Portugal
State of the Environment
Report 2012

Charts and Figures

PORTUGUESE ENVIRONMENT AGENCY

GOVERNO DE PORTUGAL

MINISTRY FOR AGRICULTURE, SEA, ENVIRONMENT AND SPATIAL PLANNING

Title

Portugal

State of the Environment Report 2012 | Charts and Figures

Publisher

Portuguese Environment Agency

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Design and layout

Portuguese Environment Agency

Legal deposit

138 314/99

ISBN

978-972-8577-64-3

Edition date

February 2013

Cover image courtesy of Mrs. Margarida Cardoso da Silva

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PORTUGUESE ENVIRONMENT AGENCY

CONTENTS

General Framework

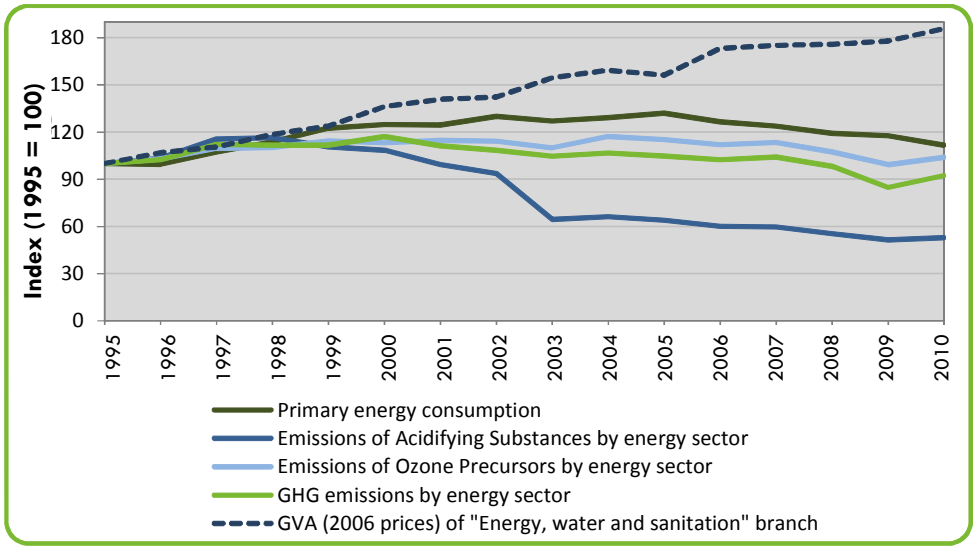
SOCIO-ECONOMIC FRAMEWORK

Area (km²)			92 212
Perimeter of National Territory (km):			
Portugal			3 904
Mainland			2 559
Autonomous Region of the Azores			943
Autonomous Region of Madeira			402
Highest Point (m)			2 351
Coastline Lenght (km)			2 586
Exclusive Economic Zone – EEZ (km²)			1 714 800
Municipalities (No.)			308
Resident population (No.)	2011		10 561 614
Population Density (hab/km²)	2011		114.5
Active Population (thousands)	2011		5 543.2
		Portugal	**EU-27**
GDP per capita (Index EU-27=100)	2011	77	100
General government gross debt (% of GDP)	2011	107.8	82.5
Labour productivity (Index EU-27=100)	2010	77.2	100
Inflation rate (%)	2011	3.6	3.1
Total R&D expenditure (% of GDP)	2010	1.59p	2.0e
Old-age dependency ratio (%)	2011	27.2	25.9p
Unemployment rate (%)	2011	12.9	9.7
Inequality of income distribution (S80/S20 – %)	2010	5.6	5
Population at risk of poverty or social exclusion (%)	2010	25.3	23.5
Population aged between 20 to 24 who have completed at least upper secondary education (%)	2010	58.7	79

e Estimated p Provisional

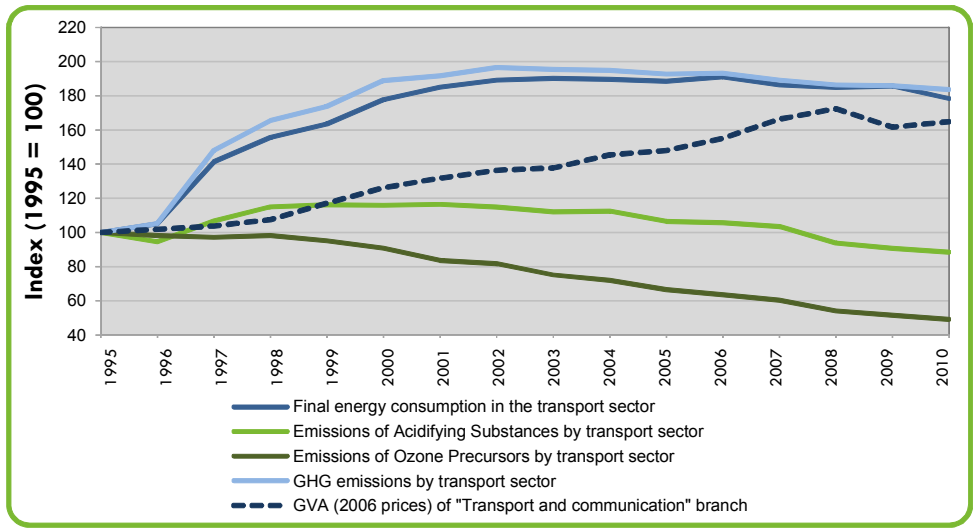
1. Eco-efficiency of the energy and transport sectors

Eco-efficiency of the energy sector – production and processing of energy



Source: INE, 2012

Eco-efficiency of the transport sector



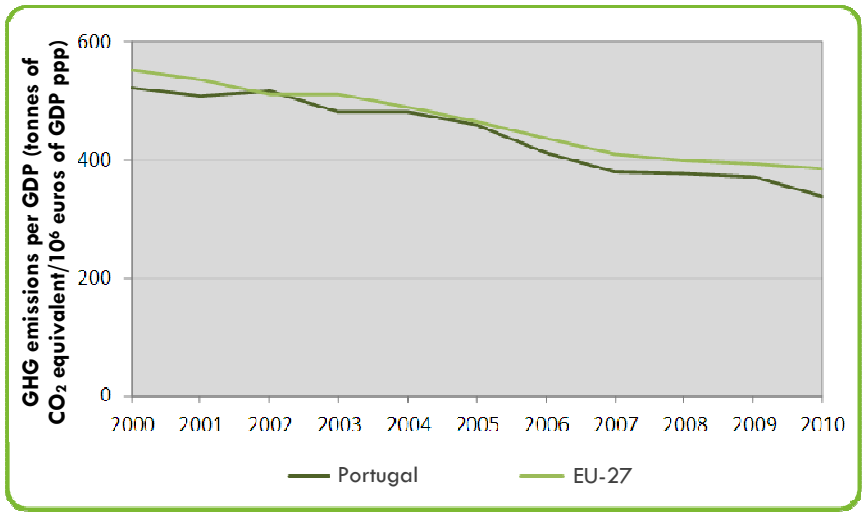
Source: INE, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=48

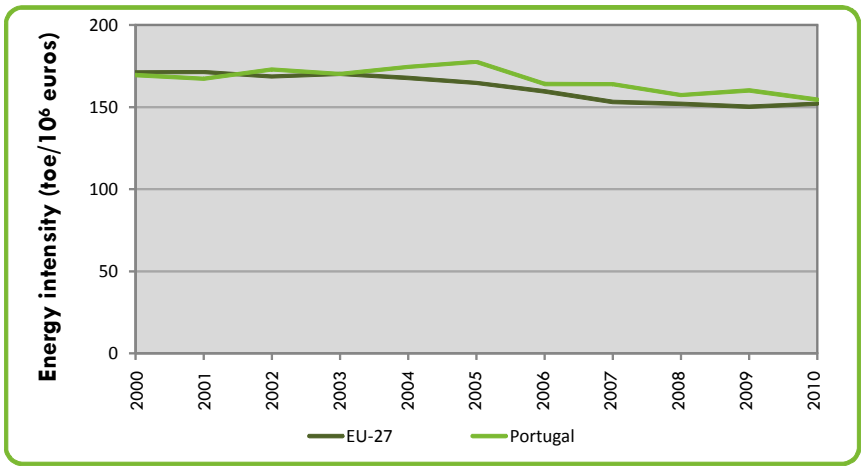
2. Energy and carbon intensity of the economy

Carbon intensity of the economy: Portugal and EU-27



Source: EEA, 2012; Eurostat, 2012

Energy intensity of the economy: Portugal and EU-27



Note: This indicator is the result of the ratio between the gross inland energy consuption and the gross domestic product - GDP. The gross inland consumption is calculated as the sum of gross inland consumption of five energy types: coal, electricity, oil, natural gas and renewable energy sources.

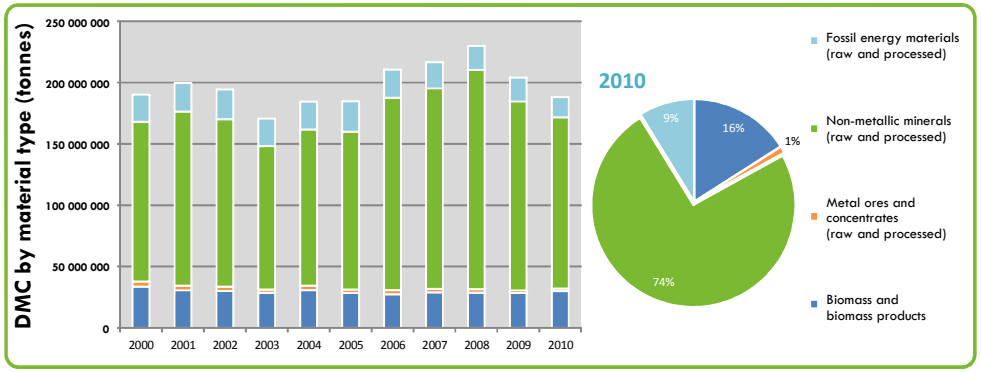
Source: Eurostat, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=28

3. Domestic material consumption

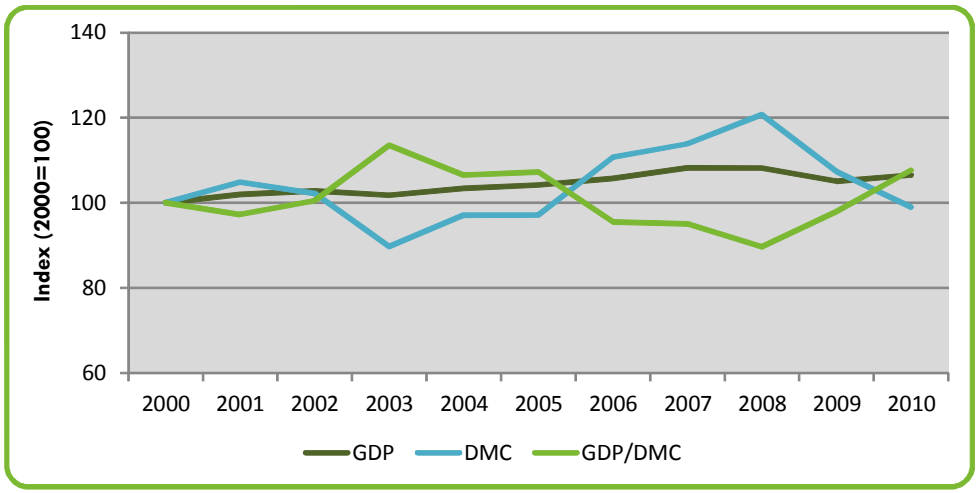
Composition of domestic material consumption by material type



Note: 2010 data are provisional.

Source: INE, 2012

Evolution of GDP, domestic material consuption and resource productivity in the economy



Note: 2010 data are provisional.

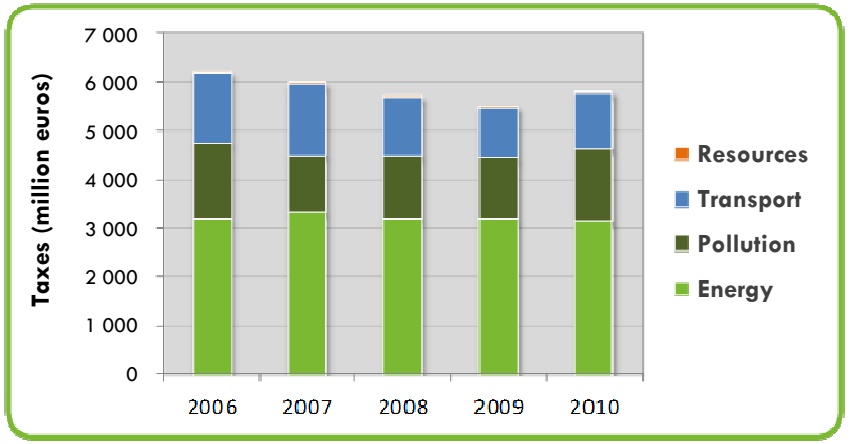
Source: INE, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=12

4. Environmental taxes

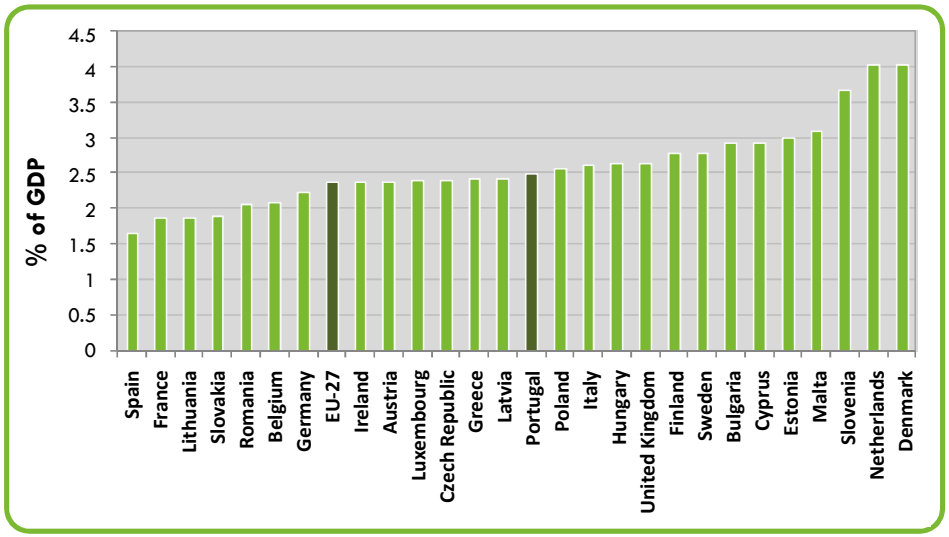
Total environmental taxes by category



Note: 2010 data are provisional.

Source: INE, 2011

Environmental taxes as % of GDP in the EU-27 in 2010



Note: Eurostat data do not include taxes on tobacco and noise.

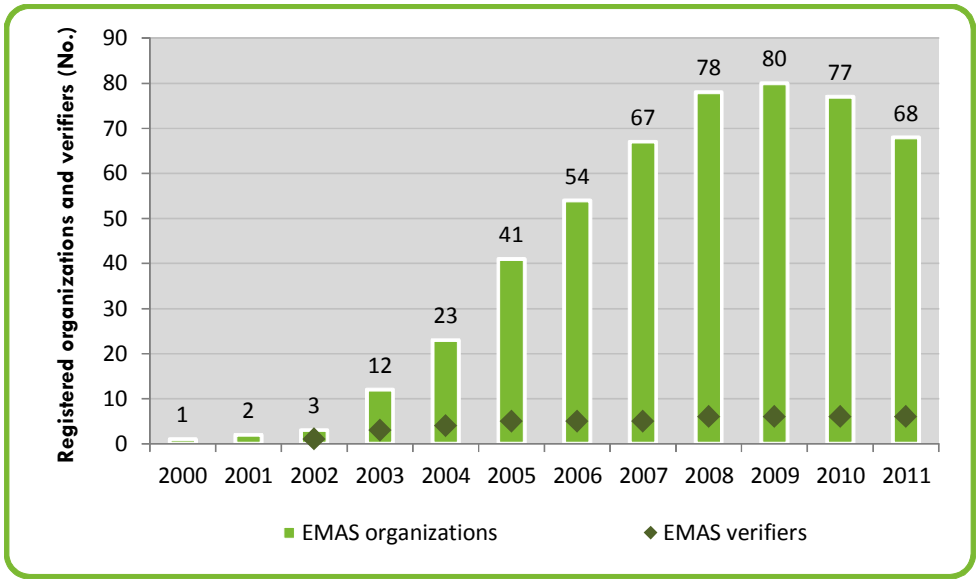
Source: Eurostat, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=133

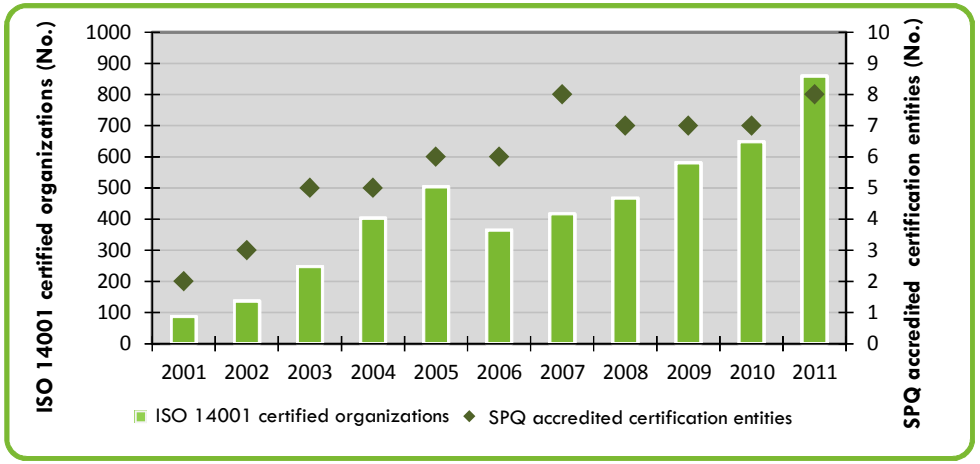
5. ENVIRONMENTAL MANAGEMENT INSTRUMENTS

EMAS registered organizations and verifiers accredited in Portugal



Source: APA, 2012

ISO 14001 certified organizations and Portuguese Quality System accredited certification entities in Portugal



Source: IPAC, 2012

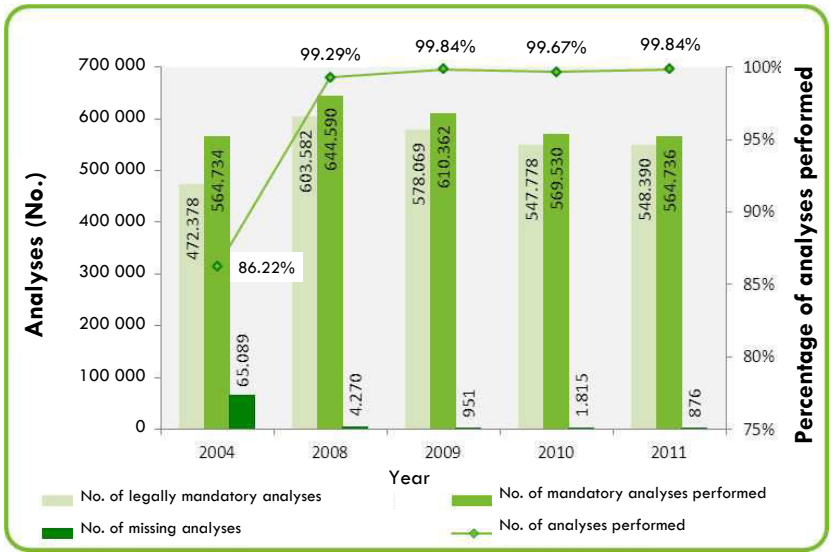
For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=24

WATER QUALITY

6. Drinking water quality

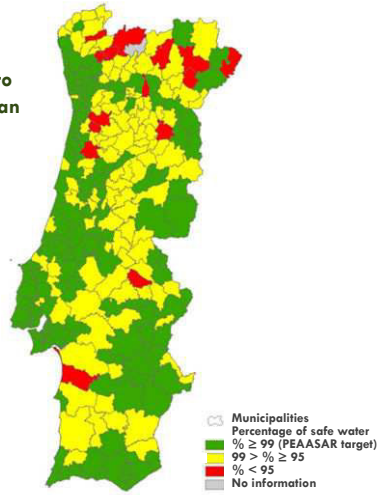
Legally mandatory analyses, performed and missing



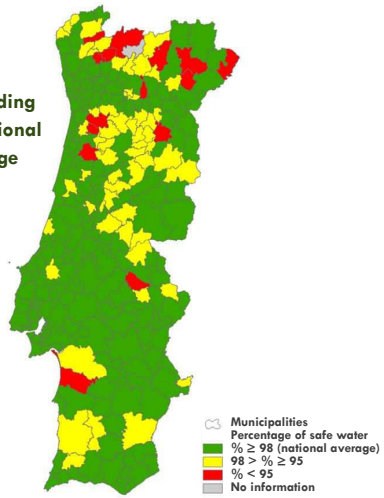
Source: ERSAR, 2012

Geographical distribution of safe water, by municipality

According to Strategic Plan for Water Supply and Sanitation 2007-2013 target



According to national average



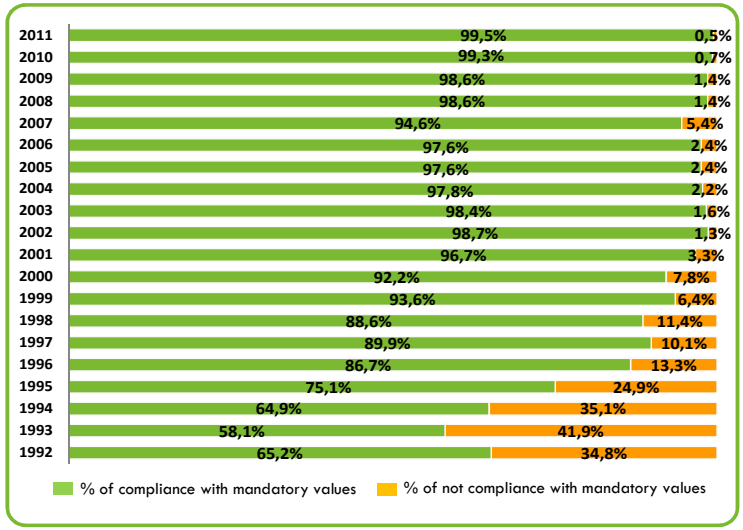
Source: ERSAR, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=43

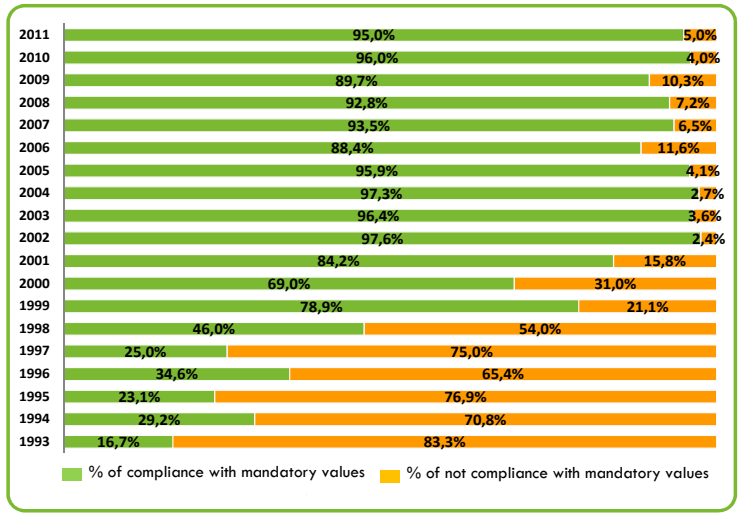
7. Bathing water quality

Evolution of coastal and transitional bathing waters compliance



Source: APA, 2012

Evolution of inland bathing waters compliance



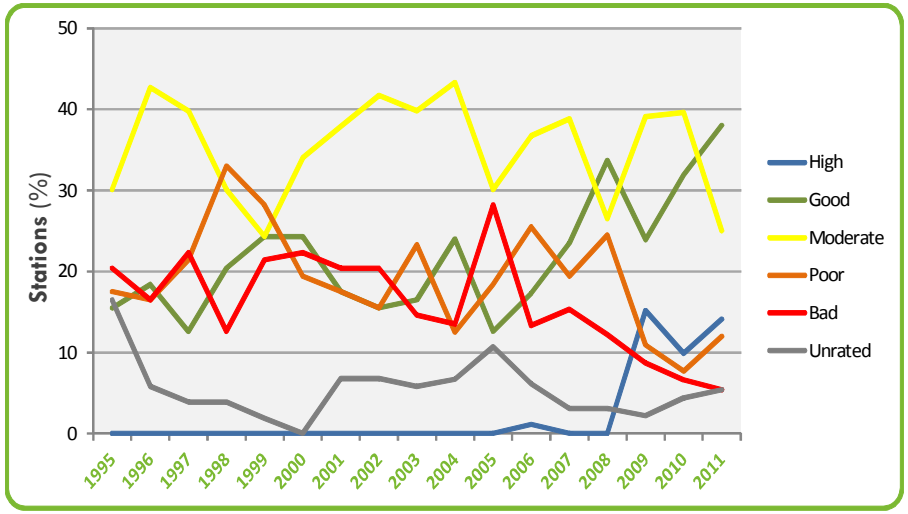
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=42

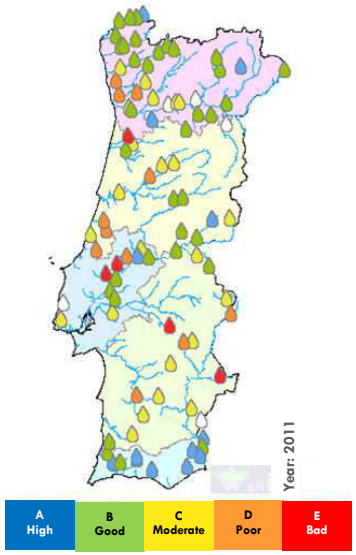
8. SURFACE WATER QUALITY

Evolution of surface water quality in mainland Portugal



Source: APA, 2012

Surface water quality in mainland Portugal in 2011



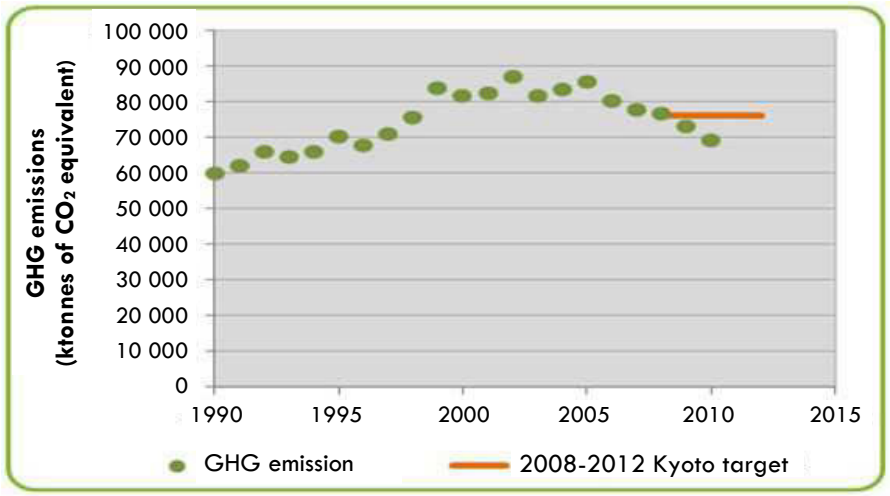
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=22

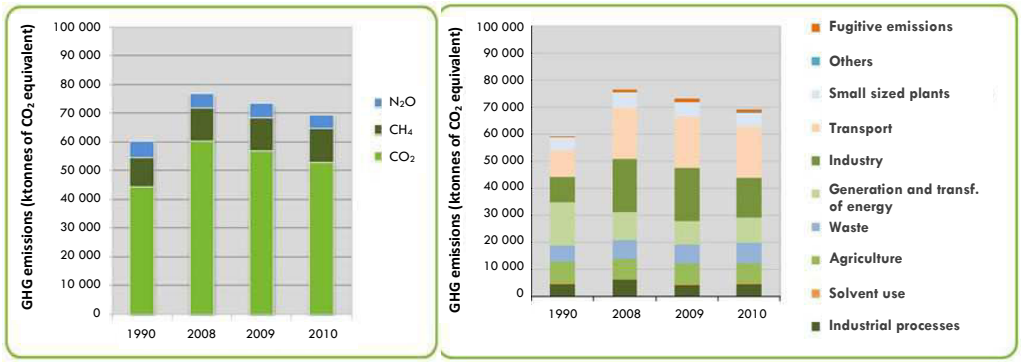
9. GREENHOUSE GAS EMISSIONS

GHG emissions (CO_2, CH_4 and N_2O) and commitments for 2008-2012



Source: APA, 2012

GHG emissions by gas and by sector



Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=17

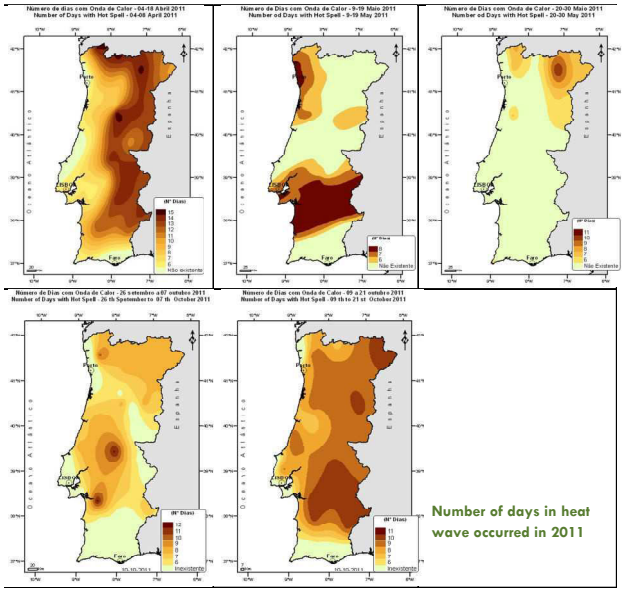
10. EXTREME WEATHER EVENTS

Number of days of selected meteorological parameters in 2011

Weather stations	Hourly Prec. ≥ 10mm	Max. Temp. ≥ 35°C	Min. Temp. ≤ 0°C	Wind ≥ 70 km/h	Heat wave	Cold wave
Aveiro	6	0	0	3	0	0
Beja	9	20	0	1	29	0
Braga	6	3	21	3	42	7
Bragança	2	5	54	3	37	0
Castelo Branco	5	14	6	1	20	6
Coimbra	3	6	0	5	21	0
Évora	4	21	3	4	22	0
Faro	6	0	0	6	0	0
Guarda	5	0	23	10	44	0
Leiria	3	6	19	6	32	0
Lisboa	6	2	0	3	14	0
Portalegre	5	10	3	7	29	0
Porto	7	0	1	4	15	0
Santarém	4	11	0	1	30	0
Setúbal	6	4	0	0	20	0
Viana do Castelo	8	1	6	9	8	0
Vila Real	3	6	12	2	26	0
Viseu	3	4	7	6	17	0
Funchal	3	0	0	0	0	0
Ponta Delgada	7	0	0	23	0	0

Source: IM, 2012

Heat waves in 2011



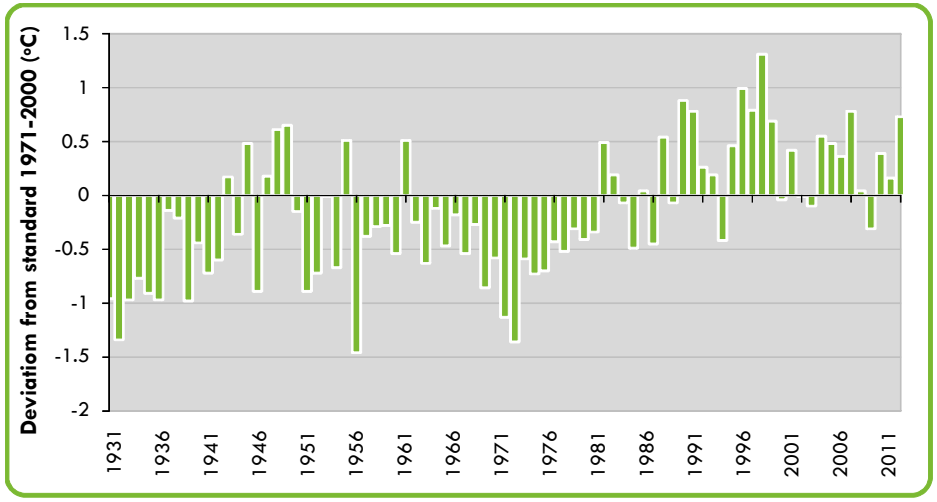
Source: IM, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=134

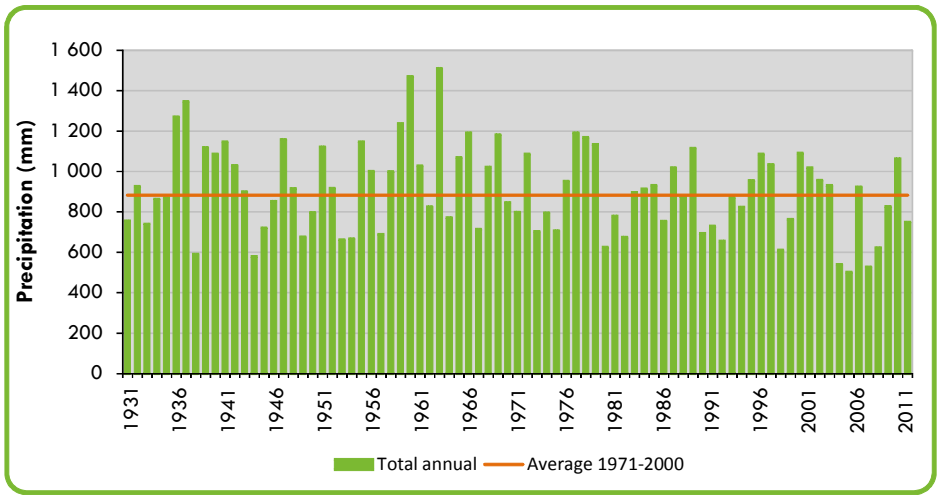
11. Precipitation and surface air temperature

Average anual air temperature in mainland Portugal – Deviations from standard 1971-2000



Source: IM, 2012

Average anual amount of precipitation in mainland Portugal – Comparison with the average 1971-2000



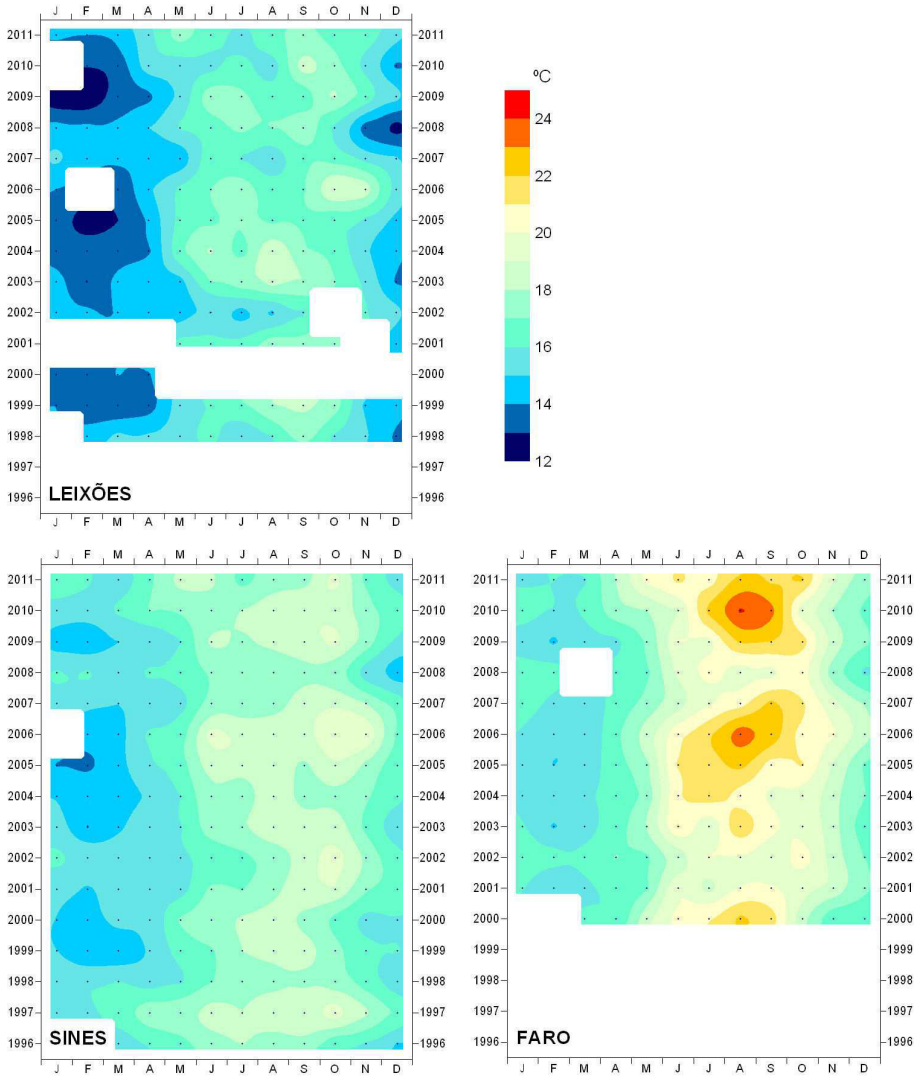
Source: IM, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=47

12. Sea surface temperature

Interannual variation of the seasonal pattern of sea surface temperature, obtained from the monthly mean values at Leixões, Sines and Faro stations



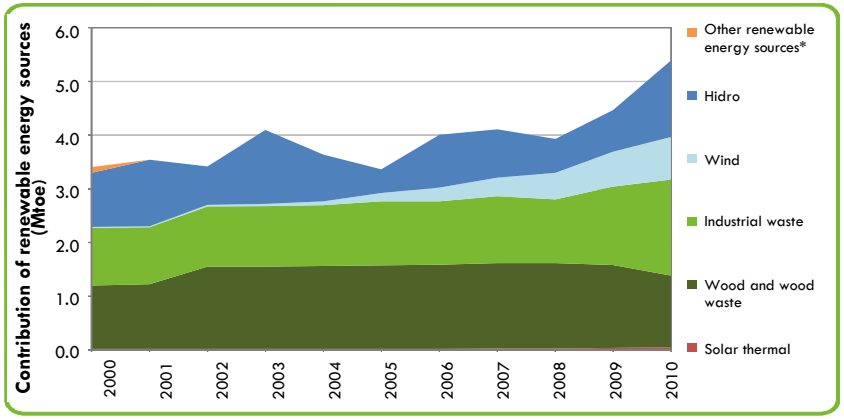
Source: IH, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=135

13. Electricity consumption from renewable energy sources

Contribution of renewable energy sources for energy balance

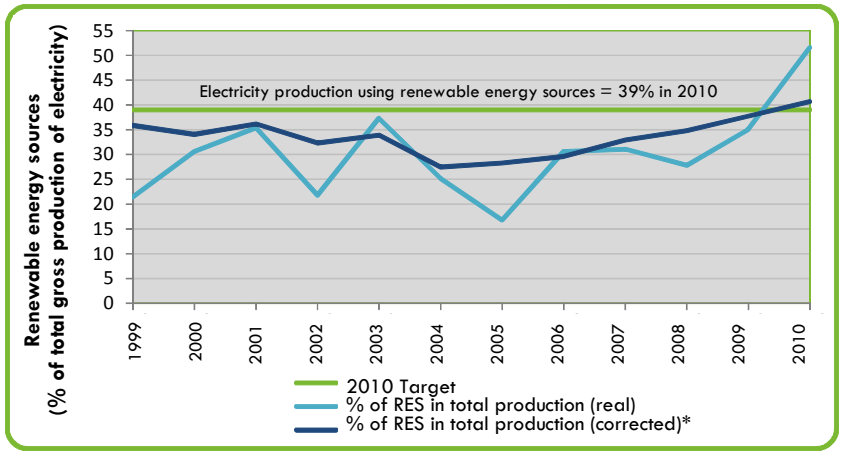


Note: toe - tonnes of oil equivalent, equivalent to 10^7 kcal.

* Includes solar photovoltaic, geothermal of low and high enthalpy and biogas.

Source: DGEG, 2012

Percentage of gross production of electricity from renewable energy sources in mainland Portugal and compared with the target of Directive 2001/77/EC



* The total electricity produced was corrected with the index of hydro production for comparison with the target set by Directive 2001/77/EC.

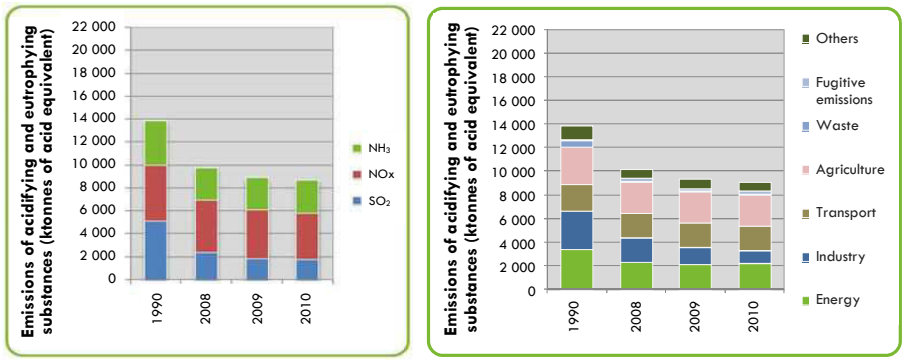
Source: DGEG, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=19

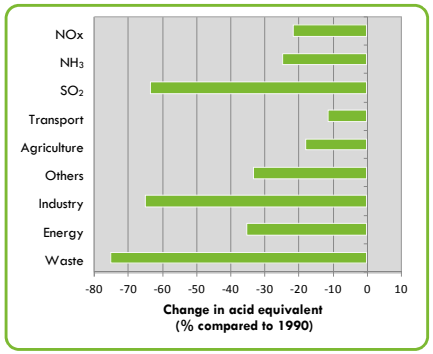
14. Emissions of acidifying and eutrophying substances

Emissions of acidifying and eutrophying substances by pollutant and by sector



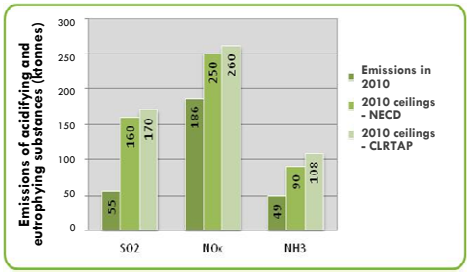
Source: APA, 2012

Change in Acid Equivalent between 1990 and 2010 by pollutant and by sector



Source: APA, 2012

Comparison of emissions in Portugal with the european and international emission ceilings in 2010



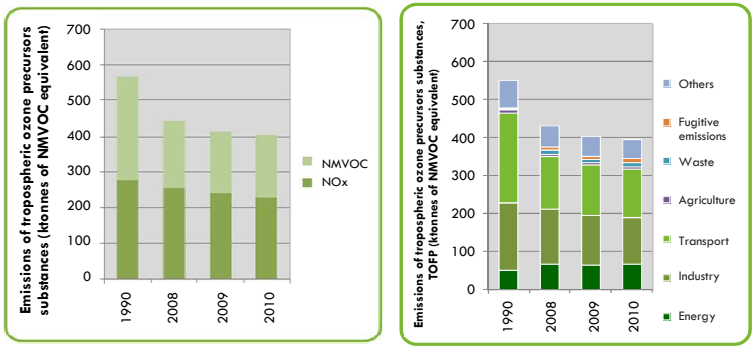
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=54

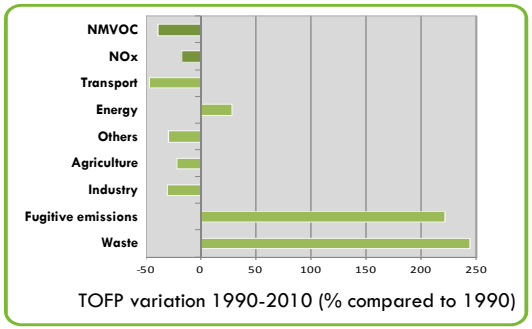
15. Emissions of tropospheric ozone precursors

Emissions of tropospheric ozone precursors by pollutant and by sector



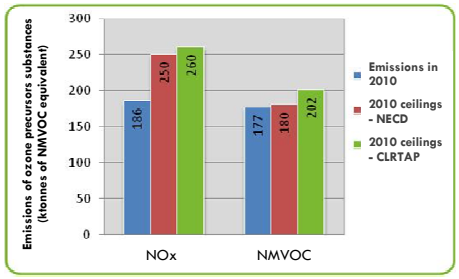
Source: APA, 2012

Change of emissions of tropospheric ozone precursors between 1990 and 2010 by pollutant and by sector



Source: APA, 2012

Comparison of emissions in Portugal in 2010 with the european and international emission ceilings



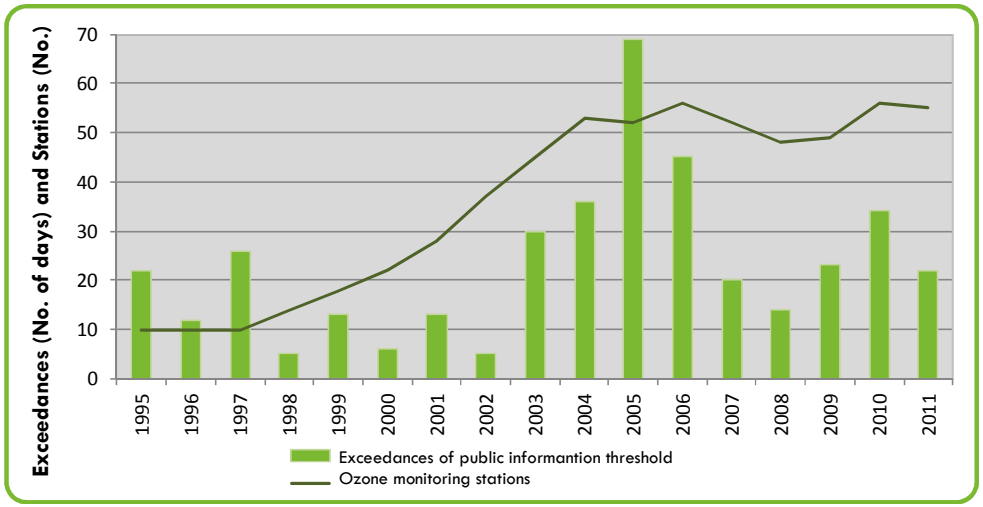
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=55

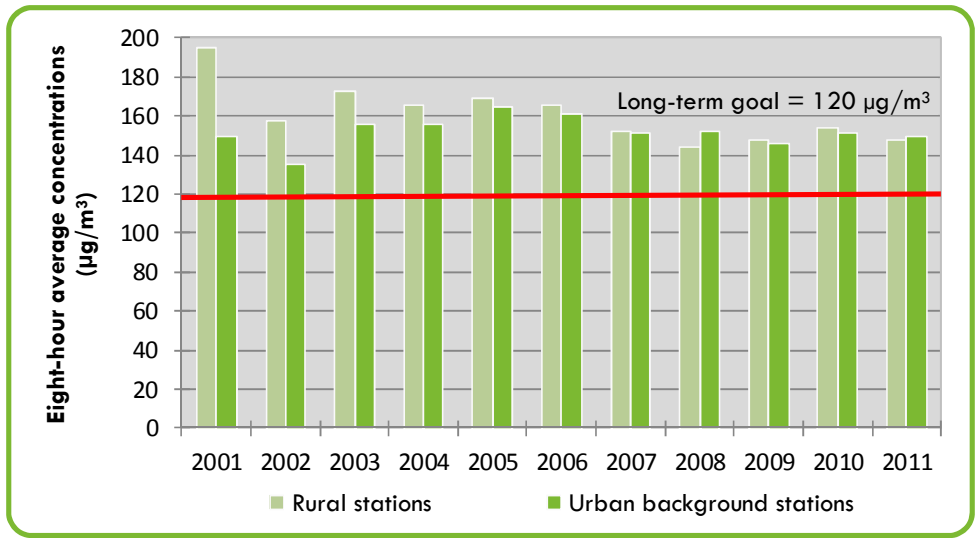
16. Episodes of tropospheric ozone pollution

Exceedances of public information threshold values and number of tropospheric ozone monitoring stations



Source: APA, 2012

Eight-hour average concentrations of tropospheric ozone



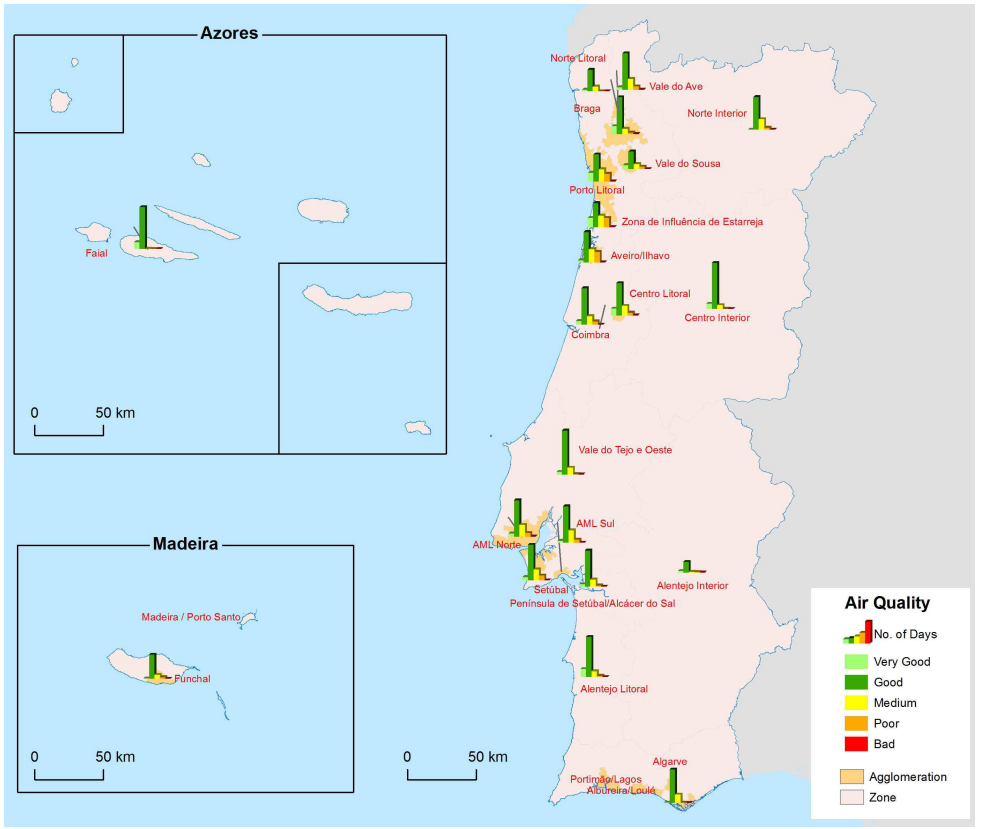
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=136

17. Air quality index

Air quality index, in 2011



Source: CCDR Norte, CCDR Centro, CCDR Lisboa e Vale do Tejo, CCDR Alentejo, CCDR Algarve, DRA Açores, DRA Madeira, 2012

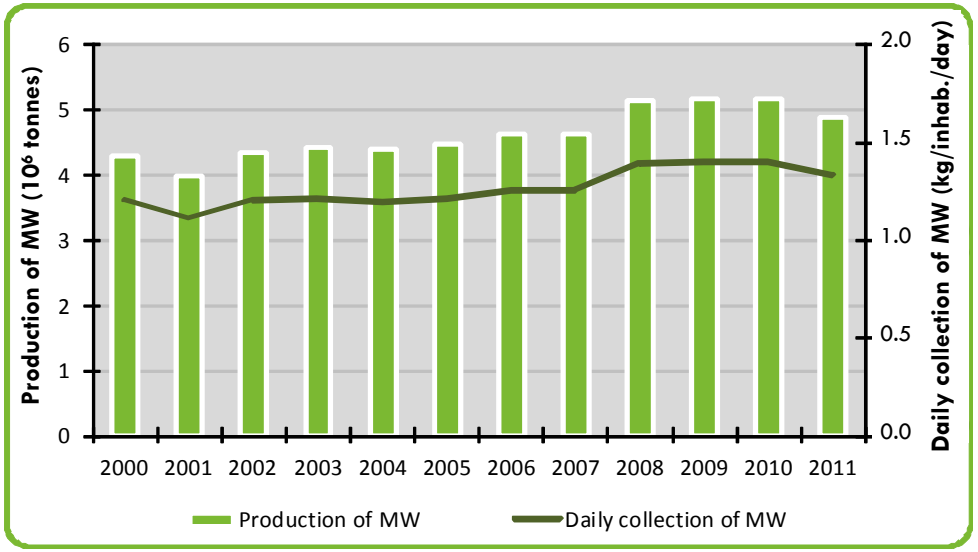
For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=8

Waste

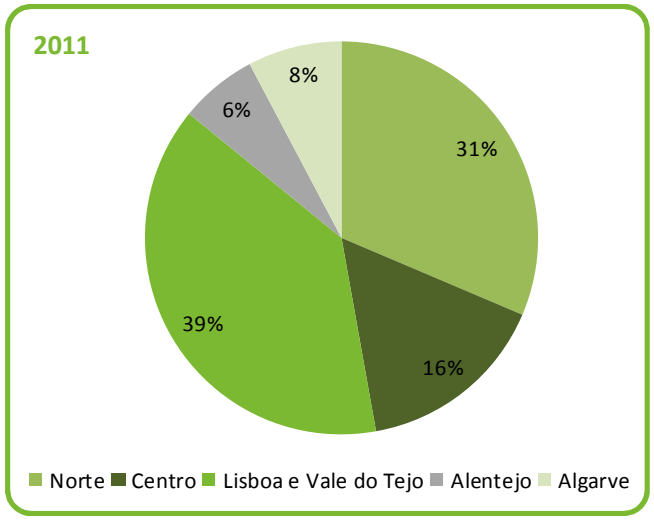
18. Municipal waste generation

Municipal waste generation in mainland Portugal



Source: APA, 2012

Municipal waste production in mainland Portugal by region in 2011



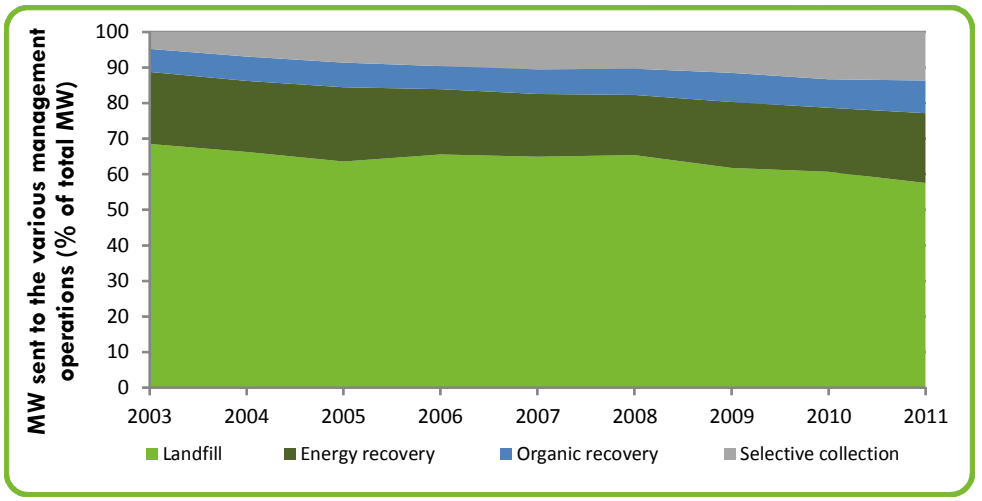
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=31

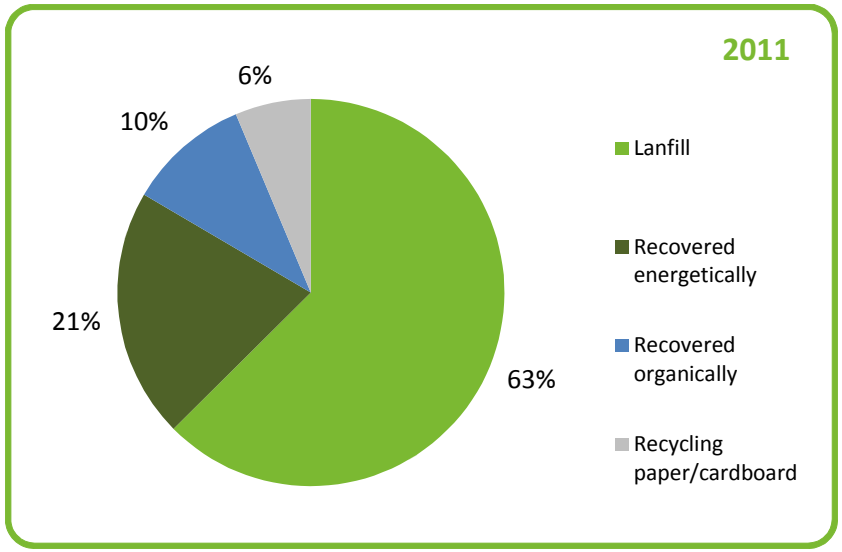
19. Municipal waste treatment and disposal

Municipal waste management operations in mainland Portugal



Source: APA, 2012

Final destination of biodegradable municipal waste in 2011



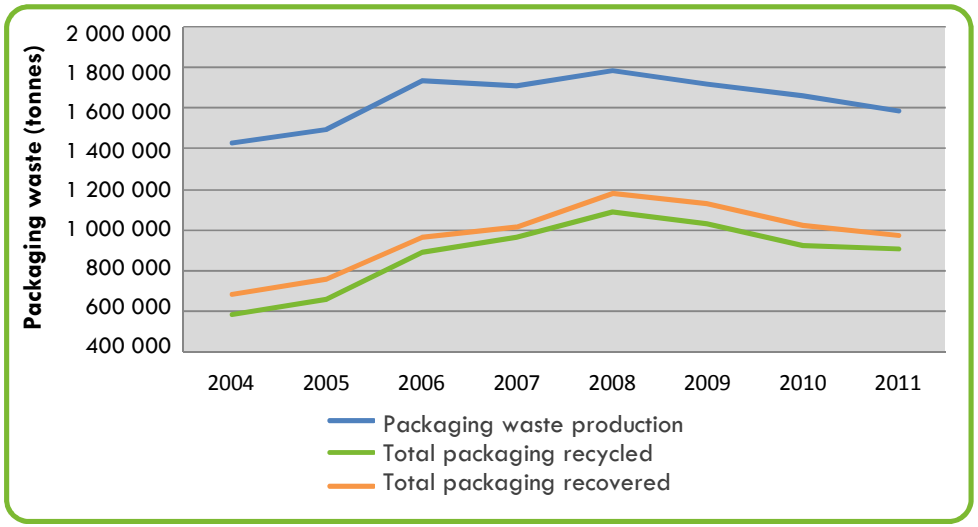
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=131

20. Packaging waste recovery

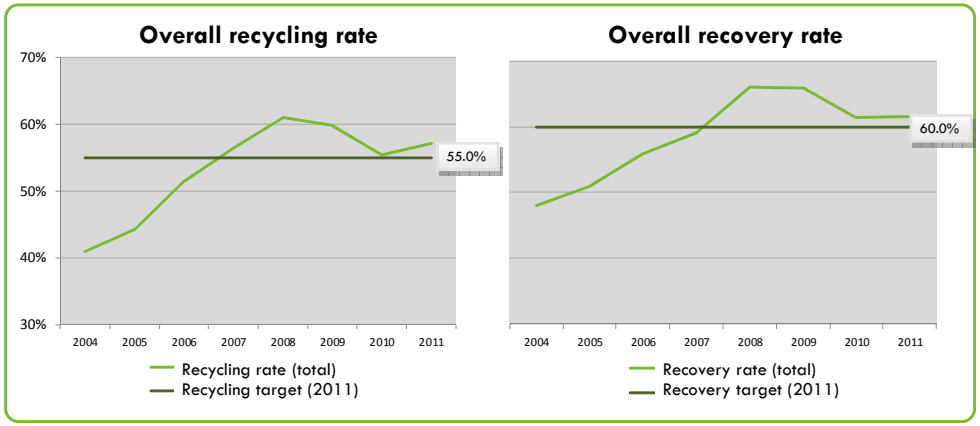
Packaging waste production relative recycled and recovered amounts



Note: 2011 data are provisional.

Source: APA, 2012

Packaging waste recycling and recovery rates



Note: 2011 data are provisional.

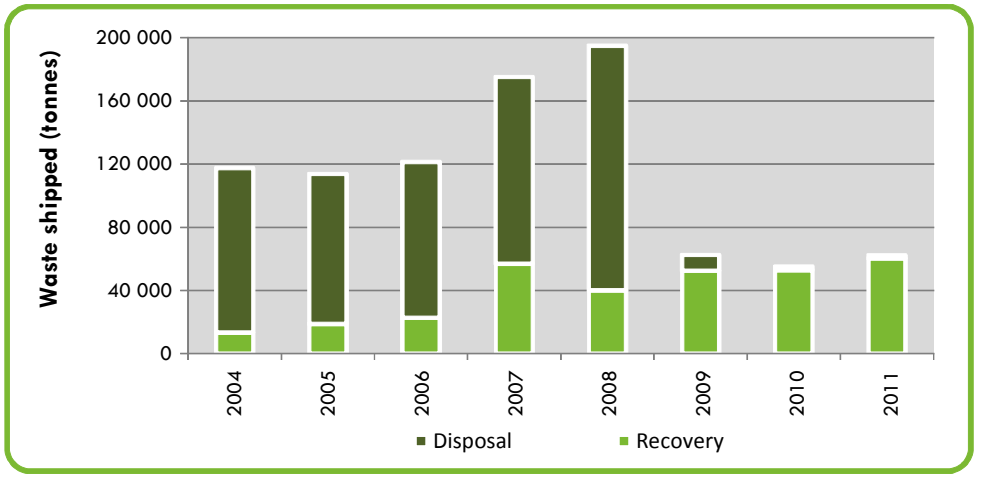
Source: APA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=44

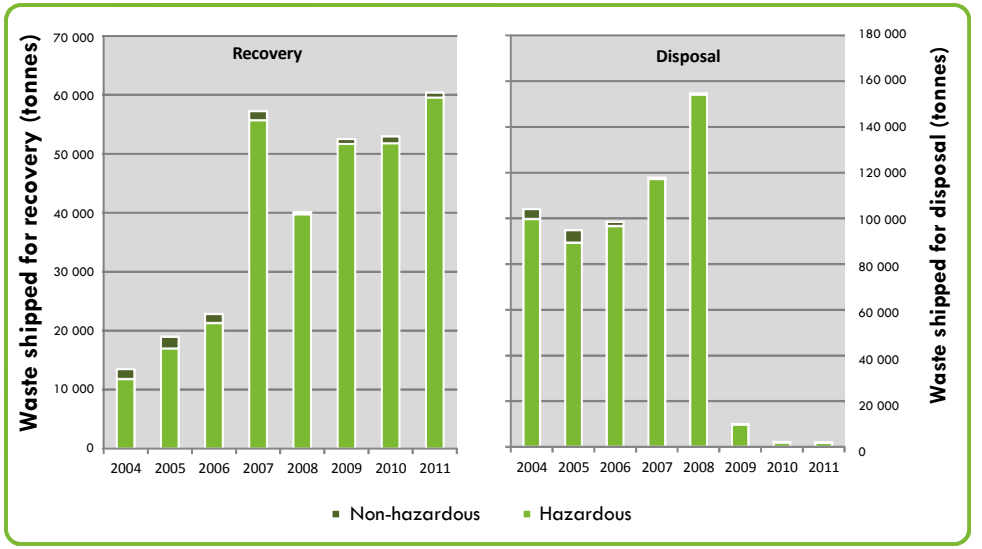
21. Transboundary movement of waste

Shipment of hazardous and non-hazardous waste



Source: APA, 2012

Hazardous and non-hazardous waste transfer from Portugal for disposal and recovery



Source: APA, 2012

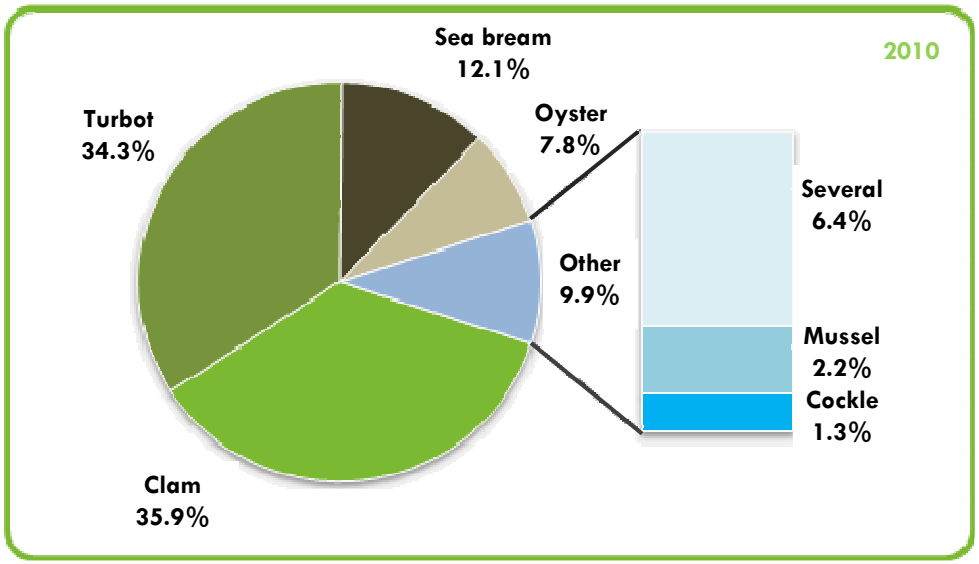
For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=137

Soil and Biodiversity

22. Aquaculture production

Composition of aquaculture production in marine and brackish waters in 2010



Source: INE, 2012; DGRM, 2012

Aquaculture production trends in Portugal by feeding regime

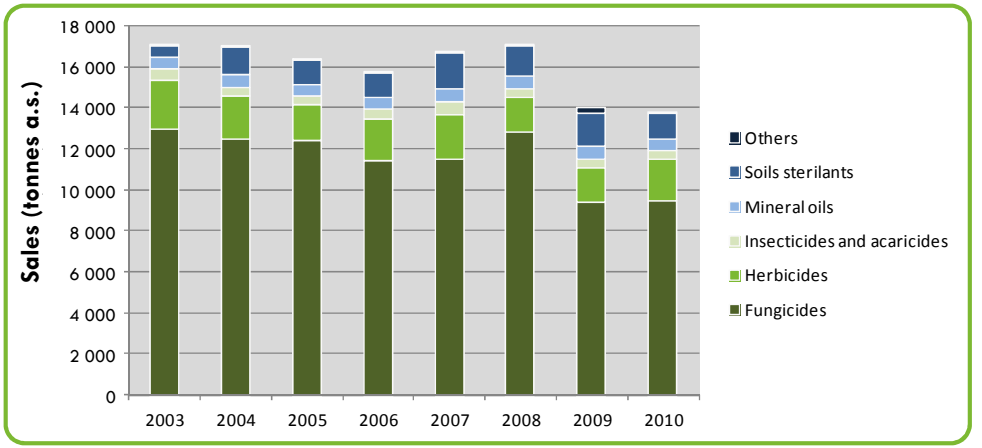
Source: INE, 2012; DGRM, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=117

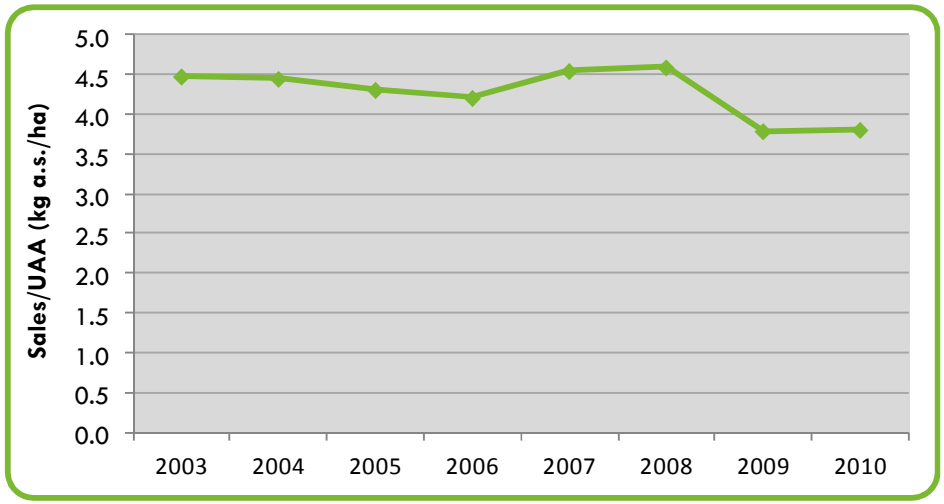
23. Sales of plant protection products

Sales of plant protection products, by function (a.s.)



Source: DGADR, 2011

Sales of plant protection products per unit of utilized agricultural area (UAA)



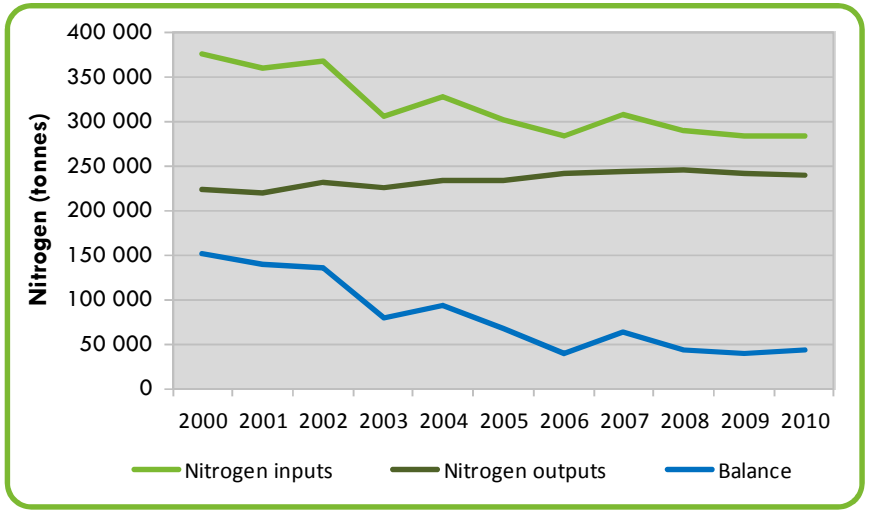
Source: DGADR, 2011; INE, 2011

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=118

24. Gross nutrient balance - nitrogen and phosphorus

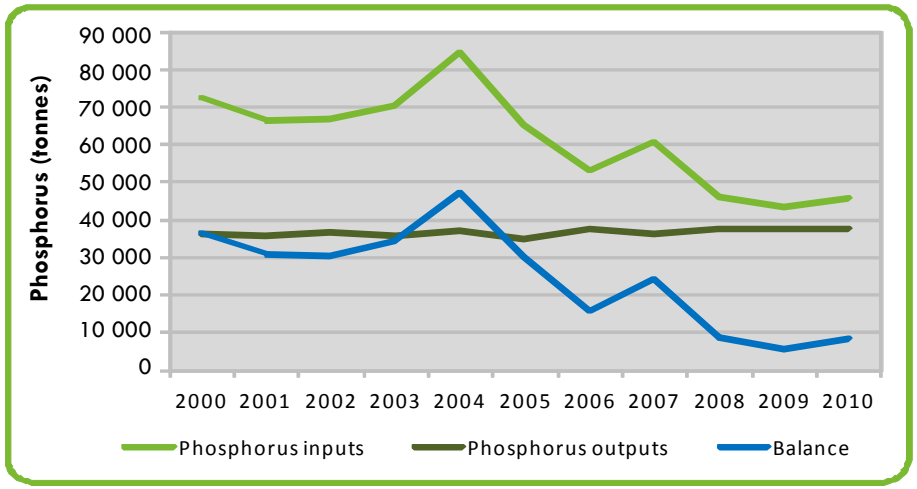
Gross nutrient balance - nitrogen



Note: 2010 data are provisional.

Source: INE, 2012; DGADR, 2012

Gross nutrient balance - phosphorus



Note: 2010 data are provisional.

Source: INE, 2012; DGADR, 2012

For more information:

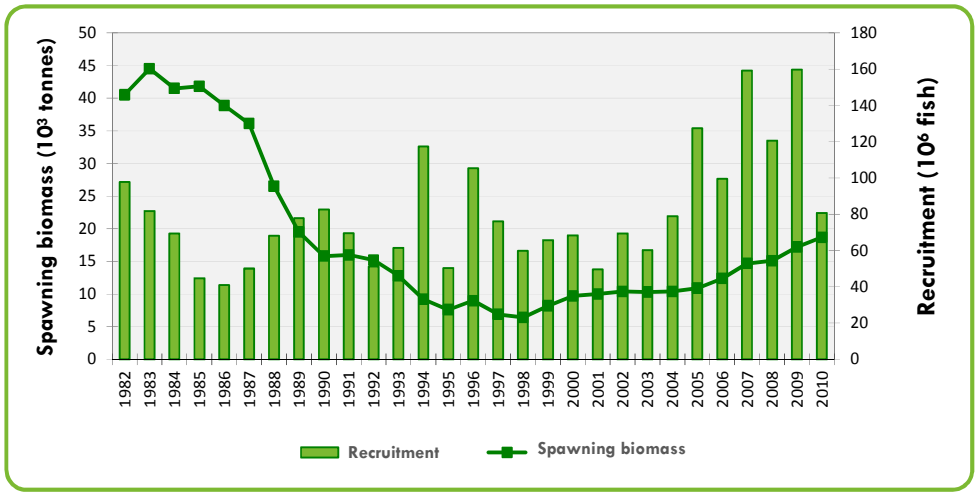
http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=132

25. Fish stocks below safe biological limits

Spawning biomass estimates and Sardine recruitment level

Source: IPMA, 2012; ICES, 2012

Spawning biomass estimates and Hake recruitment level



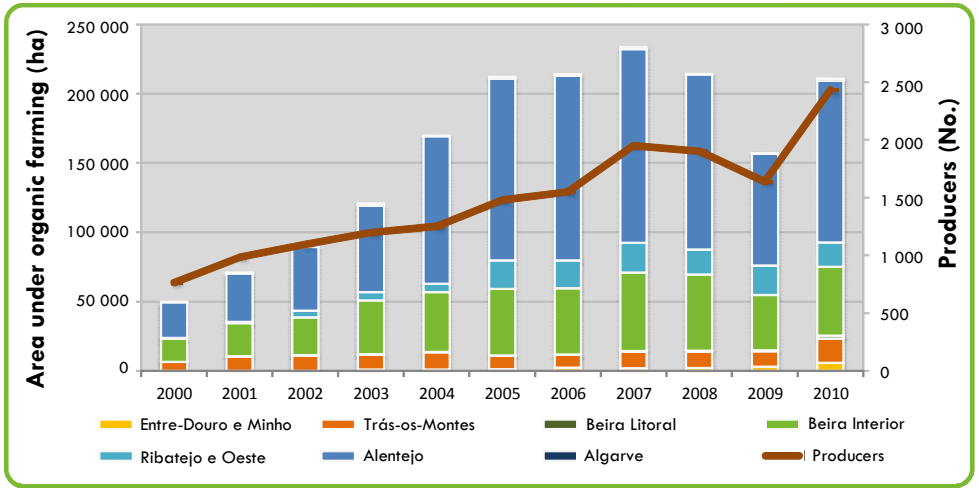
Source: IPMA, 2012; ICES,

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=7

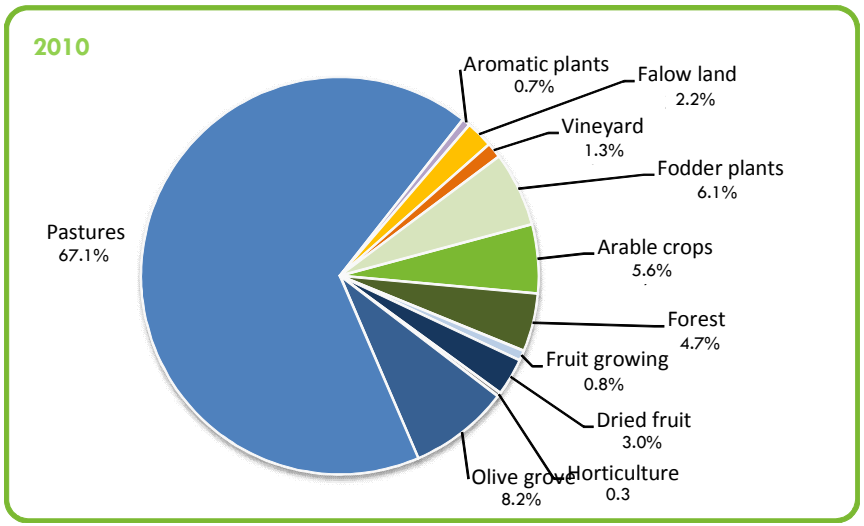
26. Area under organic farming

Evolution of the area under organic farming by agrarian regions and producers in mainland Portugal



Source: GPP, 2011

Area under organic farming in mainland Portugal by type of crop in 2010



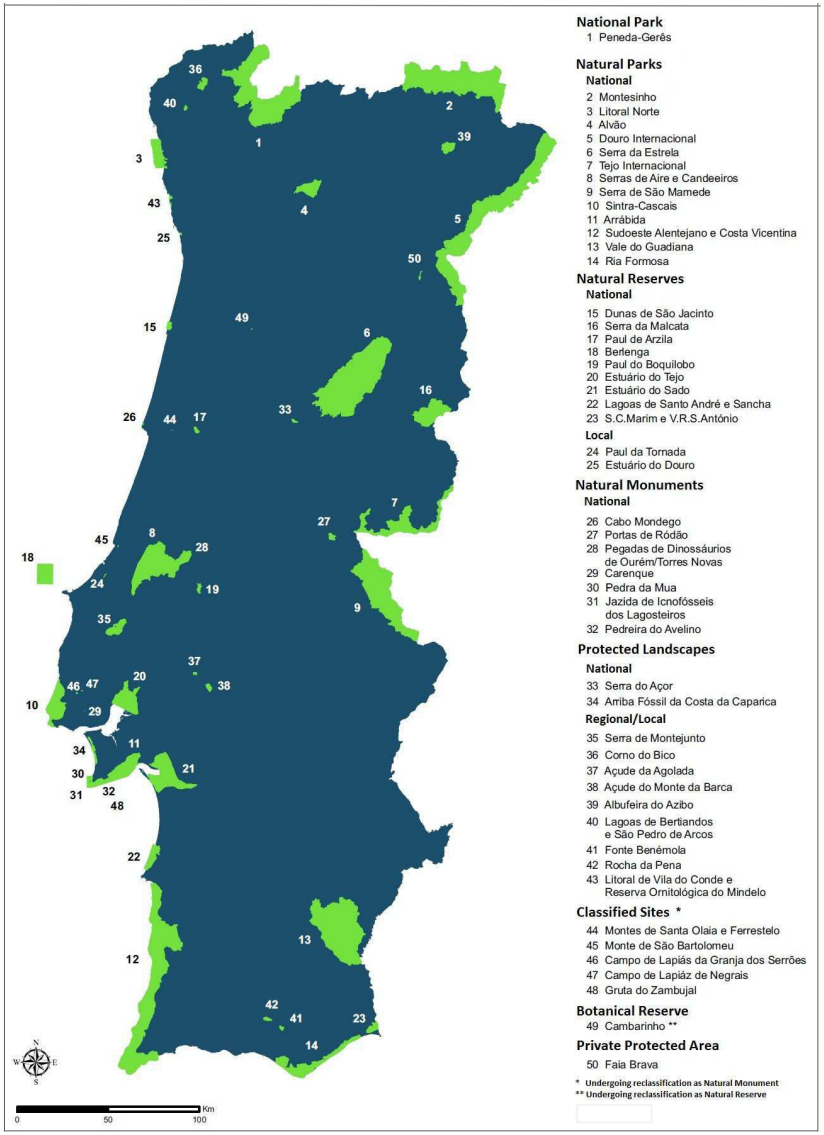
Source: GPP, 2011

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=130

27. Classified areas for nature conservation and biodiversity

National Network of Protected Areas (March 2012)



Source: ICNB, 2012

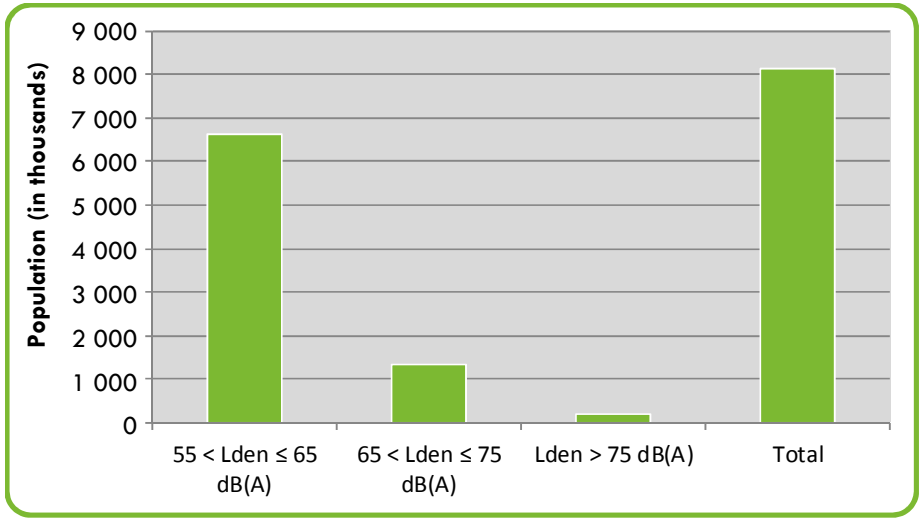
For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=63

Noise

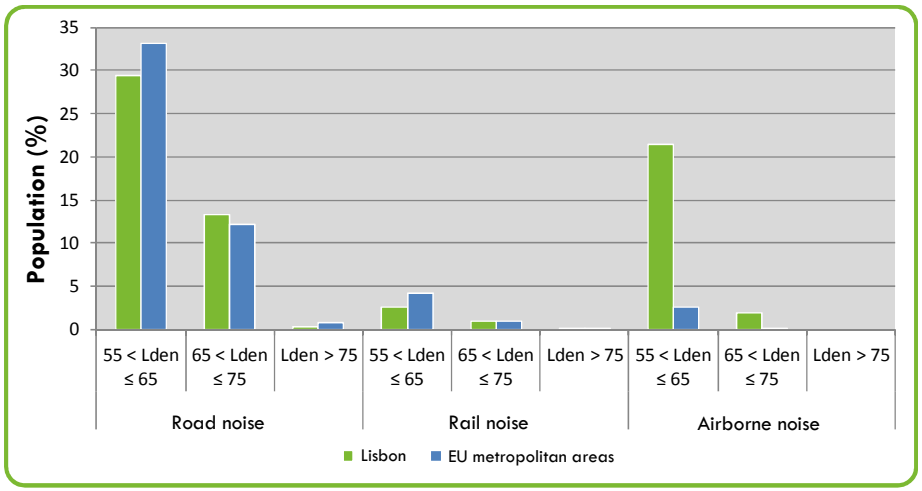
28. POPULATION EXPOSED TO ENVIRONMENTAL NOISE

Population of mainland Portugal, resident outside Lisbon, exposed to noise (Lden in dB(A)) of major transport infrastructures by road, rail and air



Source: APA, 2012

Comparison of exposure to noise from road, rail and air traffic among the population residing in Lisbon and in EU metropolitan areas



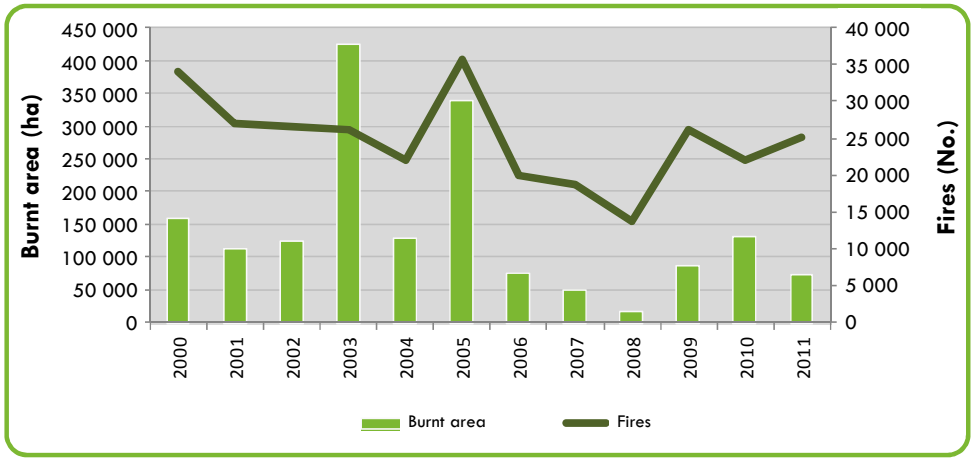
Source: EEA, 2012

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=35

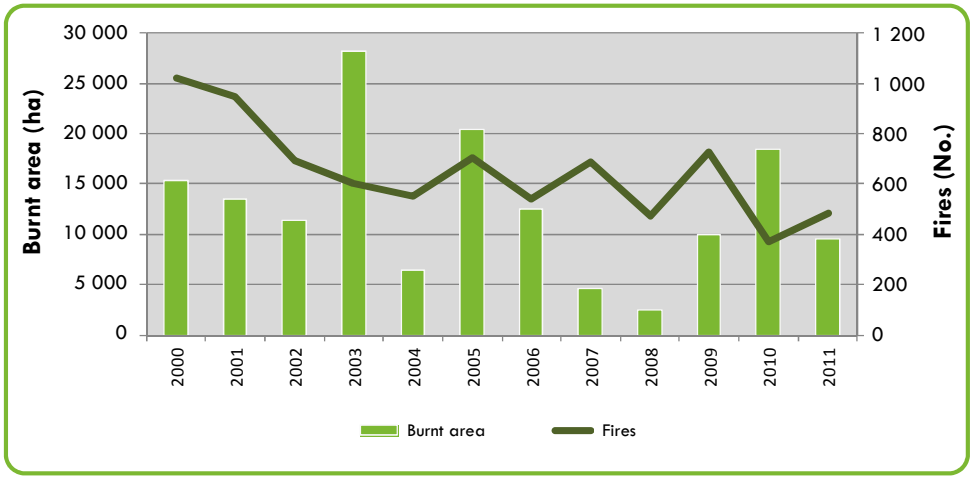
29. Forest fires

Forest fires in mainland Portugal



Source: AFN, 2011

Forest fires in the National Network of Protected Areas



Source: ICNB, 2011

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=52

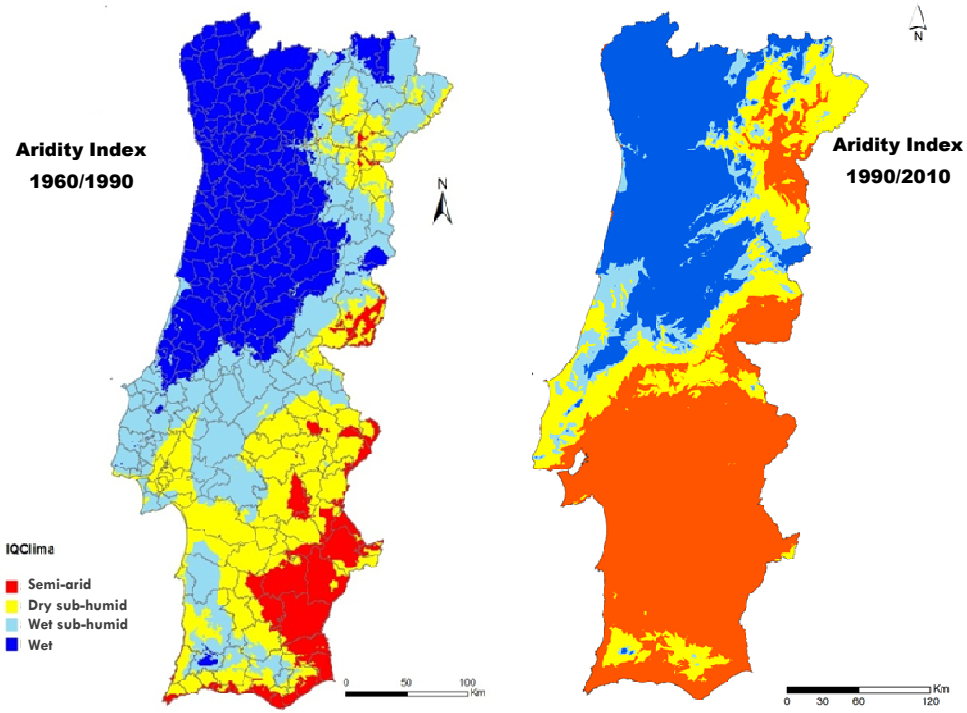
30. Desertification susceptibility

Evolution of Aridity Index in mainland Portugal

	1970/2000		1980/2010		2000/2010	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Semi-arid	2 105 820.80	23.64	2 722 932.46	30.56	3 970 308.00	44.57
Dry su-humid	2 623 519.25	29.45	2 361 923.68	26.51	1 605 375.00	18.02
Wet sub-humid	806 167.89	9.05	856 529.64	9.61	762 089.00	8.55
Wet	3 318 712.35	37.25	2 912 834.52	32.70	2 571 090.00	28.86

Source: CNCCD, based on Del Barrio *et al*, 2010; Sanjuan *et al*, 2011

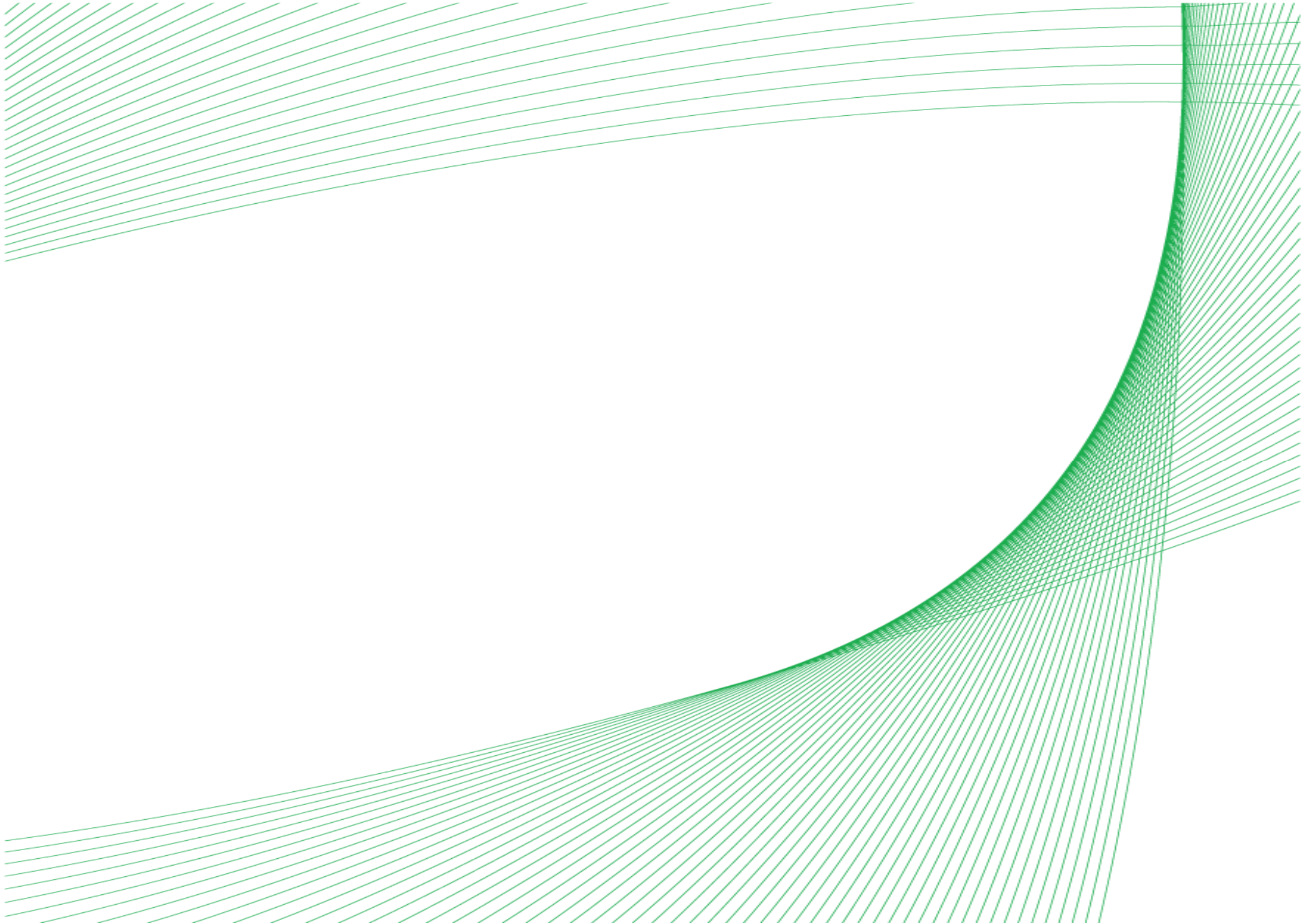
Evolution of Aridity Index in mainland Portugal in the last 50 years



Source: CNCCD, 2004; Del Barrio *et al*, 2010; Sanjuan *et al*, 2011

For more information:

http://sniamb.apambiente.pt/portalids/Indicadores/FichaIndicador.aspx?IndID=50



List of Acronyms

AFN	National Forest Authority
APA	Portuguese Environment Agency
a.s.	Active substance
CCDR	Regional Development and Co-ordinating Committee
CE	European Commission
CH_4	Methane
CLRTAP	Convention on Long-range Transboundary Air Pollution
CNCCD	National Coordinating Commission for Combating Desertification
CO_2	Carbon Dioxide
DGADR	Directorate General for Agriculture and Rural Development
DGEG	Directorate General of Energy and Geology
DGRM	Directorate General of Natural Resources, Security and Maritime Services
DMC	Domestic Material Consumption
DRA	Regional Directorate of Environment
EEA	European Environment Agency
EMAS	Environment Management and Auditing System
ERSAR	Water and Waste Services Regulation Authority
EU	European Union
EU-27	27 Member States of the European Union
Eurostat	Statistical Office of the European Union
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GPP	Office of Planning and Policy
ICES	International Council for the Exploration of the Sea
ICNB	Institute for Nature Conservation and Biodiversity
ICNF	Institute for Nature Conservation and Forestry
IH	Hydrographic Institute
IM	Institute of Meteorology
INE	National Institute of Statistics
IPAC	Portuguese Institute of Acreditation
IPMA	Portuguese Institute of the Sea and Atmosphere
ISO	International Organization for Standardization
Lden	Noise Indicator Daytime-Evening-Night
MAMAOT	Ministry of Agriculture, Sea, Environment and Spatial Planning
MW	Municipal Waste
N_2O	Nitrous Oxide
NECD	National Emissions Ceilings Directive
NH_3	Ammonia
NMVOC	Non-Methane Volatile Organic Compounds
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PEAASAR	Strategic Plan for Water Supply and Sanitation
PPP	Purchasing Power Parity
RES	Renewable Energy Sources
SO_2	Sulphur Dioxide
SPQ	Portuguese Quality System
toe	Tonne of oil equivalent
TOFP	Tropospheric Ozone Forming Potential
UAA	Utilized Agricultural Area

Contributions to this report were given by the following institutions:

DGAV – Directorate General of Food and Veterinary (MAMAOT);

DGEG – Directorate General of Energy and Geology (MEE);

DGRM – Directorate General of Natural Resources, Security and Maritime Services (MAMAOT);

ERSAR – Water and Waste Services Regulation Authority (MAMAOT);

GPP – Office of Planning and Policy (MAMAOT);

ICNF – Institute for Nature Conservation and Forestry (MAMAOT);

IH – Hydrographic Institute (MDN);

INE – National Institute of Statistics (PCM);

IPAC – Portuguese Institute of Acreditation (MEE);

IPMA – Portuguese Institute of the Sea and Atmosphere (MAMAOT).