

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., accounting for 20% of the national coastline; hilly areas make up over 60% of the total Regional surface area, mountainous zones make up a quarter and plains make up the rest.

Sicily is a Region characterized by a medium-to-high seismic risk and, as in the rest of the country, the number of seismic events is constantly monitored by the Istituto Nazionale di Geofisica e Vulcanologia (INGV). In this chapter there are figures for all seismic activity recorded between 2000 and 2012, for each level of magnitude, with epicentres both on land and in Sicilian waters. The highest number of seismic events in the Region (1,638, 96% of cases being of insignificant intensity) were recorded during the year 2011. The 1,219 seismic events recorded in Sicily in 2012 had a magnitude below 3.0 in over 95% of cases.

On the basis of SIAS (Servizio Informativo Agrometeorologico Siciliano) data-processing, over the last year there was a fall in the level of rainfall in the Region. The average amount of rainfall in 2012 in Sicily amounted to 627.7 millimetres (against 764 mm in 2011) with the heaviest rainfall in the Provinces of Messina, Catania, Siracusa and Palermo. The highest average monthly temperature was recorded in Ragusa, with an average of 17.7°, whereas Messina was the Province with the coldest climate (15.2° being the monthly average in 2012).

As for conservation of the environment, an ever more topical issue from the scientific and political perspectives, this yearbook provides data (last available data, October 2012) from the protected (ZPS) areas, the Sic areas (sites of Community importance) and the Natura 2000 network.

There are 238 protected areas belonging to the Natura 2000 network in Sicily, accounting for a total area of about 640,000 hectares, or 24.8% of the whole Regional surface area. The Natura 2000 network includes the ZPS as laid down by the “Uccelli” (lit. Birds) authority, for the protection of wild birds, and the SIC areas envisaged by the “Habitat” authority, for the conservation of natural and semi-natural habitats, wild animal and vegetal species. In Sicily, up to October 2012, there were 30 ZPS over an area of a little under 400,000 hectares, and 223 SIC accounting for 19% of the total Regional area.

On the basis of a survey carried out by ARPA and associated organizations of the State Forestry Corps, in 2012 there were 1,271 forest-fires reported in Sicily, which represented a 25.7% increase when compared to the

number of cases reported in 2011. The area affected covered 55,583 hectares, 50% of which was made up of woodland and the remaining part of other types of vegetation; an average of 43.7 hectares were consumed by each fire. A Provincial analysis for 2012 highlights the negative record held by Messina, with 325 fires and the relatively positive figures for Caltanissetta (41 fires in 2012). Fires affected 12,774 hectares of woodland in the Province of Palermo and rather fewer than 528 hectares in the area of Ragusa.

In 2008, the total consumption of drinking-water amounted to 626 million cubic metres, corresponding to 6.9% of the national total. The percentage of water subjected to processes of purification was 35.2%, which was higher than the Italian average (32.2%). The total amount of water supplied amounted to 64.8% of the total amount of water introduced into the water-supply network (67.9% being the figure 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 and so on. The amount of water invoiced for civilian use (i.e. domestic and non-domestic, in accordance with the hygienic-sanitary requirements of persons in structures designated for public or commercial use) can be considered a substitute figure for the amount of water actually consumed by the population. In Sicily, in 2008, 365 million cubic metres (6.9% of the national figure) of drinking water were invoiced. 95.1% of the Regional total of water sales were for public consumption, 4.6% for industrial use and only 0.3% for agriculture.

The amount of solid urban waste produced in Sicily during the year 2012 totalled 2,422,831 tonnes (-6.1% when compared to the previous year). The annual per capita production amounted to about 485 kilograms (-6% when compared to 2011). Over the period 2008-2012 solid urban waste production fell overall by 8.6%, whereas the per capita figure fell from 526 kg annually to the afore-mentioned 485 kg (-7.8%).

At the Provincial level the statistics confirm Catania and Palermo in first place as regards the quantity of solid urban waste produced in absolute terms. With reference to data per inhabitant, Catania had an annual production of 517 kg (above the national average of 504 kg per inhab.) and Palermo 532 kg per inhab. Among the other Provinces, Enna finds itself at the bottom of the heap with 395 kg per inhab. in 2012.

In 2012 differentiated disposal of solid urban waste amounted to 321,065 tonnes (13.3% of total waste), higher (by +11%) than in the previous year. Analysis-by-type of waste in 2011 (last data available) revealed the prevalence of paper material, which constituted the majority of differentiated waste both at national and Regional levels.

Glossary

Altimetrical hill zone: an area characterized 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 characterized 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 characterized by the absence of elevations. The tracts of land, even at their furthest point from the sea, slope gently upwards, and can even 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 Municipalities 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. All the land that is washed by the sea, or is very 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 separated 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 structures, which might be deemed of international or national importance for naturalistic, scientific, aesthetic, cultural, educational and recreational reasons; government intervention would then be required in order to preserve them 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 their wealth of flora and fauna.

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 aimed at fostering compatible forms of tourism that are more environmentally friendly and aware.

Off-limits nature reserves: areas in which the presence of Man is restricted 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 authorized, whenever necessary, by the managing body.

Zone C: partial reserve, where fruition, allied to a sustainable exploitation of the sea (and with low environmental impact), is encouraged and 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 aerobic bacteria, renders possible the processes of biological oxidization 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 millimeter

Regional parks: contiguous 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.

Sites of Community importance (SIC): Following directive no.92/43/EEC, regarding conservation of natural and semi-natural habitats and wild flora and fauna (the "Habitat" directive), nature areas have been set up; these are geographically defined and extend over a restricted area. Necessary conservation measures are taken to refurbish or maintain natural habitats and/or those species of flora and fauna (for which the area has been chosen) in a state of satisfactory conservation.

Solid urban waste:

household waste, (including cumbersome objects), issuing from premises used as dwellings;

safe waste issuing from places and premises not used as dwellings, and integrated with solid urban waste as regards quality and quantity;

waste from road sweeping;

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;

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 a 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 either 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.

ZPS – special protected zone: following directive no.79/409/EEC, suitable areas have been set aside for the geographic extension and/or localization as regards the conservation of bird species (q.v. attachment 1 of the directive regarding the conservation of wild birds).

Further reading

Publications

“Environmental Data Yearbook, 2012”– 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 – 2013 - ISTAT

“Italian Energy Scenarios – assessment of measures for energy policy”, 2004
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www.sinanet.apat.it
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MAIS – Access module for spatial information
BRACE - Air quality data-bank

<http://www.sias.regione.sicilia.it/>

www.park.it
Database of areas protected by the Italian Federation of Nature Parks and Reserves

www.idromare.com
Marigraphical Services

www.artasicilia.net
Regional Agency for the Protection of the Environment – Report on the state of the environment in Sicily

www.minambiente.it
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“The principal economic variables of the water services sector”
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<http://annuario.isprambiente.it/>
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www.pcn.minambiente.it
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www.conferenzacambiamenticlimatici2007.it
Minutes from the national conference on climate change 2007

<http://www.istat.it>
Environmental statistics
Italian Statistical Yearbook 2013 – Chapter 1 – Territory and Environment

<http://www.istat.it/it/archivio/57514>
World water day : ISTAT statistics

www.arpasicilia.it
Environmental data Regional yearbook.

www.euroinfosicilia.it
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www.starnet.unioncamere.it
Thematic areas– Analysis and data– Territory – Data about the Territory and Environment

www.pesca.ismea.it
Data about the coasts and bathing possibilities