

World Environment Day is celebrated every year on June 5 and through it the United Nations aims at promoting awareness of the environment and its protection.

World Environment Day: 2018

Each year, the United Nations chooses a different theme to mark the Day. The chosen theme focuses people's attention on a critical environmental issue. This year's theme is "Beat plastic pollution. If you can't reuse it, refuse it."

This news release gives an overview on subject matters affecting the local environment, namely, waste generation, recycling of plastic waste, built-up areas, and bathing water quality.

Main points:

- Total non-mineral waste generation in Malta in 2016 increased by 31.8 per cent (Chart 1);
- In 2016, recycled plastic waste amounted to 7,526 tonnes, equivalent to 17.1 kg per capita (Table 1);
- Developed land rose from 67.7 km² (21.5 per cent) in 1990 to 103.8 km² (32.9 per cent) in 2015 (Table 3);
- Of the 87 bathing sites that were tested in 2017, 98.9 per cent were certified to have excellent water quality (Table 6).

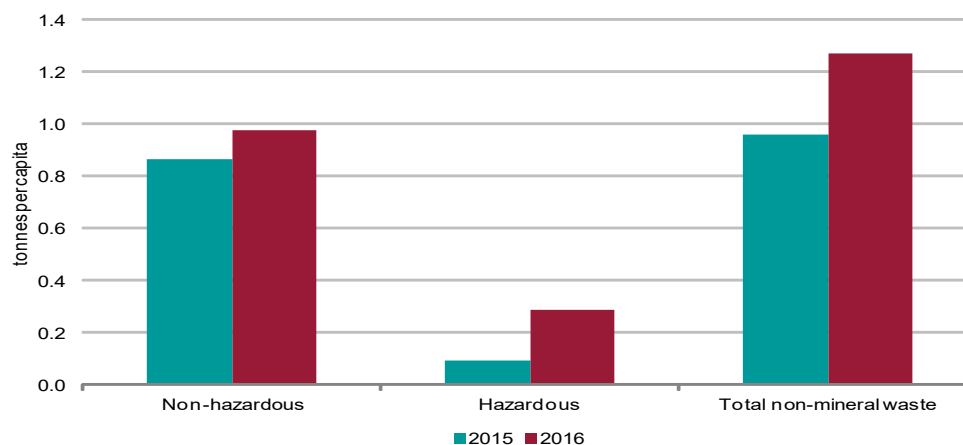
Waste

Waste is made up of objects/substances that the possessor "discards or intends or is required to discard" (Directive 2008/98/EC Article 3(1)). A country's volume of waste generation is a sign of its production and consumption habits.

Non-mineral waste

In 2016 Malta's total generation of non-mineral waste increased by 31.8 per cent over 2015, reaching a total of 1.3 tonnes per capita. There was a threefold increase in hazardous waste over 2015, resulting from the disposal of oil drilling vessels. On the other hand, non-hazardous waste increased by 13.2 per cent and amounted to almost one tonne per person (Chart 1).

Chart 1. Generation of waste (dry weight) excluding major mineral waste



Plastic waste

Total generation of plastic waste in 2016 – excluding plastic that was disposed of together with other materials – totalled 8,714 tonnes – an increase of 108.2 per cent over 2015 (Table 1). From the total amount of plastic waste treated 99.5 per cent was recycled, the rest landfilled.

Table 1. Generation and treatment of plastic waste

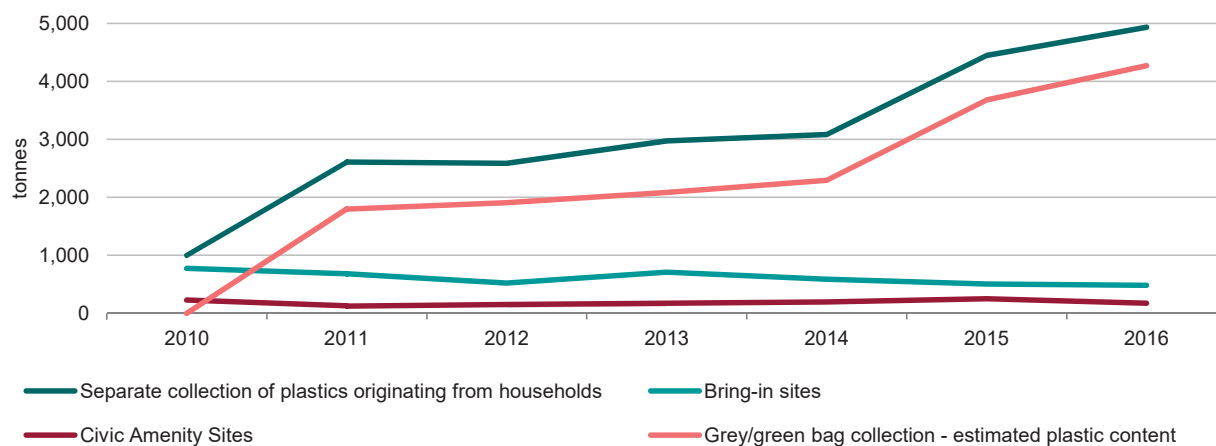
	2010	2011	2012	2013	2014	2015	2016
							tonnes
Generation of plastic waste	3,519.6	4,862.8	4,359.1	4,933.4	5,660.4	4,185.5	8,714.3
Final treatment of plastic waste	3,957.7	5,216.1	5,963.6	4,677.3	5,665.8	4,890.9	7,914.6
<i>of which:</i>							
Landfilled	66.9	130.6	54.9	28.5	37.3	21.7	38.6
Incinerated (Energy Recovery)	0.0	0.0	0.0	21.0	0.0	0.0	0.0
Recycled	3,890.8	5,085.5	5,908.7	4,627.7	5,628.5	4,869.3	7,876.0

Sources: Environment and Resources Authority; WasteServ Malta Limited; National Statistics Office.

See Methodological note 1.

Separate collection of plastics originating from households has been rising steadily from one thousand tonnes in 2010 and reaching 4,934 tonnes in 2016. The most popular method for plastic waste separation was the grey/green bags, which in 2016 had an estimated plastic content of 4,272 tonnes – an increase of 16.0 per cent over 2015 and 137.3 per cent over 2011 (Chart 2).

Chart 2. Separate collection of plastics originating from households



Mineral waste

Generation of mineral waste is largely dependent on the economic trend of both the construction industry and infrastructural works that may not be directly linked to economic growth. A total of three tonnes per capita of mineral waste was produced in 2016. Most of it, 3 tonnes per capita, was non-hazardous waste, while less than 0.01 tonnes per capita was hazardous mineral waste consisting primarily of asbestos and waste blasting material (Table 2).

Table 2. Generation of mineral waste

	tonnes per capita											
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total, non-hazardous mineral wastes	5.79	6.15	5.75	4.06	1.24	2.32	1.85	2.54	3.40	2.86	3.12	3.00
Total, hazardous mineral wastes	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Total, mineral wastes	5.80	6.16	5.76	4.07	1.25	2.32	1.85	2.54	3.40	2.87	3.13	3.00

Source: National Statistics Office.

Figures may not add up due to rounding.

Developed land

Data from the Planning Authority shows that land development has been on a steady increase since 1990 up until 2015 when the total area affected by development covered a total of 103.8km² or 32.9 per cent of land area (Chart 3). There were 59.3km² of developed land within development zones and 40.9km² of developed land in outside development zones. Landfills and quarries covered a total of 3.6 km² (Table 3).

Chart 3. Developed land as a percentage of total land area

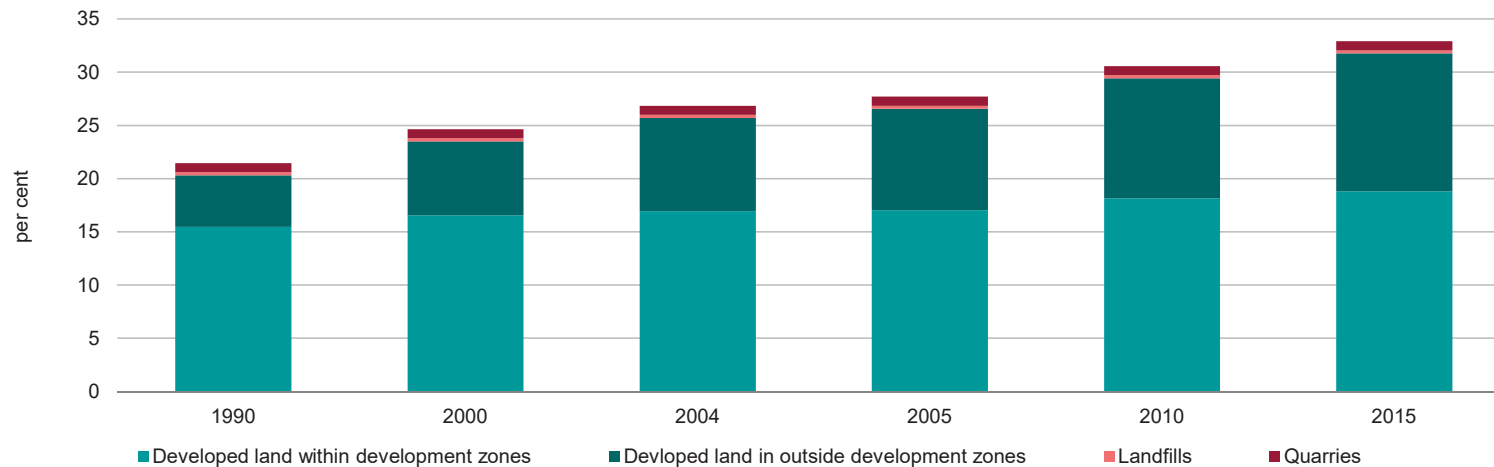


Table 3. Developed land

Year	Developed land within development zones	Developed land in outside development zones	Landfills	Quarries	Total area affected by development	
	km ²	km ²	km ²	km ²	km ²	%
1990	48.8	15.3	0.9	2.7	67.7	21.5
2000	52.2	22.0	0.9	2.7	77.8	24.7
2004	53.5	27.6	0.9	2.7	84.7	26.9
2005	53.8	30.0	0.9	2.7	87.4	27.7
2010	57.3	35.6	0.9	2.7	96.4	30.6
2015	59.3	40.9	0.9	2.7	103.8	32.9

Source: Planning Authority.
See methodological note 2.

A major shortcoming of land development is the loss of biodiversity in particular areas. In view of this, Natura 2000 – a EU-wide network of nature-conservation areas – was established so as to safeguard Europe’s most valuable and threatened terrestrial and marine species and habitats. These areas are divided in two – Special Areas of Conservation, which fall under the Habitats Directive and Special Protection Areas, falling under the Birds Directive.

Special Areas of Conservation and Special Protection Areas

The number of sites making up the terrestrial Special Areas of Conservation increased from 23 in 2004 to 27 in 2016, covering 39.4 km² and 42.0 km² respectively. While in 2004 no area fell under the marine Special Areas of Conservation, in 2016 there were eight areas listed, covering 1,576.4 km².

Between 2004 and 2016, the number of sites falling under the terrestrial Special Protection Areas more than doubled, increasing from six to 13. In 2004 such areas covered a total of 7.6 km², while in 2016 the total area stood at 16.5 km². Marine Special Protection Areas were introduced in 2016 and added up to eight, protecting a total of 3,220.2 km² (Table 4).

Table 4. Coverage of protected areas

Year of submission	Special Areas of Conservation - terrestrial		Special Areas of Conservation - marine		Special Protection Areas - terrestrial		Special Protection Areas - marine	
	number of sites	area km ²	number of sites	area km ²	number of sites	area km ²	number of sites	area km ²
2004	23	39.4	0	0.0	6	7.6	0	0.0
2006	27	39.7	1	8.5	13	14.3	0	0.0
2008	27	41.1	1	8.5	13	16.3	0	0.0
2011	27	42.0	5	190.8	13	16.5	0	0.0
2016	27	42.0	8	1,576.4	13	16.5	8	3,220.2

Source: Environment and Resources Authority.

Note: Certain SACs and SPAs overlap.

Water

The production of public water supply in Malta depends on abstraction of groundwater and desalination of seawater. From 2005 to 2017, an average of 44.0 per cent of the public water supply originated from groundwater whereas the rest came from desalination processes. Provisional figures for 2017 indicate that in the mentioned year, water abstraction increased by 1.2 per cent over 2016, reaching 70.63 cubic metres per person. During the same period, both mains leakage and consumption by end users increased marginally by 2.9 and 1.0 per cent respectively (Table 5). Data for the past 13 years shows that, as a result of the water leakage control programme implemented by the Water Services Corporation, total abstraction of water per capita decreased while consumption by end users increased slightly (Chart 4).

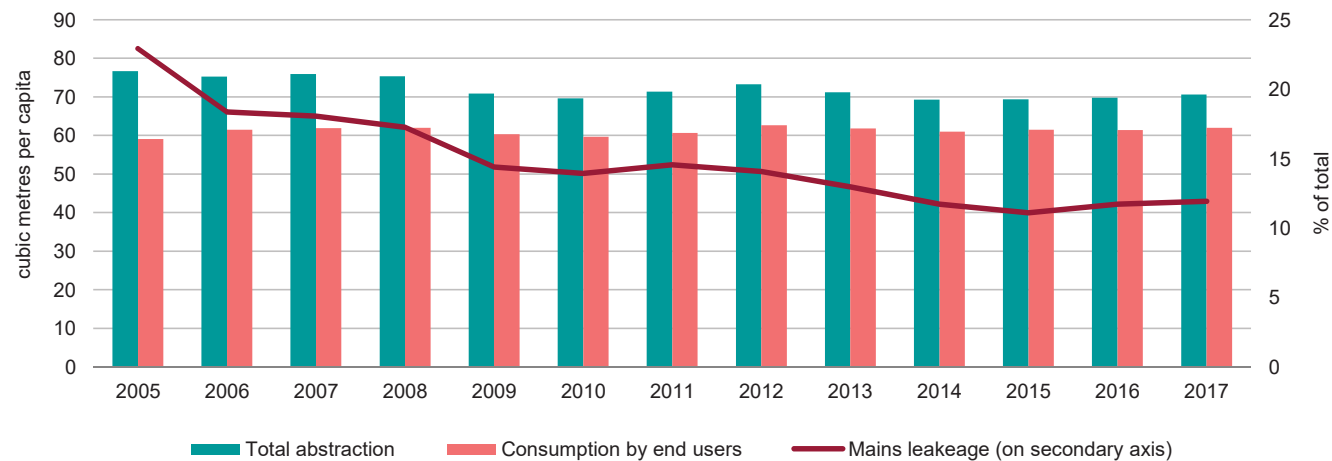
Table 5. Public water supply - water abstraction, mains leakage and consumption by end users per capita

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 ^P
	cubic metres per capita												
Total abstraction	76.65	75.26	75.93	75.31	70.84	69.62	71.33	73.24	71.21	69.30	69.36	69.79	70.63 ^P
<i>of which:</i>													
Groundwater	34.55	32.20	34.22	34.25	30.62	30.81	31.28	31.48	32.11	31.76	29.84	29.34	30.51 ^P
Desalinated water	42.10	43.07	41.70	41.06	40.22	38.82	40.05	41.77	39.10	37.55	39.53	40.45	40.12 ^P
Mains leakage	17.56	13.82	13.71	12.99	10.19	9.70	10.37	10.30	9.23	8.12	7.70	8.18	8.42 ^P
Consumption by end users	59.09	61.44	61.85	61.99	60.31	59.61	60.64	62.66	61.76	60.95	61.48	61.38	61.97 ^P

Source: Water Services Corporation; National Statistics Office.

^P Provisional

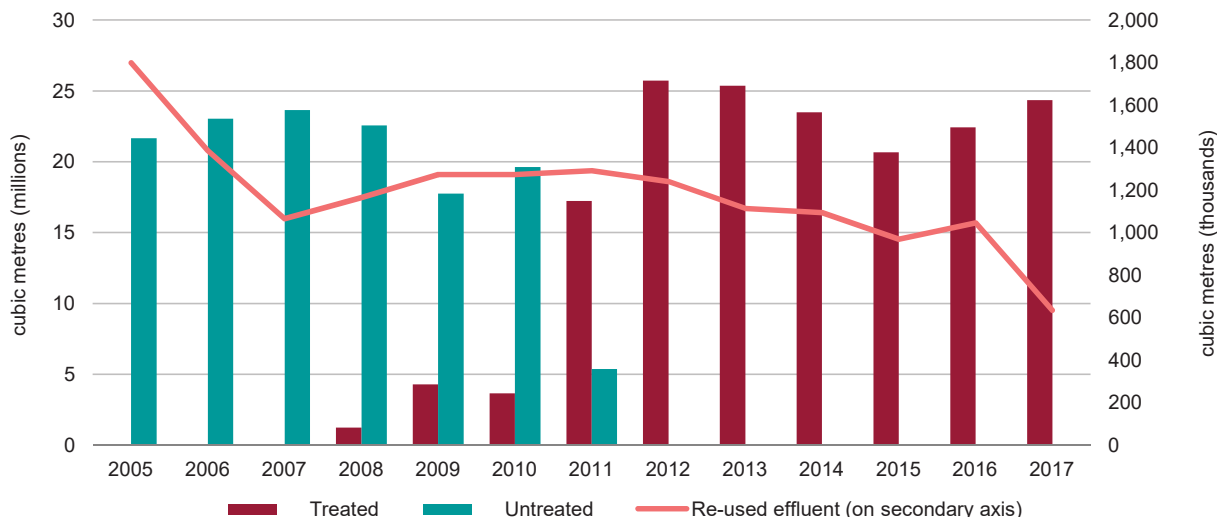
Chart 4. Public water abstraction, leakage and consumption



Urban wastewater

In 2017, almost 25 million cubic metres of urban wastewater were generated, an increase of 6.4 per cent over 2016. Of this volume, 634,342 cubic metres (2.5 per cent) underwent treatment for irrigation purposes. The largest part of the wastewater generated (97.5 per cent) was treated for pollution removal and discharged into the sea. Untreated wastewater discharge into the sea ceased in 2011 when the South Malta Sewage Treatment Plant started operating (Chart 5).

Chart 5. Wastewater - generation, re-use and discharge



Treatment of urban wastewater before it is discharged into the sea is important because, similar to wastewater originating from farms and industrial sources, it directly affects bathing water quality.

Bathing water quality

All EU Member States, together with Albania and Switzerland, monitor their bathing sites according to the provisions of the EU's revised Bathing Water Directive. Bathing sites are tested for faecal contamination which, if present at bathing sites, poses a risk to human health. After testing, waters are classified as having 'poor', 'sufficient', 'good' and 'excellent' quality with 'sufficient' being the minimum quality threshold. When waters are declared to be of 'poor' quality, Member States are required to take management measures, such as prohibiting bathing at the affected site, as well as taking corrective measures to restore the quality of the water.

Bathing water quality in Malta is tested at 87 coastal sites by the Environmental Health Directorate. In 2017, 98.9 per cent of the tested sites were certified to have 'excellent quality' bathing water and 1.1 per cent were classified as having 'good quality' of bathing water (Table 6).

Table 6. Percentage distributions of Bathing Water quality sites (Directive 2006/7/EC)

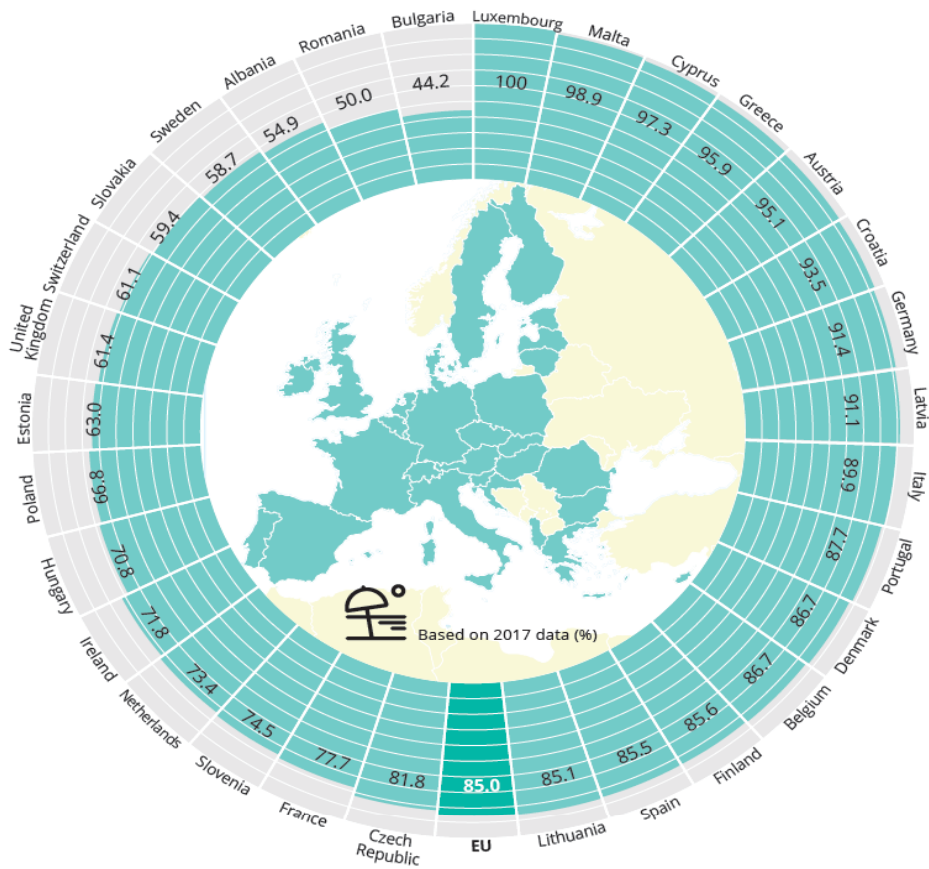
per cent

Year	Excellent quality	Good quality	Sufficient quality	Poor quality
2009	93.10	4.60	2.30	0.00
2010	95.40	3.45	1.15	0.00
2011	97.70	1.15	1.15	0.00
2012	96.55	3.45	0.00	0.00
2013	98.85	1.15	0.00	0.00
2014	100.00	0.00	0.00	0.00
2015	97.70	2.30	0.00	0.00
2016	97.70	2.30	0.00	0.00
2017	98.90	1.10	0.00	0.00

Source: Environmental Health Directorate

The European Environment Agency early last week published its annual European bathing water quality report for 2017, placing Malta's bathing waters second among bathing sites across Europe (Chart 6).

Chart 6. Bathing water quality across Europe



Source: European Environment Agency

Methodological notes

1. Waste

Hazardous waste is waste that may pose an elevated risk to human health and to the environment if not managed and disposed of safely.

Major mineral wastes comprise mineral wastes from construction and demolition, excavations, soils and dredging of port areas or waterways.

In Table 1, generation of plastic waste covers households and all economic sectors. Generation of plastic waste does not include plastic that is disposed in a mixed state with other materials such as in the black bag and the grey/green bag that are collected from municipalities.

Final treatment of plastic waste refers to the input of waste into the final treatment process. In the case of recycling, waste would have already undergone a sorting process where mixed waste is separated by material and rejects are removed. The separation of mixed waste by material in sorting plants increases the amount of plastic that is sent for recycling. Consequently, for certain years the amount of plastic going to final treatment exceeds the generation.

The separate collection of plastics originating from households is not directly comparable to the generation of plastic waste as in waste generation statistics amounts recorded under grey/green bag collection are classified under Mixed and undifferentiated materials.

2. Developed land

Pre-2006 Within Scheme Area figure includes: Pre-2006 Development Zone, Industrial Areas, Urban Conservation Areas and excludes Mtarfa.

Post-2006 Within Scheme Area figure includes: Post-2006 Development Zone, Industrial Areas, Urban Conservation Areas and includes Mtarfa.

For the area figures representing the permits the whole parcel plotting has been taken into consideration in the calculation. One must keep in mind that although all the parcel area has been considered, the resulting built-up area is generally less in permits lying outside Scheme areas. This may result in a some area over-estimation in certain cases and thus the area figures for this indicator should be taken as indicative of the rate of development and not as the actual built-up area.

The A-routes and B-routes considered as built-up have been calculated with the assumption that they all have an average road width of 8m throughout the island (a 4m buffer on each side of the line symbolising the roads).

The permits, the development of which had occurred between 1988 (1990) and 1993 have not been included in the calculations due to the lack of this data in digital format.

The validity of a development permit is of 5 years but for this indicator each development permit is being assumed as having been built immediately following its issue.

The area figures used for the landfills and quarries have been kept constant either due to temporal changes being negligible or due to a lack of more accurate area figures.

The area figures calculated for 2010 and 2015 have been adjusted to include the changes in the Within Scheme Areas that have occurred in 2006 following the Rationalisation exercise including changes in the UCA boundaries post 2006 as well as the inclusion of Mtarfa as part of the schemed area. This means that when comparing area figures and percentages one must keep in mind the changes in the extent of the "schemed" areas post 2006.

3. Special Areas of Conservation and Special Protection Areas

Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. It stretches across all 28 EU countries, both on land and at sea. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive.

Once relevant conservation measures are applied by the relevant Member State an area is designated as a Special Area of Conservation (SAC) listed under the Habitats Directive.

When a site is known to be particularly important for the conservation of wild bird species it can also be designated as a Special Protection Area (SPA) listed under the EC Birds Directive.

4. Water

Public water production, leakage, consumption

Total abstraction - Water removed from any source, either permanently or temporarily. In Malta's case, the water abstraction for the production of the public water supply originates from groundwater and seawater (for desalination).

Groundwater - Fresh water which is being held in and can usually be recovered from or via an underground geological formation.

Desalinated water - Total volume of water obtained through desalination processes. In the case of Malta the process used is reverse osmosis.

Mains leakage - Leakage from underground mains or pipes that form part of the distribution network for the public water supply.

Consumption by end users - Total abstraction minus the mains leakage and the reject from the Gozo groundwater polishing plant.

5. Urban wastewater - generation, re-use and discharge

Urban wastewater - Domestic wastewater or the mixture of domestic wastewater with industrial wastewater and/or runoff rainwater.

Urban wastewater generation - Re-used effluent plus wastewater discharge into the sea.

Re-used effluent - Water that has undergone wastewater treatment and is delivered to a user as reclaimed wastewater. In Malta, this water is used for irrigation purposes.

Treated wastewater discharge - Wastewater that is discharged into the sea after being treated for pollution removal in wastewater treatment plants.

Untreated wastewater discharge - Wastewater that is discharged directly into the sea without undergoing any form of treatment.

From 2005 to 2016 all reused effluent originated from the Sant' Antnin Sewage Treatment Plant. In 2017 the Malta North Sewage Treatment Plant started to produce reused effluent as well.

Treated wastewater discharge commenced in 2008, when the Gozo Sewage Treatment Plant started operations. In previous years, only the Sant'Antnin Sewage Treatment Plant was operational, however this plant only produced effluent for irrigation and did not generate any treated wastewater for safe disposal at sea. In 2009, the North Malta Sewage Treatment Plant became operational.

6. Bathing water quality

Bathing water quality is monitored for 23 weeks each year (3rd week of May till 3rd week of October) in different bathing areas (87 sites) in the Maltese Islands by the Environmental Health Directorate.

Faecal contamination of water poses a risk to human health, especially if it is found at bathing water sites. The major sources of pollution are sewage and water draining from farms and farmland.

7. Estimates of total population up to 2016 may be found in NSO News Release no. 22/2018. The provisional estimate for 2017 is 470,591.
8. More information relating to this news release may be accessed at:
Statistical Concepts: <http://nso.gov.mt/metadata/concepts.aspx>
9. References to this news release are to be cited appropriately.
10. A detailed news release calendar is available on
https://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx