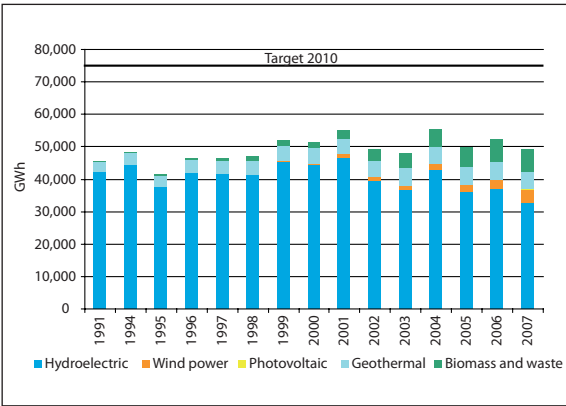
The primary measures of response involve mitigation (meaning reduction of green-house gas emissions) and adaptation to the climate change underway.

In Europe, measures for reducing atmospheric emissions already undertaken in the energy sector, or to be undertaken, must fall within the policy framework recently set at the European Council of 8-9 March 2007, which established the following objectives for the European Union by 2020:

- a) 20% reduction in greenhouse gas emissions compared to 1990;
- b) renewable sources accounting for 20% of total energy consumption;
- c) 20% reduction in energy consumption, compared to projected levels;
- d) 10% share of transportation fuelled by bio-fuels.

On 12 December 2008, the European Council, after an intensive debate among the member countries, reached an historic agreement of the “energy – climate change” package, which consists of a series of proposals geared towards reaching the objectives for 2020; these proposals were approved by the European Parliament on 17 December 2008.

In Italy, the installed capacity of renewable energy sources increased by approximately 1,000 MW in 2007, for a growth rate of 4.7% on an annual basis. The electricity produced from renewable sources was approximately 49.4 TWh in 2007, equal to 15.7% of total electricity production. Between '97 and 2007 there were noticeable increases in the production of electricity from wind power and from biomasses/waste, as well as, though to a lesser degree, from geothermal energy. Despite the increased use of renewable sources in recent years, the levels of electricity produced from such sources are not sufficient for reaching the objective of approximately 75 TWh by 2010, as called for under Directive 2001/77/EC.



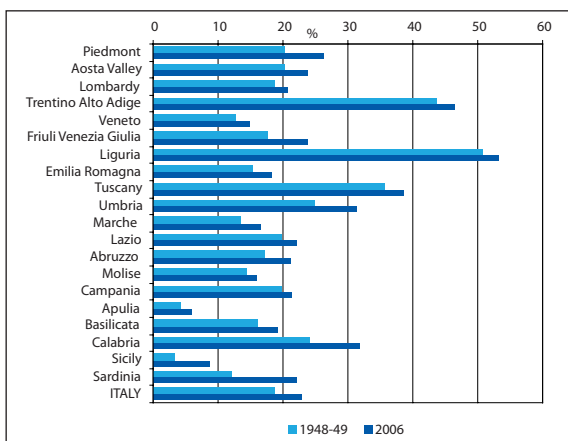
Gross electricity production from renewable energy sources

With regard to adaptation, though it is a relatively new topic on the policy agenda of the European Union, many countries have already launched initiatives aimed at promoting adaptation to climate change, drawing up programs, strategies and plans.

BIODIVERSITY AND NATURAL, AGRICULTURAL AND FOREST AREAS

Italy is one of Europe's richest countries in terms of biodiversity, possessing half of the plant species and a third of the animal species found in Europe.

Italy possesses an especially rich stock of forests, with a forest area index that is constantly on the rise, thanks to forestation activities and natural forest expansion. A factor contrasting this trend is forest fires, whose incidence began rising once again in 2007, after gradual mitigation had been recorded up to 2006.



Regional forest area index

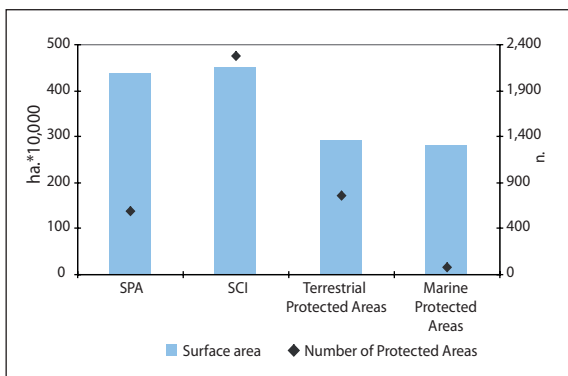
In addition to natural environments, agricultural areas also play an important role. In Italy, almost 44% of the national territory is earmarked for agriculture, with approximately 21% of the Utilised Agricultural Area (UAA) presenting characteristics of noteworthy naturalistic value, in terms of biodiversity and connection with natural spaces.

This wealth of biodiversity, however, is seriously threatened and risks being lost forever. The percentage of Vertebrate species at risk fluctuates, depending on which author is consulted, from 47.5 % to 68.4%. The situation is especially critical for fresh water Fishes, Amphibians and Reptiles. Also at risk are 15% of the higher plants and 40% of the lower plants.

The main threats to the natural heritage are tied to the impact of human activities and to the growing demand for natural resources and ecosystem services. For example, the transformation and modification of natural habitats constitute an indirect threat for approximately 50% of the Vertebrate animal species, while major direct threats include poaching and illegal fishing.

There is controversy over the role of activities tied to agriculture as causes of impact on the natural heritage. On the one hand, agricultural areas are subject to the negative impacts of other activities and other spheres of production. At the same time, agricultural activities themselves often cause pollution, loss of stability of terrains and soil, loss of biodiversity, simplification of the landscape etc.. In seeking solutions to these problems, Italy has endorsed numerous Conventions and international agreements designed to safeguard biodiversity. Especially worthy of note are the 1992 Convention of Rio de Janeiro on Biological Diversity and the Ramsar Convention of 1971 on wetlands of international importance. On the European level, Italy follows two key Directives for the preservation of biodiversity: the Bird Directive (79/409/EEC) on the protection of wild birds and the Habitat Directive (92/43/EEC) on the preservation of natural and semi-natural habitats of wild flora and fauna. The specific objectives of the Habitat Directive include the creation of a cohesive European ecological net-

work entitled Nature 2000. On the national level, a fundamental reference for the conservation of biodiversity is the Framework Law no. 394 of 6 December 1991 on protected areas.



National distribution of extension and number of protected areas (excluding Ramsar Areas and Marine Mammals sanctuary)

At present, 14.5% of Italy's surface area holds Special Protection Areas (SPAs), 15% is classified as Sites of Community Importance (SCIs) (all approved by the European Commission) and 9.7% consists of protected terrestrial areas, while 30% of the national coastal waters are protected marine zones. In addition, 51 Ramsar sites are protected.

With regard to relations between agriculture and the environment, particular attention is focussed on biological agriculture. In Italy, the surface areas involved in or being converted to biological agriculture in 2007 were equal to 1,150,253 hectares (+0.18% compared to 2006), representing 9% of the national UAA. Within Europe, Italy retains an uncontested lead in terms of both the number of biological enterprises and the amount of land involved.

AIR QUALITY

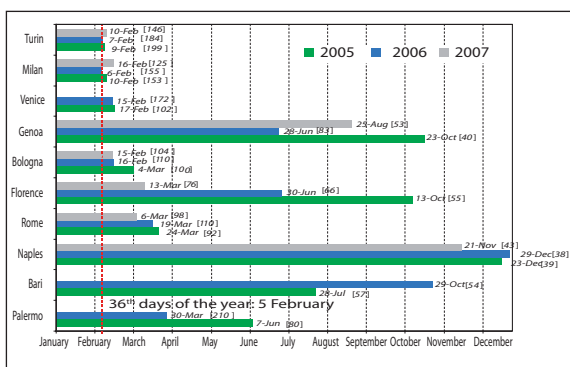
Air quality is one of the most important factors influencing the state of the environment as a whole, and especially the health of citizens.

The most critical pollutants, given their high concentrations in the air, continue to be O_3 , PM_{10} and NO_2 .

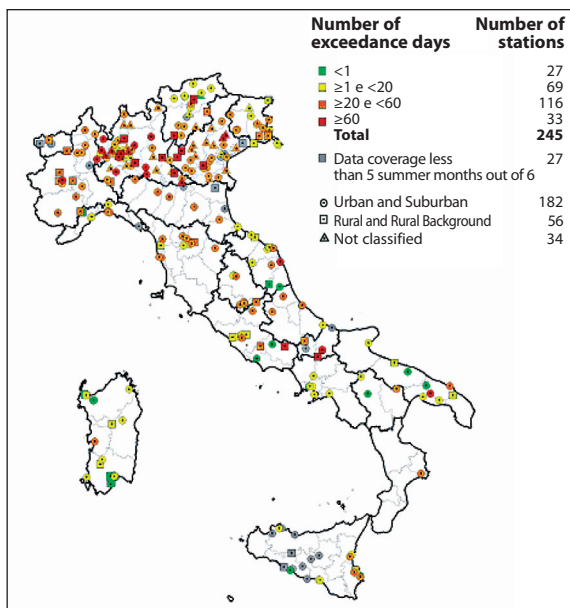
The reduction in emissions of particulate matter (PM_{10}), nitrogen oxides (NO_x) and non-methane organic compounds (COVNM) registered between 1990 to 2006 did not result in improved air quality, confirming the complexity of the air pollution topic, which calls not for emergency measures but long-term integrated initiatives.

In 2007, 57% of the monitoring stations for PM_{10} in Italy registered exceedances of the daily limit value; in the Summer of 2008, 89% of the ozone monitoring stations recorded exceedances of the long term objective for the protection of human health.

The most recent figures confirm the widely known critical situation in the Po Valley area: the cities and towns of the Po Valley Area reach the yearly limit of 35 days in exceedance of the 50 mg/m^3 daily limit value of PM_{10} allowed under the law more quickly than the rest of Italy.



PM₁₀ – Date on which the daily limit value was exceeded and annual number of exceedances at the monitoring station that first exceeded 35 days (2005-2007)

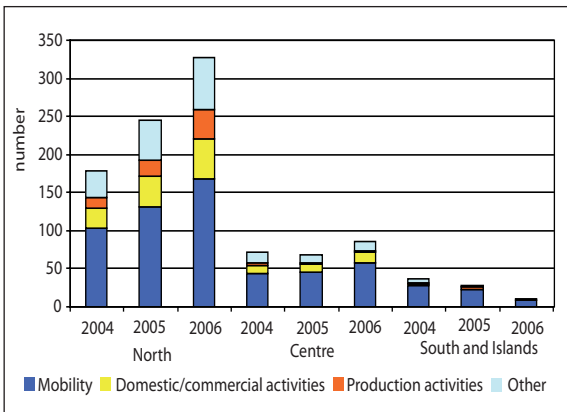


Summer O₃ – Monitoring stations by categories of days in exceedance of long-term objective for the protection of human health (120 mg/m³) (2008)

In Italy, 41% of the PM_{10} (with regard only to its primary component), 65% of the NO_x and 39% of the COVNM emitted in 2006 are attributable to the transport sector. In this sector, the harmful gas emission levels during the period 1990-2006 were the result of two contrasting trends: emissions tend to increase, because of the continuous growth in the vehicle fleet and the paths covered, though overall they decrease, thanks to the renewal of the vehicle fleet.

At present, the subject of air quality is regulated by Legislative Decree 351 of 4 August 1999, which transformed European Community Directive 96/62/EC into Italian law, setting the criteria for the assessment and management of air quality, based on the formulation of plans and programs for upgrading.

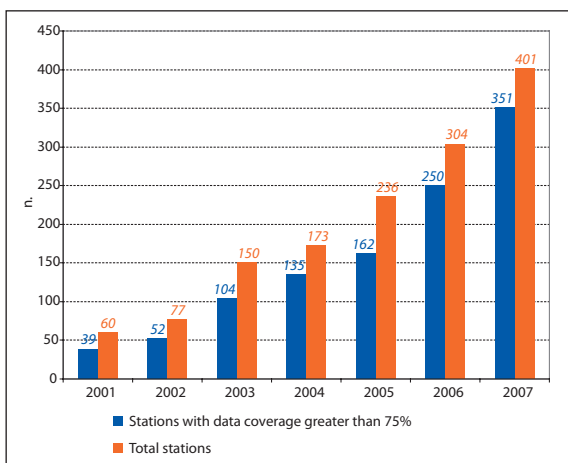
Between 2004 and 2006, there was a significant increase in measures taken to restore air quality, especially in the regions of Emilia Romagna, Lombardy and Umbria.



Measures taken to restore air quality

The measures adopted by the Italian regions in 2005 regard alternative mobility (17%) and private and public means of transport with low environmental impact (respectively 15% and 16%).

As for investigative actions, which play a key role in the management of air quality, unmistakable improvements have been made in activities of monitoring and data communication from the local to the national level.



PM₁₀ – Number of monitoring stations with time coverage of more than 75% and total number of stations

WATER QUALITY

The Water Directive (2000/60/EC) introduces the regulatory concepts of “ecological status”, regarding water-body quality in terms of local responsibilities, and of the planning, management and governance of water on the watershed level.

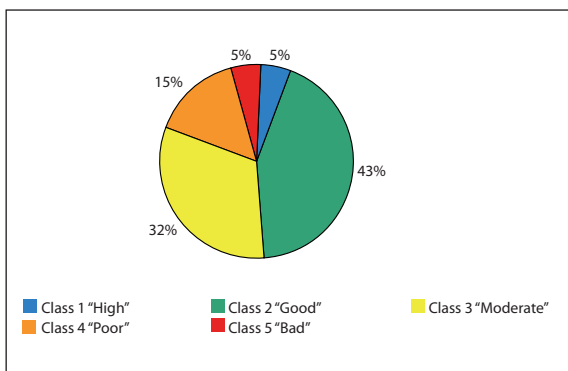
The principle of “non-deterioration” of water bodies, in addition to those of precaution and prevention, oblige the Member Countries to protect their transitional and internal surface waters, as well as coastal and underground waters. Furthermore, the objective of “good” ecological and chemical status must be reached by 2015 by managing water on the scale within the framework of the watershed and not within the confines of administrative borders, pursuing the optimisation of uses and promoting the integration of existing measures regarding water and the sectors that depend on it.

Water-body quality is assessed both with regard to designated use (production of drinking water, swimming, mollusc growing, etc.) and based on specific objectives of environmental quality (SECA, SEL, SCAS).

Looking at the data for 2007 on the Ecological Status of Waterways (SECA), the situation does not appear especially critical, with 20% of the monitoring stations found in water bodies of poor quality, while 48% of the sites monitored fell under classes 1 and 2, meaning an ecological status of “high” (5%) or “good” (43%).

Lake quality readings (SEL- Ecological Status of Lakes), reported for a total of 148 stations in 14 regions, fall within the classes of “moderate” to

“high” in 73% of the cases, an incidence that has decreased by 1% since 2006.



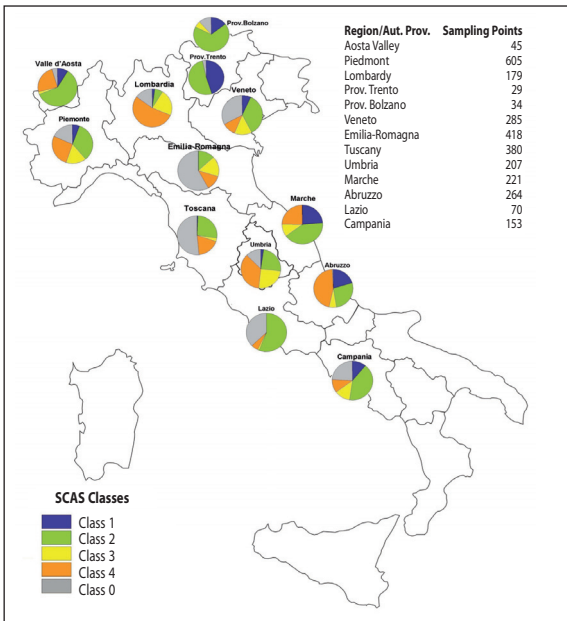
Percentage distribution of the SEL index quality classes (2007)

The Chemical Status of Underground Waters (SCAS) indicates the zones with the most critical problems in terms of quality.

The number of points monitored in the different regions and autonomous provinces varies considerably (from 29 to 605). In Trento, Bolzano, Marche, Aosta Valley, Campania, Lazio, Veneto, Piedmont and Abruzzo, from 97% to 53% of sampling points ranked within classes 1 to 3. The highest percentages for class 4 were in Lombardy and Abruzzo (54% and 46% respectively), while 58% of the monitoring points in Emilia Romagna and 52% of those in Tuscany fell under class 0, for bad quality on account of natural causes.

The quality of the waters of the Venice Lagoon is governed by the Inter-Ministerial Decree of 23 April 1998 (Ronchi-Costa), which introduced two objective values: a “guide” value, which can be compared with the background situation, and

the “imperative” value, which is higher, but does not exceed the values that pose a threat to human health or water life. The anti-pollution efforts involving industrial waste discharge in the Porto Marghera area, as well as the water flowing into the entire drainage basin and the historic core of Venice, have improved the quality of the lagoon water in recent decades; nevertheless, the presence of chemical substances, POP (*Persistent Organic Pollution*), dioxins and polychlorobiphenyls are a cause for concern.



The quality status of underground water bodies on the regional level (2,890 points monitored – 11 regions and 2 autonomous provinces) (2007)

The massive human settlement of the territory, combined with the dimensions of the production system place heavy pressure on national water resources.

Both the widespread pollution caused by fertilisers and plant care products, as well as pollution from specific industrial sites, not to mention the inadequacies of the civic purification system, influence the quality of water resources.

A critical systemic problem when it comes to rationalising the use of the resource is the scarce reuse of treated waste water (Ministerial Decree 185/2003). In Italy initiatives involving the reuse of waste water are much more limited than in other Countries, though, in recent years, a positive trend has resulted in an increase in such efforts.

The criteria underlying recent national measures (Legislative Decree 152/06, Ministerial Decree no. 185 of 12 June 2003, Ministerial Decree no. 367 of 6 November 2003), as well as Directive 2000/60/EC of the European Community, set the ground work for developing an integrated sustainable operating strategy. Numerous legislative instruments are available for protecting waters, with the main one, in terms of strategic planning, being the Water Defence Plan (PTA) implemented in six regions and approved in eight others (the deadline for approval of the PTA is 31 December 2008).

Also of note are the programs of measures for water bodies to be used for drinking supplies (the monitoring of which, for 2005-2007, showed that Sardinia presents the most critical problems, followed by Liguria and Emilia Romagna), as well as upgrading measures for the recovery of sites not suitable for swimming and European Community Directive 91/271/EEC on the construction and upgrading of sewage networks (in 2006, though the communication of information was not complete, the levels of compliance were equal to 96% for sensitive areas and 82% for normal areas) and urban waste water treatment plants (in 2006, the level of compliance of purification systems was 70% in sensitive areas and 76% in normal areas).

PHYSICAL AGENTS

A physical agent is an element which, governed by the laws of physics, brings about a change in the environmental conditions in which it exists.

Physical agents that effect the environment are electromagnetic fields, environmental noise and noise inside working places, ionizing radiation, vibrations, light pollution and ultraviolet (UV) radiation.

Noise pollution is characterized by an high impact on the environment, on ecosystems and on the population, leading the EC to pursue the objective of reducing the number of people exposed to noise.

The control activities carried out by the Agency System, performed primarily in response to complaints from citizens, show that the categories of noise sources held to be highly disturbing are commercial and service activities (48.2%), productive activities (35.4%) and roadway infrastructures (10%).

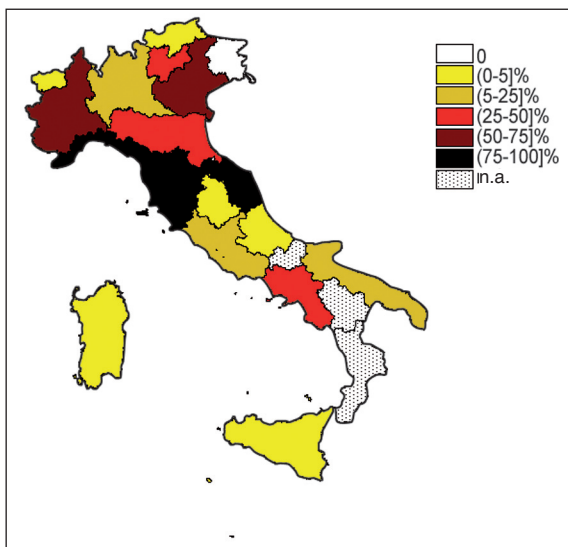
The main sources of noise, identified as road, rail and air traffic, have all registered a general increase in volume, with distinctive characteristics of the rise that are linked to individual sources. The increase in the abovementioned pressure factors, combined with shortcomings in the legislation, plus the lack of synergy and forms of dialogue between the principal players, is an obstacle to the determination of an organic and shared definition of the action to take.

To date, initiatives are underway to raise the awareness of local governments aimed at encouraging preventative measures, such as the acoustical classification of municipal territories and the formulation of noise abatement plans.

Unfortunately, it must be noted that there has been a contradictory response by local administrations, as although some territorial situations are functioning, others are totally inadequate.

An analysis of the data shows the situation, as of 2007, to be almost stationary compared to previous years, with the percentage of Italian municipalities that have approved acoustical classifications equal to 35% (+3% compared to 2006).

The most positive situations are found in Marche (94%), Tuscany (88%), Liguria (85%) and Piedmont (69%).



Percentage of municipalities that have approved acoustical classifications out of the total number of municipalities for each region/autonomous province (2007)

Prolonged exposure to *electromagnetic fields* is considered potentially dangerous for human health.

The sources of electromagnetic fields can be divided into two main categories: low-frequency fields (0-300 Hz), or ELF fields, (electric power lines, substations, home appliances etc.); sources of high-frequency fields (100 kHz - 300 GHz), or RF fields (radio, tv, cell phones, radar).

Between 2006 and 2007, there were increases in violations of the limits by both radio and television plants (RTV) (+6%) and radio base stations (RBS) (+17%). Though the density of RBS plants is roughly double that of RTV plants, and the density of RBS sites is 5 times higher, the most significant environmental pressure comes from RTV plants, seeing that the overall power of the RBS (1,971 kW) is roughly 25% that of the RTV (7,957 kW).

Another major source of pressure is represented by high and extra-high voltage power lines. Between 2006 and 2007, there was the equivalent of a 27% increase in the number of 220 kV power lines and a 2% increase in those of 380 kV. There was also a slight reduction, equivalent to 4%, in the number of power lines under 40kV and a slight increase, equivalent to 7%, of those between 40kV and 150 kV.

In terms of both radio frequencies (RTV and RBS) and extremely low frequencies (ELF), control activities are a fundamental part of the operations carried out by the responsible authorities (ARPA/APPA).

Analysis of the data from the EMF Observatory shows that, between 2006 and 2007, there was a decrease in the number of preliminary assessments regarding the authorization of both RBS and RTV plants of 23% and 14%.

In terms of the clean-up initiatives undertaken to date regarding violations identified through control activities, from 2006 to 2007 there was a 7% increase in the number of RTV plants and a 25% increase in RBS plants. It is interesting to note the differences between RTV and RBS sources.

As of 2007, the clean-ups completed for RBS (86%) far outnumbered those for RTV (53%).

The small number of operations concluded for RTV plants than for RBS is due to the generally greater complexity of the clean-up procedure.

Ultraviolet radiation takes up the 100 to 400 nanometres (nm) range of the electromagnetic wavelength spectrum. UV rays are generally divided into three spectral ranges: UV-C, UV-B and UV-A.

The UV-C (100-280 nm) are completely absorbed by the ozone and oxygen present in the upper atmosphere.

The UV-B (280-315 nm) represent 1.5% of the total solar energy that affects the outermost layers of the atmosphere and are mainly absorbed by stratospheric ozone.

The UV-A (315-400 nm) are the range of UV rays least absorbed by the atmosphere.

Changes in the middle layers of stratospheric ozone and the ozone "hole" above Antarctica make the study of ultraviolet solar radiation and its effects on the environment and human health increasingly relevant. Exposure to the ultraviolet component of solar radiation has physiological benefits for human health (producing vitamin D3 and triggering the tanning effect) but, at the same time, it has been classified by the IARC as an agent that is certainly cancerous to man.

Monitoring ultraviolet radiation is particularly important in the Aosta Valley given the average altitude of the area (UV radiation increases with height), the noteworthy segment of the population that carries out activities at high altitude and because of the presence of snow on the ground for much of the year which, due to its reflective potential (its albedo), effectively increases exposure to ultraviolet radiation.

Aosta Valley has already initiated UV monitoring. With the goal of involving all the regions in this positive experience, so as to establish, in the near future, a national networks for monitoring UV exposure, all the regional agencies, at the proposal of the ISPRA, have organised a working group coordinated by the Aosta Valley.

Control of environmental radiation in Italy is justified by the need to protect the population and the workforce from exposure to *ionizing radiation*.

Ionizing radiation is almost always only associated with the production of nuclear energy although in fact, exposure to ionizing radiation is also a medical, diagnostic or therapeutic procedure. In such instances, the risks involved are considered to be more than outweighed by the benefits incurred by those that undergo such treatments.

The main source of exposure to ionizing radiation occurs in a domestic setting and in other indoor situations. In such locations, there is a natural gas present in the air - radon – which constitutes one of the main sources of risk to the population. In some cases, it can reach concentrations so high that the associated risk is considered unacceptable, and reclamation of the liv-

ing environment is recommended or even required.

The situation with regard to radon exposure was made clear by the results of a nationwide investigation carried out in the 80's and 90's, which is still valid for the characteristics of exposure, pointing to noteworthy differences in the average concentrations of Radon (Rn-222) in the various regions of Italy. High concentrations of radon (Rn-222) were observed in Lazio and Lombardy, with difference compared to other regions due to the uranium content and the permeability of their rock and soil beds.

As a consequence of this investigation, the problem of protecting the workplace from radon exposure was legally addressed with Legislative Decree n. 241/2000, which implements the Council Directive 96/29/Euratom and modifies and integrates the earlier Decree, n. 230/1995. The decree sets out the obligations of both employers and the regions. In particular, the latter are charged with identifying the "prone areas" meaning areas with higher probability of high indoor radon concentrations. Pending the determination of the criteria to be used to identify these areas and the methods to be adopted in that process, some regions and some ARPA / APPA have started studies and investigations that will permit classification areas according to the likelihood of high concentrations of indoor radon.



The region (in green) were studies/initiatives aimed at identifying radon-prone areas have been underway since 2002

Finally, information on remedial action carried out in Italy, in places presenting high concentrations of radon, is still scarce and sporadic for both domestic situations and workplaces.

ENVIRONMENT AND HEALTH

New socio-economic scenarios, technological development and lifestyles have changed global exposure to environmental risk factors. These factors are driven by environmental change, including climate change, which increases environmental and territorial vulnerability.

Questions of “environment and health” regard three main areas that govern the entire process: scientific complexity, institutional awareness and the management of perceived risk by the population. European and WHO approaches indicate the need to improve environmental tools that prevent environmental risk factors using methods that better represent the exposure and improving information and environmental communication.

Many sources in scientific literature have long highlighted the association between exposure to environmental risk factors and the potential development of some diseases, though the causes of the latter are not necessarily environmental: the difficulty of establishing cause-effect relations or obtaining knowledge of long-term effects is still a limiting factor. For example, exposure to substances such as pesticides or PMs does not imply the development of a tumour or that the tumour can be directly related only to environmental factors.

Furthermore, the methods available today do not enable us to make an exact assessments on the effects of long-term exposure or exposure to reduced concentrations or more pollutants.

Together with the heightened scientific awareness of the risks, there remain these conditions of uncertainty regarding assessment. This stimulates an increasing number of focussed, priority preventive

actions which must not only their feasibility, but also the intensity of the association between the environmental stressors and the clinical effects. The “Environment and Health” Report of the EEA (2005) illustrates the results of a study meant to determine: the degree of correlation between certain illnesses and specific pollutants; the potential quantitative impact on the population; the possibility of taking preventive action on risk factors. For example, as shown on the table that follows, the correlation between radon and lung cancer is considered “very likely”: nevertheless, the impact is assessed as “moderate”, seeing that radon exposure does not involve the entire population (radon is only present in certain areas); on the contrary, the possibility of taking preventive action is identified as “high”.

Strengths of associations between environmental factors and as selection of diseases, with corresponding impacts on the population and possibilities for prevention

Disease/ pollutant	Strenght of Association	Qualitative descriptor	Population Impact	Prevention possibilities
Cancer/ radon Neurodevelop- ment/lead	Very likely (90-99%)	Statistical significance: beyond all reasonable doubt	moderate	high
Neurodevelop- ment / mercury	Very likely (90-99%)	Statistical significance: beyond all reasonable doubt	low	high
Respiratory diseases / air pollution	Very likely (90-99%)	Statistical significance: beyond all reasonable doubt	high	moderate
Neurodevelop- ment / POPs (Persistent Organic Pollutants)	Likely (66-90%)	Reasonable certainty: sufficient scientific evidence	moderate	moderate
Asthma causation / air pollution	medium likelihood (33-66%)	Balanced of evidence: strong possibility	high	moderate
Cancer / EMF (Electromagnetic Fields)	low likelihood (10-33%)	Scientific suspicion of risk	high	low
Cancer / low level radioactivity	very unlikely (1-10%)	Low risk	moderate	high

In its recent report *“Preventing Disease through Healthy Environments”* (2007), the WHO introduced a similar operative approach for the management of the environment and health issue, defining the operational areas for environmental policies and identifying other areas of preventive action (the built environment, climate change and agricultural practices).

The WHO study also estimates the role of environmental factors in the onset of diseases for which they are recognised as contributing causes. Specifically, it was found that environmental factors contribute to 85 of the 102 main diseases considered in the *World Health Report* of the WHO, while, overall, approximately 25% of diseases and 23% of early deaths can be traced to environmental factors of a chemical, physical or biological nature, or to factors that encourage unhealthy behaviour.

The study also highlights that the weight of environmental factors also depends on other determinants, such as socio-economic, managerial and organizational contexts that vary according to the different continental regions and the pathology that is considered. In developing countries, for instance, the main effect of environmental factors is their contribution to the incidence of infectious diseases and mortality, in developed, it is their contribution to neoplastic diseases. What is more, the WHO's new assessment approach confirms that the majority of health determinants cannot be directly controlled by public health, seeing that they are closely tied to policies and strategies in other sectors, further highlighting the need for cooperation between the latter.

In conclusion, environmental information plays a strategic role in measuring exposure and preventing risks to health, but it must also take into account emerging risks, new areas of investigation (built environment) and the need for communication to the population.

ENVIRONMENTAL RISK

Risk of natural origin

This is the risk that arises when events of endogenous origin (volcanic and tectonic activities) or exogenous origin (erosion of embankments and sedimentation in low-lying areas) interfere with anthropogenic activities.

Within Europe, Italy is one of the countries most affected by seismic events.

The areas most subject to seismic risk are found in the Friuli sector, along the central-southern Apennine range, and especially in the sectors of the inter-Apennine basin, along the Calabrian edge of the Tyrrhenian and in South-east Sicily.

Volcanic activity is another critical problem of noteworthy relevance to our country.

The Vesuvius and Phlegraean area, the Island of Ischia, the Etna sector, the Aeolian Islands and, in part, the Alban Hills are the zones where the volcanic risk is greatest, due to the presence of active volcanoes.

A decidedly lower level of risk, though not one entirely to be ignored, is connected with the underwater volcanoes found in both the Tyrrhenian Sea and the Straits of Sicily. In the Tyrrhenian basin the Marsili would appear to be confirmed as active.

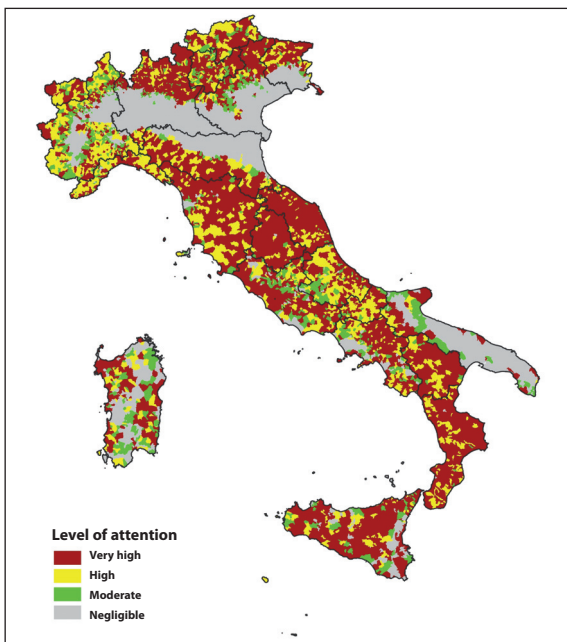
Italian territory is also exposed to: floods, landslides and avalanches. The Italian municipalities affected by landslides currently number 5,708, or 70.5% of the total.



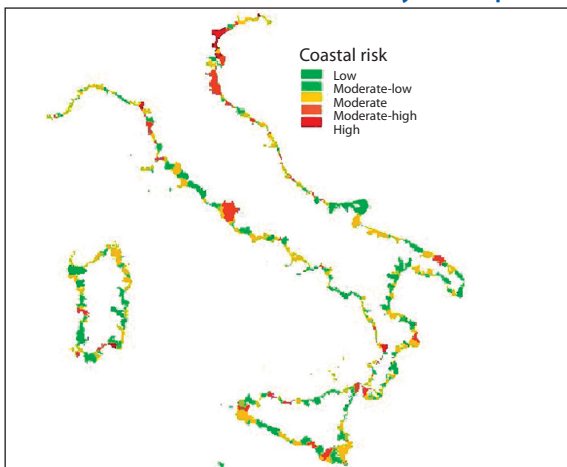
Distribution throughout the national territory of the major seismic events of the past (magnitude ≥ 6.5)

More than half of these municipalities (2,940) have been classified at very high levels of attention (intersections between landslides and the continuous and discontinuous urban texture, as well as industrial or commercial areas).

Coastal areas are especially vulnerable to erosion. Today, approximately 1,170 km of Italy's roughly 4,863 km of low-lying coastline, including coastal plains, already suffers from an evident state of erosion and is at risk of flooding, meaning nearly 20% of Italy's total of approximately 8,350 km of coastline.



Level of attention for landslide risk by municipalities



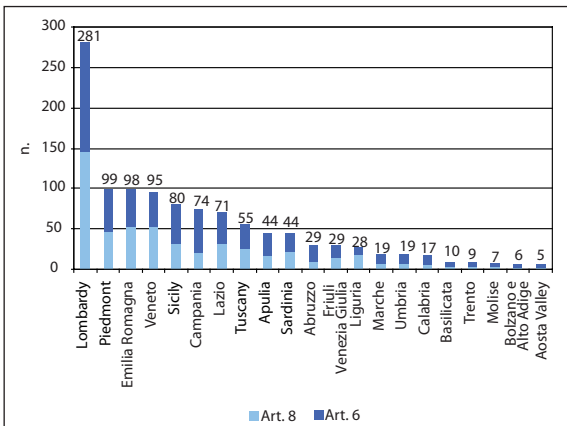
Map of coastal risk by municipality applying EUROSION Project methodology

Anthropogenic risk

“Anthropogenic risk” is caused (directly or indirectly) by human activities that are potentially dangerous for the environment or human life.

This broad definition encompasses so-called “industrial risk” arising from activities carried out in industrial establishments. A “Major-Accident Hazards Establishment” (MAH establishment) is defined as an establishment containing dangerous substances (used in the production cycle or simply stored) in quantities that exceed the thresholds established under the Seveso regulations (Directive 82/501/ EEC, plus subsequent modifications).

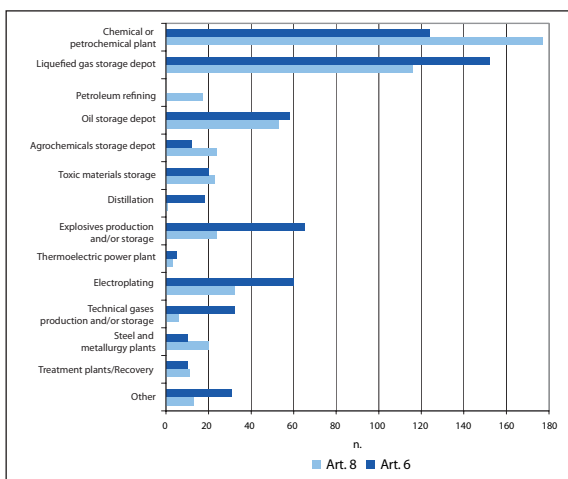
When the number and distribution within the territory of these establishments are known, risk maps can be drawn.



Distribution by region of establishments subject to Legislative Decree 334/99, plus subsequent modifications and updating (30/06/2008)

The regions with the greatest concentration of major-accident hazards establishments are: Lombardy, Piedmont, Emilia Romagna and Veneto, followed by Sicily, Campania and Lazio.

The provinces with the highest levels of such facilities are Milan, Bergamo, Brescia and Ravenna in Northern Italy and Naples in the central-southern zone. Knowing the type of MAH establishment involved makes it possible to assess the nature of the potential risk in advance. For example, storage sites for LPG or explosives, as well as distilleries and plants for production and/or storage of technical gases, present a primary risk of fire and/or explosion. Chemical establishments, refineries, toxic gases and agrochemicals storage depots are exposed not only to the risk of fire and/or explosion, but also to the risk of diffusion of toxic and eco-toxic substances, even at a distance.



National distribution of establishments subject to Legislative Decree 334/99, plus subsequent modifications and updating, by type of activity (30/06/2008)

Within the national territory there is a prevalence of chemical and/or petrochemical establishments, as well as liquefied gas facilities (notably LPG), corresponding, when taken as a whole, to 50% of the total number of establishments.

SOIL AND LAND

Soil is a complex living body continually evolving and, under certain aspects, far from being well known. It supplies worldwide life and human beings with the necessary elements for their sustenance, nevertheless it is also a non-renewable and extremely fragile resource.

Soil performs several functions that make it essential for maintaining the environmental balance. It plays a primary role in protecting underground waters from pollution, conserving biodiversity, controlling the quantity of atmospheric CO₂, regulating surface water flows producing direct effects on floods and landslides, regulating nutrients' cycles, etc..

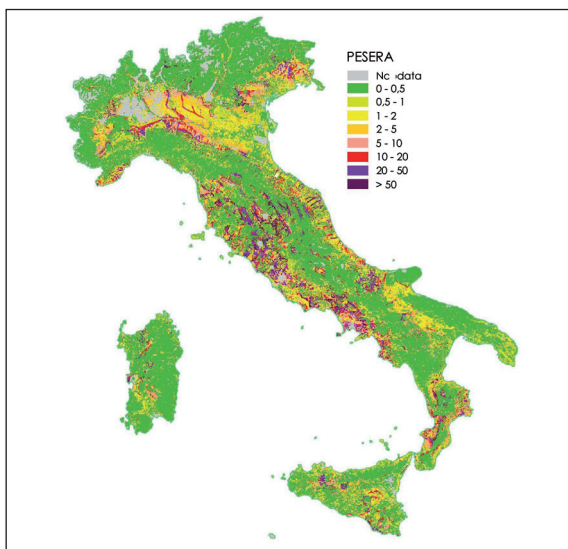
Plant biomass depends on soil conditions, with evident consequences on the whole food web. Incorrect agricultural practices, concentration of human population and economic activities in localised areas, climate change and land use/land cover change can limit or totally inhibit its functions.

An example is that of contaminated sites, a problem common to all industrialised countries. In Italy, there are currently 57 Contaminated Sites of National Interest, for which restoration efforts are being coordinated directly by the Ministry of the Environment, Land and Sea. Furthermore, regional authorities have the responsibility of approximately 15,000 potentially contaminated sites, 4,000 of which need to be reclaimed.

The reclamation of brownfields, i.e. abandoned, inactive or underused sites which once hosted pro-

ductive, generally industrial or commercial, facilities is hindered by historical pollution, either real or potential.

Another issue of great environmental and economic relevance is soil erosion by water, meaning the removal of topsoil, rich in organic matter, by means of surface stream waters (*runoff*). At a national scale, models estimate for ca. 30% of Italian soil an erosion risk higher than their tolerance limit. Particularly widespread, especially in coastal areas, is soil *salinisation*, consisting of an excess of salts in soil, due to natural and human causes. In some cases, it can reach levels compromising productive and farming activities, with very negative effects on soil biodiversity and resistance to erosion.



Actual soil erosion risk assessment ($t \cdot ha^{-1} \cdot year^{-1}$) according to the PESERA model (2004)

Intensive farming can cause soil compaction (compression of soil particles into a smaller volume following the reduction of air space between soil aggregates), due primarily to the use of agricultural machinery. At the continental level, compaction is considered an important factor in the major floods that have affected Northern Europe in recent past.

A problem of particular concern is land take by the expansion of artificial areas and related infrastructure (urban sprawl), which can lead to the total loss of large areas of land often characterised by soils with a high agricultural value. In Italy, as well as in the rest of Europe, total agricultural land is decreasing, due the abandonment of farming activities and urbanisation.

Progressive loss of soil biodiversity is tied to all the above mentioned factors. Soil-dwelling organisms play an essential role in soil formation and in its ecological capacities: nitrogen fixation, carbon sink, water and nutrients retention, to act as a biological filter against contaminants, etc.

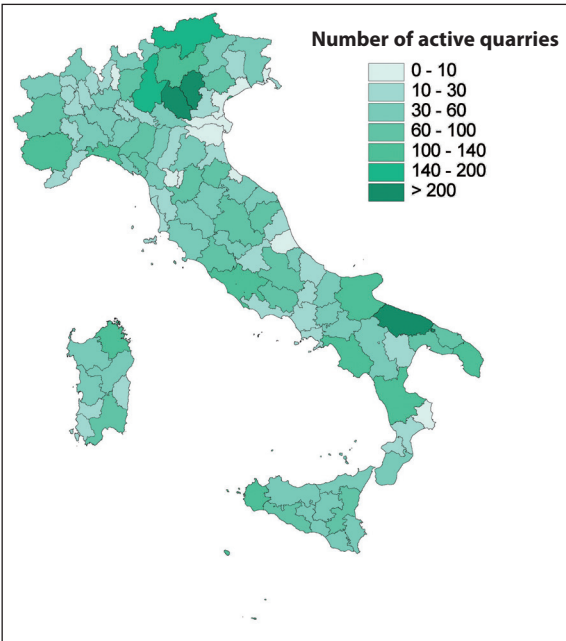
A census highlights that, compared to all other European Countries, Italy hosts the highest number of soil invertebrates. The areas subject to soil biodiversity loss in Italy mainly correspond to areas that are affected by the threats described previously.

Overexploitation, unsustainable management of soil resources and climate change contribute to increasing the environment's vulnerability to desertification, not only in arid, semi-arid and dry sub-humid areas of the earth but also in other parts which are prone to chemical pollu-

tion, salinisation and exhaustion of water availability as well as in areas where there is soil management inefficiency. In Italia, desertification is becoming increasingly evident in the regions of Sardinia, Sicily, Apulia, Basilicata and Calabria.

Mining activities have been scaled back considerably, though problems related to abandoned sites remain unsolved. At present, only 194 mines are actually in operation. Throughout the national territory are active approximately 5,650 quarries, with more than 60% involving the extraction of clay, sand, gravel and limestones. It is not possible to provide an overview of the abandoned or unauthorised sites.

At European level, the growing awareness of the environmental importance of soil and the need to contrast its progressive degradation and functional loss, limit the development of desertification, mitigate floods and landslides and reduce human pressure on the land has led to a substantial review of the legal framework.



Active quarries (2008)

The 6th Environment Action Programme, the new Common Agricultural Policy (CAP; Reg. EU 1782/03 and 1783/03) and the directive proposal for soil conservation (COM (2006) 232) recognise the environmental function of soil and lay the foundations for the protection and conservation of this resource. The current national legislation (Law 152/06) is focussed on mitigating hydrogeological risk and protecting the soil from pollution, with the involvement of a number of different institutional bodies, though there is still no all-encompassing act able to address the other issues as well.

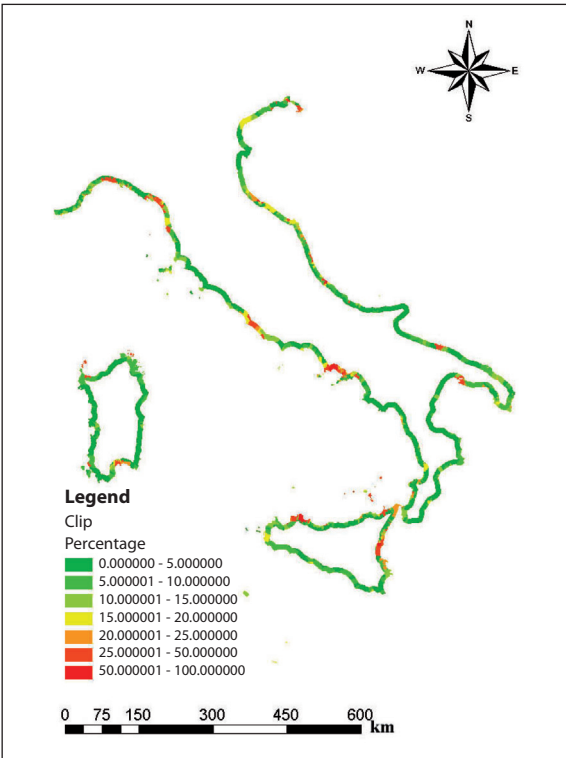
COASTAL AREAS

The coast is a continuously evolving area. Its changes are more clearly visible near low and sandy shores, where there are adjustments of the seashore and land surfaces that emerge and are submerged by the sea. Coastline dynamics mainly depend on the sea's action, but they are also influenced by all those direct and indirect natural and human activities that intervene on the coastal balance, changing its morphological characteristics.

The Italian coast has a length of 8,353 km, of which 4,863 km are low sandy or delta coastlines: the most vulnerable, physically, to sea action, in addition to being subject to intense geomorphological dynamics. Coastal zone risks are mainly related to erosion and to storms or floods, which are mostly relevant to low and sandy coasts and to coastal alluvial plains.

Due to their accessibility, low coastal areas are the most densely occupied by residential settlements and significant business activities (including tourism), as well as by road and sea transport infrastructures (more than 300 km of coastline hold commercial and leisure port facilities).

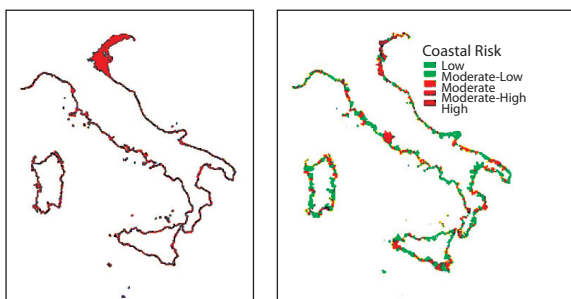
Of the land found within 10 km of the shore, 58.7% is used for agriculture while 6.6% is occupied by urban centres, industries and road, air and sea transport infrastructures.



Percentage of artificially moulded land in the 10 km strip

Italy is one of the countries with the highest risk of coastal erosion in Europe. Out of the 4,863 km of low and delta coasts in Italy, 1,170 km are definitely eroding, in other words, over the last 50 years, 24% of sandy coasts suffered an average erosion of over 25 metres. The most affected regions are: Sicily, with no fewer than 313 km of heavily eroded coast), Calabria, with 208 km, Apulia (127 km), Sardinia (107 km) and Lazio and Tuscany, at respective figures of 63 km and 60 km.

Considering the evolutionary *trend* of Italian littorals and the concentration of activities and urban settlements along the coast, it can be assessed that the area subject to potential flood risk (RICE - *Radium of Influence of Coastal Erosion*¹), with regard solely to coastal municipalities, covers 954,379 ha, the equivalent of 3.17% of the national surface, involving 5,276,535 people (9.12% of the whole population). It is further estimated that 336,746 ha of land (1.12% of the national surface) and 2,133,041 people (3.69% of the total population) are exposed to a medium-high and high risk.



RICE area in Italy and map of coastal risk by municipality

Erosion is growing and is destined to worsen. Over the years, the expansion of areas subject to flood risk has motivated interventions aimed at controlling this phenomenon with the realization

¹ The RICE area is defined as a geometric site of points that satisfy at least one of the two following conditions: distance of no more than 500 m from the coastline; altitude of no more than 5 m* above sea level. (*) To take into account any errors can be made when defining the DTM (Digital Terrain Model), and to avoid underestimating areas below 5 m, 10 m was considered the limit contour line.

of works to protect the coastline. However, hard structures have not resolved the erosion problem, especially in the medium and long term, and, in many cases they have contributed to increasing the process of artificialisation and marine/coastal habitat degradation. Only recently beach replenishing interventions have taken place using sands from land and sea quarries, either soft or protected by hard structures.

The growing attention focused on the protection of the coastal environment, combined with awareness of the need for improved management of coastal zones, has generated specific regulations at the European level, together with national strategies, regional plans etc..

Plans for managing coastal zones are based on systematic activities that monitor and analyse vulnerable areas in order to identify the most adequate provisions to protect sensitive and intensely exploited areas.

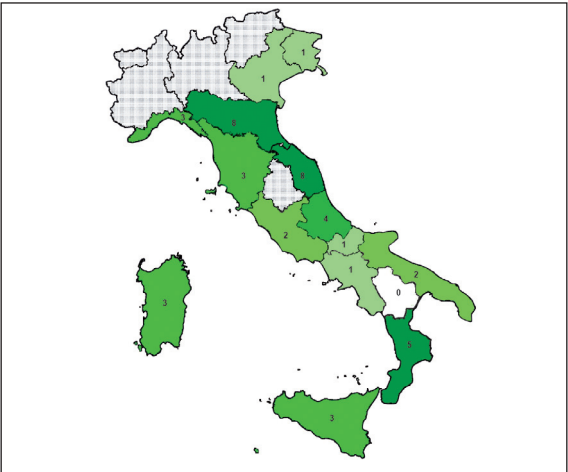
The above only adds urgency to implementation of the EC Recommendation on ICZM (*Recommendation of the European Parliament and of the Council, concerning the implementation of Integrated Coastal Zone Management in Europe* dated 30 May 2002), with the formulation of guidelines endorsed by the local administrations and bodies in charge of planning. Interventions for the establishment of "Coast Plan" regulations are equally urgent, in order to define its minimum extension, on the basis of coast dynamics and not administrative criteria, and give it priority over municipal town plans and other planning instruments.

Out of 15 coastal regions, 9 of them have implemented instruments extending to the entire regional territory. Among these, 6 regions have a specific coastal protection plan, and only Emilia Ro-

magna and Marche have an approved integrated management plan for the coastal strip.

The other regions mainly have coastal protection intervention programmes and Regional Action Plans (POR), which are limited to defining a list of protection works to be carried out on short coast-line stretches.

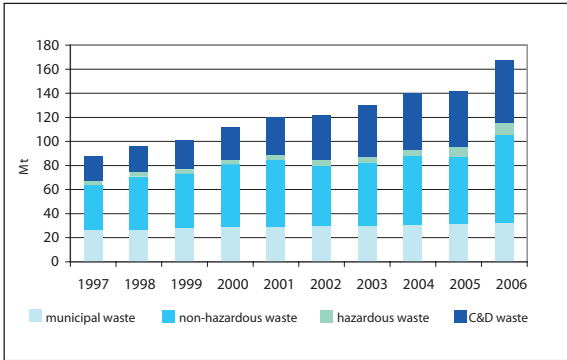
The lack of guidelines and general policies at national level has determined the creation of plans of different legal nature (sectorial plans as per Law 183/89 and Legislative Decree 180/98; Landscape plans, Law 431/85, Legislative Decree 42/04), leading therefore to different methods of planning, compulsoriness and protection of the areas. In any event, the principles of integrated coastal management are gradually emerging, in accordance with the European Recommendation, and planning processes are being accelerated.



Regional planning activities

WASTE CYCLE

Between 1997 and 2006 total waste generation increased from approximately 87.5 million tons in 1997 to 167 million tons in 2006.



Distribution of total waste generation

After many years of high growth, stabilization in waste generation was noted between 2006 and 2007, at a figure of 32.5 million tons: only 40,000 tons more than the previous year, marking an increase of approximately 0.1%.

An analysis of the per capita levels, meant to assess the generation of municipal waste without regard to the size of a given population centre, shows that the highest data for 2007 were recorded in Central Italy, at approximately 630 kg/inhabitant, and the lowest in the South (508 kg/inhab.), while the level in the North stood at 539 kg/inhab.. The outlook is different for the generation of hazardous and non-hazardous waste, which continued to grow, going from 83 million tons in 2000 to approximately 135 million tons in 2006. The total quantity of hazardous and non-hazardous waste generated in Italy in 2006 was equivalent to

134.7 million tons, of which 125.5 million tons was non-hazardous waste (including construction & demolition) and 9.2 million tons was hazardous waste. The construction & demolition waste totalled more than 52 million tons.

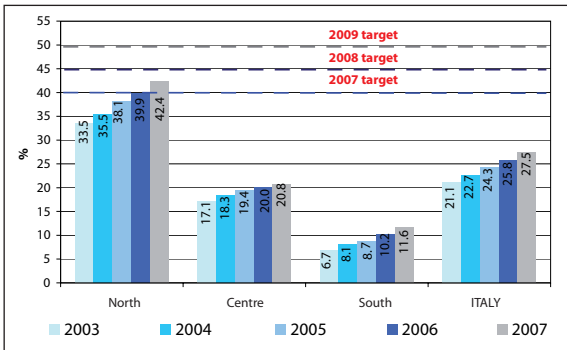
The largest share of total generation of hazardous and non-hazardous waste comes from the construction industry, with around 40% of total generation, followed by the manufacturing industry, with over 37% of total generation.

Per capita generation of hazardous and non-hazardous waste in 2006 was equal to 1,397 kg/inhab. yearly (excluding waste from construction and demolition), of which 1,241 kg/inhab. were non-hazardous waste and 156 kg/inhab. were hazardous.

The new Framework Directive on Waste, 2008/98/EC, declares that waste management must be carried out in accordance with the following priorities:

- quantity and quality prevention of waste;
- preparation for re-use of products which have become waste;
- recycling;
- other types of recovery, such as energy recovery;
- disposal.

Separate collection provides a positive response to the pressure exercised by waste on the environment, having reached, in 2007, a nationwide percentage equivalent to 27.5% of total municipal waste. Although this value highlights a further growth with respect to the value registered in 2006 (25.8%), it still turns out to be lower than the 40% *target* to be reached by 31 December 2007.



Percentage of separate collection of municipal waste

The situation undoubtedly differs from one macro geographic area to the next: the North, with a separate collection rate of 42.4%, has more than met the objective for 2007, nearly achieving it in 2006 (39.9%), while the central and southern regions, at respective percentages of 20.8% and 11.6%, are still far removed from the objective.

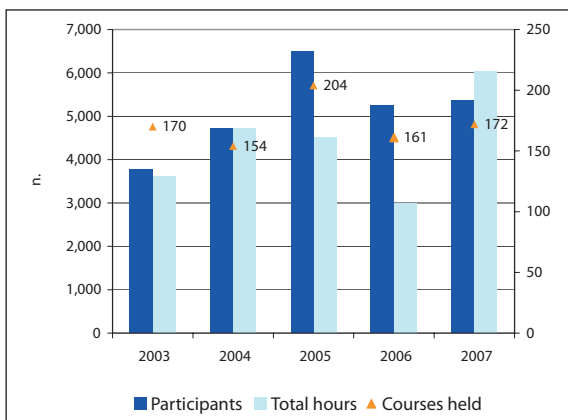
In terms of the management of municipal waste, an analysis of the data for 2007 shows a reduction in landfill disposal (-2.4%) and an increase in mechanical biological treatment (+7.6) and composting from selected waste (+48%).

The total quantity of hazardous and non-hazardous waste managed in 2006 was roughly 117 million tons, of which more than 60 million tons were recovered, more than 43 million were destined for landfill, and also 13.4 million tons were placed in storage.

Apart from the quantities in storage, the data analysis shows that the most widely used form of management for hazardous and non-hazardous waste was recovery (49.3%), though landfill remains the most widely used form of disposal, accounting for 16.3% of the total managed.

INSTRUMENTS FOR ENVIRONMENTAL AWARENESS AND KNOWLEDGE AND INTERFACE WITH THE MARKET

Environmental education, meaning a form of activity not limited to school but extending into adulthood, through continuing education and professional training, constitutes an effective response by society to environmental problems. The primary objective of environmental education is the start-up of a process of maturation in which citizens gain a new awareness that translates into a capacity to modify forms of environmental behaviour and to contribute to the identification of adequate solutions for specific environmental problems.

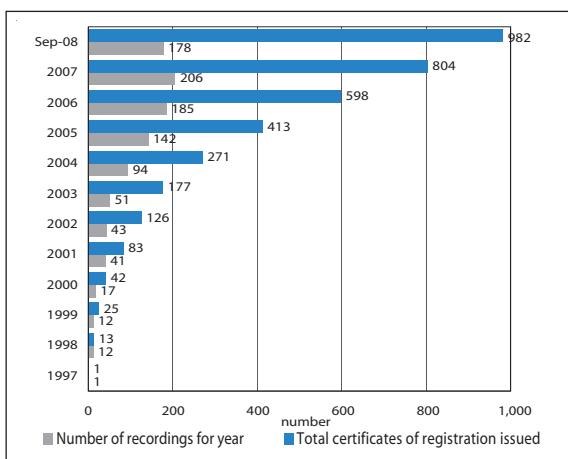


Environmental training programs

To this end, the tools utilised by the Agency System include reporting activities and their products, telematic equipment for accessing environmental data/information, library services and environmen-

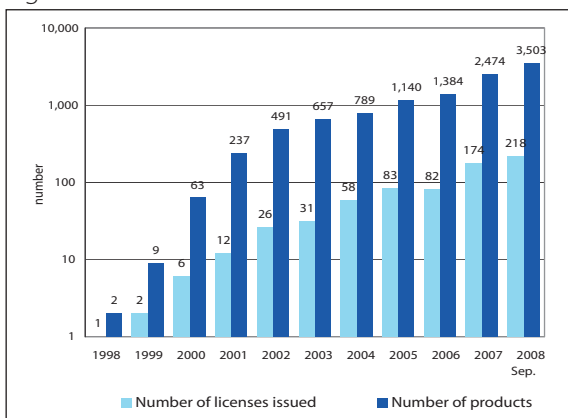
tal training in the strict sense of the term, plus the enactment of the European EMAS and Ecolabel regulations.

In 2007, the Environmental Agencies offered essentially the same levels of environmental information over web channels and services designed to favour communications with the public as in the previous year. The “thematic report” continued to be the reporting product most frequently used by the Agency System, with a total of slightly less than a hundred publications produced. The presence of the local Agencies in the printed press and on TV and radio networks generally confirmed the levels of the previous year. ISPRA further consolidated its position in the printed press and on radio and television. The Agency System promoted various environmental education initiatives and training courses, both face-to-face and remote. In 2007, the environmental education projects organised numbered 290, while there were 172 training programs attended by about 5,300 participants. The undergraduate and post-graduate internships organised by the Agencies and by ISPRA numbered 760. As for penetration of the European regulations EMAS and Ecolabel, it has grown at a significant annual rate since 1997. As of September 2008, the EMAS registration certificates issued numbered 982. The most virtuous regions, in terms of the number of EMAS registered organisations, were: Emilia Romagna, Tuscany and Lombardy, while Campania held fourth place, showing a certain amount of attention on the part of the southern regions. The inconsistency in growth in different regions reflects varying levels of awareness and/or local incentives.



Trend of the number of EMAS registered organisations issued in Italy

From 1998 to 2008 (September), 218 Ecolabel licenses were issued, for a total of 3,503 certified products and services. The trend was positive in terms of both licenses and products/services. In the last two years, the greatest increase has been registered in the tourist sector.



Trend of Number of Ecolabel licenses and products/services in Italy

LEGAL INFORMATION

Neither the Institute for Environmental Protection and Research (ISPRA) nor the individuals who act on its behalf may be held responsible for the uses made of the information contained in this report.

Law 133/2008, which converted, following modification, Legislative Decree no. 112 of 25 June 2008, established the ISPRA – Institute for Environmental Protection and Research. The ISPRA carries out the functions that were the responsibility of the Environmental Protection and Technical Services Agency (formerly APAT), of the National Institute for Wild Fauna (formerly INFS) and of the Central Institute for Scientific and Technological Research Applied to the Sea (formerly ICRAM). The present publication refers to activities carried out during a period preceding the merger of the three institutions, meaning that it still contains references and titles the three institutes no longer in existence.

ISPRA – Institute for Environmental Protection and Research

State of Environment and Environmental Metrology Department

Environmental Statistics and Yearbook Project Service
Via Vitaliano Brancati, 48 - 00144 ROME

www.apat.gov.it

ISBN 978-88-448-0364-3

Reproduction authorised when the source is cited

Graphic treatment: ISPRA

Cover graphics: Franco Iozzoli, ISPRA

Cover photo: Paolo Orlandi, ISPRA

Typographic coordination:

Daria Mazzella and Simonetta Turco

ISPRA – Publishing Department

Administration: Olimpia Girolamo - ISPRA - Publishing Department

Distribution: Michelina Porcarelli - ISPRA - Publishing Department



ISPRA

Institute for Environmental
Protection and Research

PHYSICAL AGENTS

**BIODIVERSITY AND NATURAL, AGRICULTURAL
AND FOREST AREA**

AIR QUALITY

EDUCATION AND TRAINING PROGRAMS

WATER QUALITY

ENVIRONMENT AND HEALTH

NO-IONISING RADIATION

ANTHROPOGENIC RISK

NOISE

**INSTRUMENTS FOR ENVIRONMENTAL KNOWLEDGE
AND AWARENESS, AND INTERFACE WITH THE MARKET**

EDUCATION AND TRAINING PROGRAMS

WASTE CYCLE

CLIMATE CHANGE

IONISING RADIATION

COASTAL AREAS

NATURAL RISK

ENVIRONMENTAL INFORMATION SPREADING

SOIL AND LAND