

## ***1 – TERRITORY AND ENVIRONMENT***

The Region of Sicily extends over an area of 25,711 sq. km. making it the largest island in the Mediterranean, and also the largest Italian Region. It is situated between 12° and 16° east of the Greenwich meridian, and between the 36th and 39th parallel north. Its coastline measures 1,484 km., making up 20% of the national coastline; hilly areas account for over 60% of the total Regional surface area, mountainous zones account for a quarter and plains account for the rest. According to the latest classification 90% of Communes are situated in areas of medium/high seismicity.

Although there have been considerable oscillations in the amount of rainfall over the last few years, what seems to be a decreasing trend in levels of rainfall was registered both in Palermo and the other weather stations in Sicily. In 2008 the highest average monthly temperature was recorded in Messina, with an average of 29.9°; Messina was also the province with the coldest weather (11.8° being the monthly average), not too different, however, from figures registered in the other centres.

Protected nature areas (the last available data is from 2003) extend over an area of 2,707 sq km and make up 10.5% of the Regional territory and 9.3% of the protected areas of the whole country. With regard to marine reserves, these cover an area of 760 sq km, which is equal to 2.7% of the corresponding national figure. The largest marine reserve in Sicily, the Egadi islands, extends over an area of 54,000 hectares, most of which is part of the “partial reserves”, where there is tight control over sports fishing and boating, and also over the “economic and social promotion zone”.

On the basis of a survey carried out by ARPA and the local organisation of the State Forestry Corps, in 2008, 797 forest-fires were recorded on the island of Sicily, signifying a 36.4% drop when compared to the abnormally large number of cases in 2007. The area affected covered 17,774 hectares, 22.7% of which was made up of woodland and the remaining part of other types of vegetation. Each incident affected an average of 22.3 hectares, with a decrease of almost 40% over the previous year. Provincial analysis for 2007 highlights the negative record held by Palermo, with each single fire razing an average area of 36.91 hectares, and the positive record of Ragusa (9.16 hectares per fire).

In 2005, total drinking-water amounted to 554 million cubic metres, corresponding to 6.4% of the national total. The percentage of water subjected to processes of purification was 29.2%, which was lower than the Italian average (31.1%), possibly because the submerged hydro-potable resources were of reasonable quality. The total amount of water supplied amounted to 68.7% of

the total amount of water introduced into the water-supply network (69.9% for the whole of Italy); there were a number of elements to blame for this, including leaking water-pipes, water destined for public consumption but not actually recorded, siphoning-off from reservoirs etc. Out of a total of 390 Communes, 342 have a partial or complete public sewer purification capacity, covering 93.2% of the population. There were 366 purification-plants for urban waste-water in operation in 2005, serving a little over 3.5 million inhabitants. The amount of solid urban waste produced in Sicily during the year 2007 came to 2,695,198 tonnes (-0.8% when compared to the previous year). The per capita annual production came to about 536 kilograms, again slightly lower than for 2006. In 2003-2007 solid urban waste production saw an increase of 6.1%, whereas the per capita figure rose from 515 kg annually to the aforementioned 536 kg.

At the Provincial level the statistics confirm Catania and Palermo in first place as regards the quantity of solid urban waste produced, both in absolute and relative terms. With reference to data per inhabitant Catania had an annual production of 600 kg and Palermo 571 kg, both above the national average. Among the Provinces Enna finds itself at the bottom of the list with 430 kg.

In 2007 differentiated disposal of solid urban waste amounted to 164,805 tonnes (6.1% of the total), down by 7.9% from the previous year. Analysis-by-type of waste revealed the prevalence of paper material, which made up the majority of differentiated waste both at national and Regional levels.

In the period 2002-2007 differentiated waste disposal rose by 11.3% and this represented an increase of 0.3% of the total. At the Provincial level, in 2007, the results ranged from Agrigento, at the top with 10.8%, to Caltanissetta bringing up the tail with a less than commendable 2.9%.

## *Glossary*

**Altimetrical hill zone:** an area characterised by the presence of elevations not higher than 600 m in northern Italy, and 700 m in central-southern Italy and the islands.

**Altimetrical mountain zone:** an area characterised by the presence of elevations not higher than 600 m in northern Italy, and 700 m in central-southern Italy and the islands.

**Altimetrical plain zone:** low and flat land characterised by the absence of elevations. The tracts of land that, even at their furthest point from the sea, slope gently upwards, and can also be considered part of the plain (the land never rising above 300 m in height).

**Altimetrical zones:** the division of the land into homogeneous areas, with adjacent Communes being clustered together on the basis of threshold

altimetrical values. There are three types of zone: mountain, hill and plain. The sea has a moderating effect on the climate, and in order to take this into account, the hill and mountain altimetrical zones have been divided into internal and coastal altimetrical mountain zones and internal and coastal altimetrical hill zones; the land that is washed by the sea, or close to it, and excluded from the plain zone, is included in the coastal areas.

**Average maximum temperature:** the average daily maximum temperature over all the seasons

**Average minimum temperature:** the average daily minimum temperature over all the seasons

**Differentiated disposal:** collection of urban waste to be subsequently divided into homogenous types of material, including organic household waste (destined to be re-used and re-cycled), and the recovery of raw materials.

**Forest area:** total wooded forest area and total un-wooded forest area

**Maximum temperature:** maximum daily temperature over the four seasons

**Minimum temperature:** minimum daily temperature over the four seasons

**National parks:** areas of land, river, lake or sea with one or more eco-systems (which might be intact or slightly altered as a result of human intervention), with one or more physical, geological, geo-morphological or biological formations, which might be deemed of international or national importance for naturalistic, scientific, aesthetic, cultural, educational and recreational reasons, thus requiring government intervention so that they can be conserved for present and future generations.

**Nature reserves:** areas of land, river, lake or sea with one or more species of flora or fauna of naturalistic significance, or with one or more important biologically-varied eco-systems; they might also be used to conserve genetic resources. The amount of relative interest that they generate dictates whether they are run by the government or the Region.

They can be classified as follows:

**Biological nature reserves:** areas set aside principally for the safeguard of the wealth of flora and fauna located there.

**Controlled nature reserves:** controlled areas to be exploited in accordance with local environmental features. The management strategies in these reserves are geared not only towards conservation but also development of the full naturalistic potential of the area. There are also programmes for nature education to foster compatible forms of tourism that are more environmentally friendly and aware.

**Off-limits nature reserves:** areas in which the presence of Man is limited to strictly scientific or supervisory activity.

**Special nature reserves:** set up in such a way as to ensure the safeguard of individual natural phenomena or areas (e.g. waterfalls, caves etc.), “natural monuments”, etc.

**Protected marine areas** are classified into:

Zone A: untainted reserve where any activity that might harm or disturb the marine environment is strictly prohibited.

Zone B: general reserve, where those activities that exploit the resources and guarantee sustainable use of the area with the least impact possible, are allowed, but often regulated and authorised, if necessary, by the managing body.

Zone C: partial reserve, where exploitative activities, allied to a sustainable use of the sea and with low environmental impact, are allowed (to a greater extent than in the other zones) and regulated by the managing body. Most of the protected marine area usually falls into this category.

Zone D: area of economic and social promotion.

**Protected nature area:** area under special management and protection, in which there are to be found physical, geological, geo-morphological, biological formations, of naturalistic and environmental significance.

**Purification plants:** there are three types of purification treatment

- The first permits the removal of most of the sedimentable suspended solids via mechanical decantation, with or without the use of chemicals;
- The second, using aerobe bacteria, renders possible the processes of biological oxidation of the bio-degradable, organic substances suspended and dissolved in waste water;
- The third permits the effective removal of substances not eliminated entirely by the previous treatments (micro-organisms, nutritive salts, organic substances)

**Rainfall frequency:** number of days in which rainfall reaches one millimetre

**Regional parks:** adjacent areas of land, river, lake or stretches of coastland, of naturalistic or environmental importance, which might make up a homogenous zone, enhanced by the area's natural assets, by the beauty of the scenery and surroundings and by the cultural traditions of the local people.

**Seismicity:** obviously, in order to classify seismicity one has to carry out tests on earthquakes in the area in question. Information is also gathered from historical sources, going back to the year 1000 AD. Communes where seismicity is absent, and those for which the present analysis does not consent any possible classification, are included in the "non-classified" category.

**Solid urban waste:**

- a) household waste, (including cumbersome objects), issuing from premises used as dwellings;
- b) safe waste issuing from places and premises not used as dwellings, and integrated with solid urban waste as regards quality and quantity;
- c) waste from road sweeping;
- d) waste of any kind or origin, left on the streets or in public places, or private streets/areas open to the general public, or on beaches, lakesides or riverbanks;
- e) vegetal waste from parks, gardens, cemeteries.

Knowing the precise composition of urban waste permits one to plan for better management, and, consequently, better disposal and recycling.

**Total rainfall:** total daily rainfall measured over all the seasons

**Un-wooded forest area:** tract of land consisting of a surface that is non-productive, but nevertheless essential for production (forest roads, fire-screen roads, timber storage), and other surfaces (stones, swamps, streams, forest nurseries) situated in the forest and intended for personal use, along with forestry-personnel dwellings with adjoining land, and the relative forestry outbuildings.

**Waste:** any substance or object deriving from human activity or natural cycles, and which has been abandoned or is about to be abandoned, is governed by a decree of law stating that a person disposes of, has decided to dispose of, or is obliged to dispose of the following categories (Directive 91/156/CEE regarding waste, 91/689/CEE on harmful waste and 94/62/CE on packaging and packaging waste, decree 5/2/1997, no. °22). Waste is classified according to its origin, as either urban or special waste, and, according to its characteristics, as dangerous or non-dangerous waste.

**Wooded forest area:** an extensive forest area of not less than half an acre, in which there are ligneous, arboreal and/or shrubby forest plants that provide wood and other related products; once fully grown, the area of incidence (the area of ground over which the foliage projects) covers at least 50% of the surface, with a potentially indirect impact on the climate and water regime.

## **Further reading**

### Publications

“Environmental Data Yearbook, 2008”– National Agency for the Protection of the Environment

“Report on Landslides in Italy”, 2007 - National Agency for the Protection of the Environment

Italian Statistical Yearbook – 2009 - ISTAT

“Italian Energy Scenarios – assessment of measures for energy policy”, 2004  
ENEA

### Internet

[www.apat.gov.it](http://www.apat.gov.it)

Environmental Data Yearbook

Report on Landslides in Italy

Indicators for Sustainable Development in the Mediterranean

[www.sinanet.apat.it](http://www.sinanet.apat.it)

National Agency for the Protection of the Environment – 1<sup>st</sup> report on the state of implementation of acoustic zoning in Italian Communes  
MAIS – Access module for spatial information  
BRACE - Air quality data-bank

[www.park.it](http://www.park.it)

Database of areas protected by the Italian Federation of Nature Parks and Reserves

[www.idromare.com](http://www.idromare.com)

Marigraphical Services

[www.artasicilia.net](http://www.artasicilia.net)

Regional Agency for the Protection of the Environment – Report on the state of the environment in Sicily

[www.minambiente.it](http://www.minambiente.it)

Committee for surveillance of Water resources:

“The principal economic variables of the water services sector”

“Annual report to Parliament on the state of the water services”

“Problems related to the utilisation of Genetically Modified Organisms and proposals for intervention”

APAT – ONR, Report on waste

APAT – ONR, Annual report on urban waste management

[www.pcn.minambiente.it](http://www.pcn.minambiente.it)

National cartographical portal

[www.conferenzacambiamentoclimatici2007.it](http://www.conferenzacambiamentoclimatici2007.it)

Minutes from the national conference on climatic change 2007

<http://www.istat.it>

Environmental statistics

Italian Statistical Yearbook 2009 – Chapter 1 – Territory and Environment

Statistics about water

[www.arpasicilia.it](http://www.arpasicilia.it)

Environmental data Regional yearbook

[www.euroinfosicilia.it](http://www.euroinfosicilia.it)

Report on the state of the environment in Sicily

[www.starnet.unioncamere.it](http://www.starnet.unioncamere.it)

Thematic areas– Analysis and data– Territory – Data about the Territory and Environment

[www.pesca.ismea.it](http://www.pesca.ismea.it)

Data about the coasts and bathing possibilities