

# Education for Sustainable Development in Malta and national water policy

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# ESD endorsed in Malta's National Curriculum Framework (2012) as a cross-curricular theme

- ▶ ESD is about learning that:
  - re-orientates education to address sustainable development;
  - respects, values and preserves past achievements;
  - values the Earth's resources and its peoples;
  - strives towards a world in which all humans have access to sufficient food and water, a healthy and productive life, basic education, and a safer and just environment;
  - assesses, cares for and restores the state of our planet;
  - develops citizens who exercise their rights and responsibilities locally, nationally and globally. (United Nations, 2004; UNESCO, 2006).

- *National Curriculum Framework 2012, p.38*



# Nurturing a Sustainable Society

## A National Strategy for Education for Sustainable Development for Malta

- ▶ Developed by a Board of Governors under the aegis of the Ministry of Education and Employment (MEDE) and the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC);
- ▶ Extensive consultation process involving targets groups bringing together a very wide span of stakeholders including:
  - government organisations and authorities;
  - environmental / development organisations;
  - opinion makers;
  - mass media and the arts;
  - education organisations;
  - influence groups (businesses, professional and other groups);
  - civil society



# Nurturing a Sustainable Society

## A National Strategy for Education for Sustainable Development for Malta

- ▶ The final document is **ready for adoption** as at the end of 2016.
- ▶ Develops the principles, implications and vision of ESD within the Maltese national context into **19 main Policy Actions**.
- ▶ In sync with **national policy** and **international developments in the field of ESD** and intended to project the way forward beyond the UN Decade on ESD post-2014.
- ▶ Technical work on the development of a **national Action Plan on ESD** are currently underway, streamlined with the remit of the national policy document.

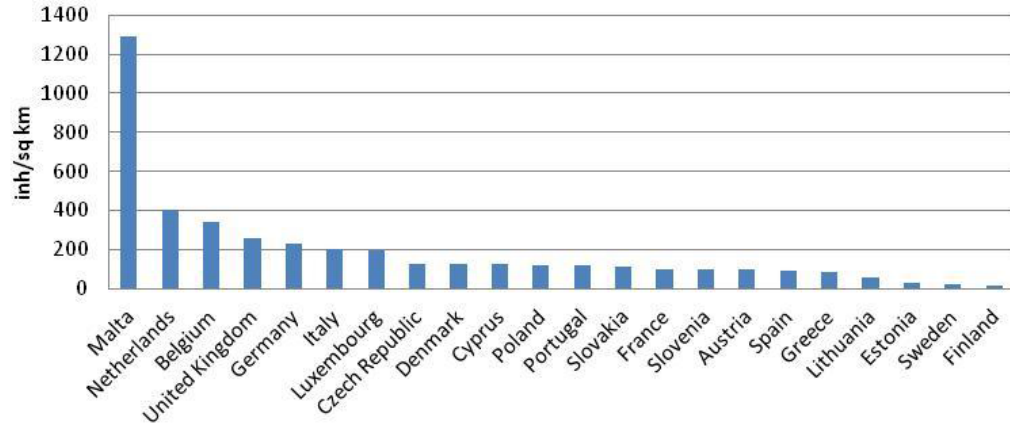
*Source: Ministry for Education and Employment (Malta)*



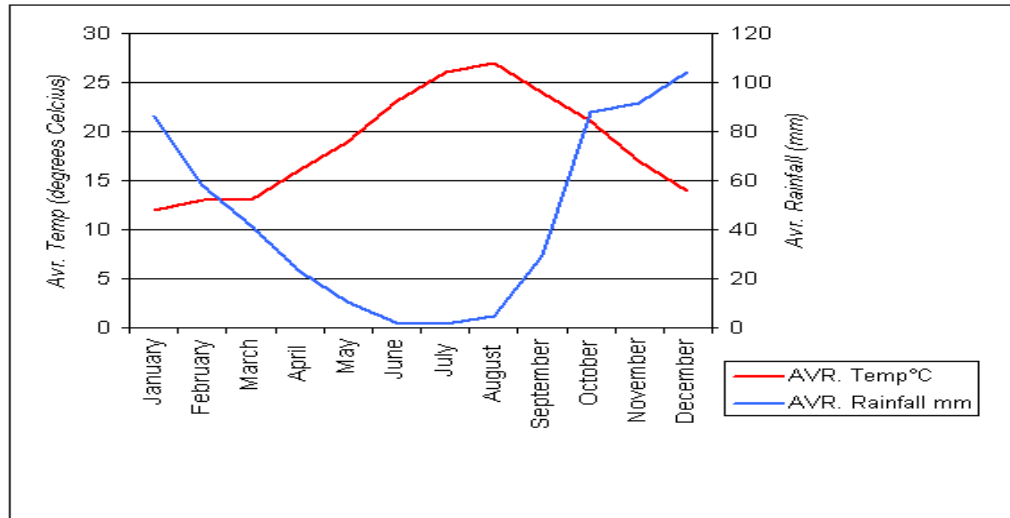
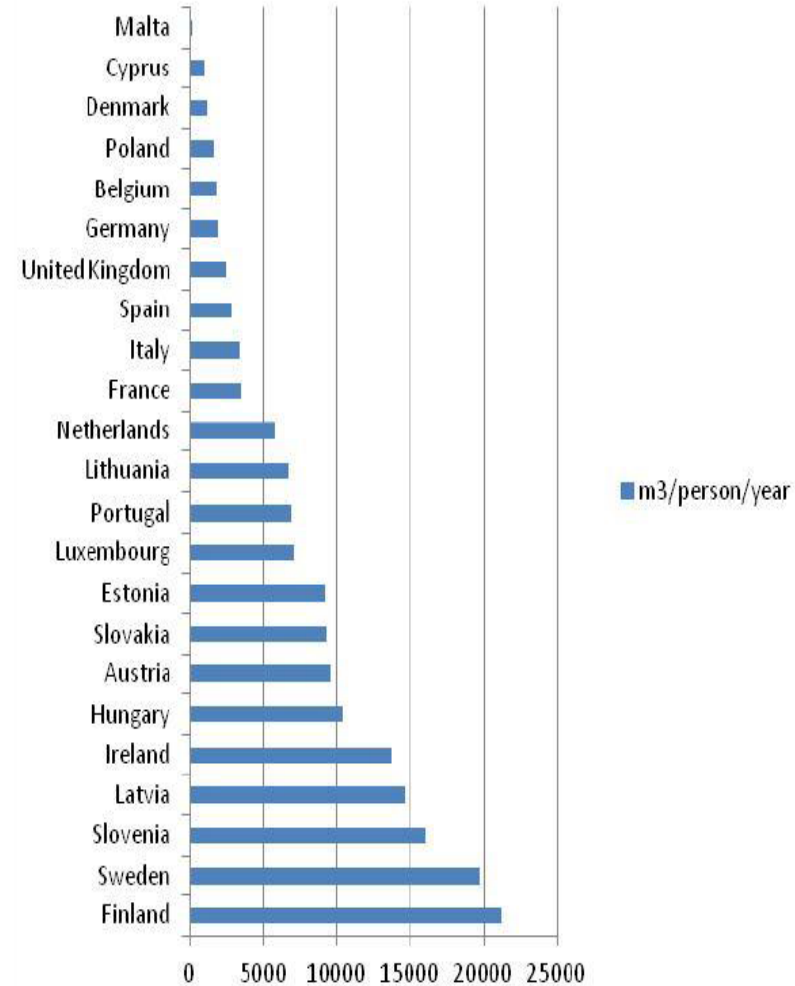
# The Maltese Islands

Sources: The 2<sup>nd</sup> Water Catchment Management Plan for the Malta Water Catchment District 2015 - 2021.  
 The thermopluvial curve for the Maltese Islands was available at:  
[http://www.emwismt.org/documentation/context/Physical%20factors\\_files/Temp-Prec%20graph.htm](http://www.emwismt.org/documentation/context/Physical%20factors_files/Temp-Prec%20graph.htm).

Population Density in EU Member States



Natural Water Availability in EU Member States



# Climate summary of the Maltese islands

Source: Galdies, C. (2011). *The Climate of Malta: statistics, trends and analysis 1951 - 2010*. National Statistics Office, Malta

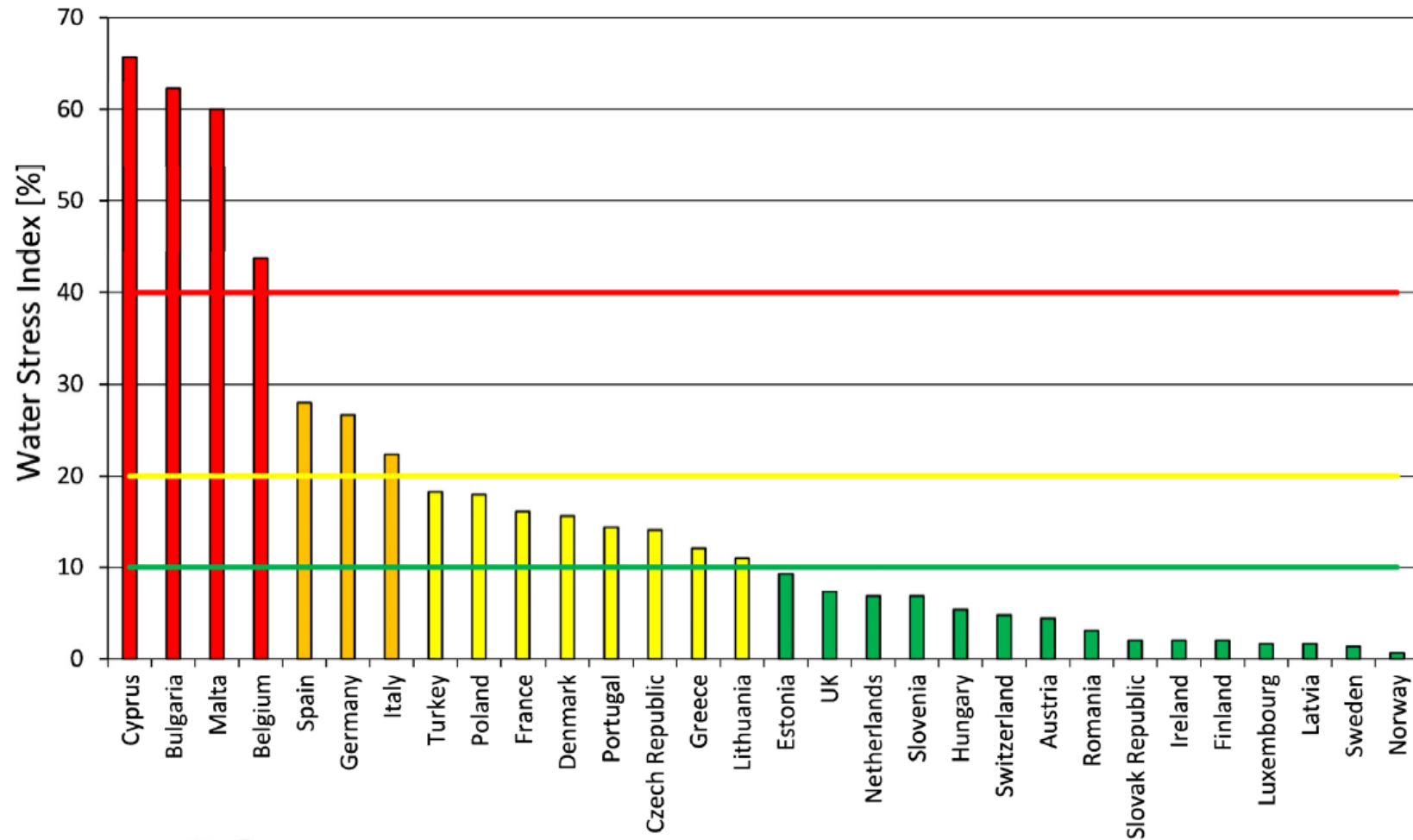
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Average temperature (°C)</b>	12.2	12.4	13.4	15.5	19.1	23.0	25.9	26.3	24.1	20.7	17.0	13.8
<b>Average maximum temperature (°C)</b>	15.2	15.5	16.7	19.1	23.3	27.5	30.7	30.7	28.0	24.2	20.1	16.7
<b>Average minimum temperature (°C)</b>	9.2	9.3	10.1	11.9	14.9	18.4	21.0	21.8	20.1	17.1	13.9	11.0
<b>Sunshine hours (hrs)</b>	159	171	224	247	300	328	365	338	260	221	185	156
<b>Sea level Pressure (hPa)</b>	1018.2	1016.6	1016.1	1014.3	1015.3	1015.8	1015.7	1015.4	1017.4	1017.6	1017.9	1017.3
<b>Rainfall (mm)</b>	89	61	41	23	7	3	0	7	40	90	80	112

Data collected by the Malta Airport MetOffice for the climate period 1961-1990



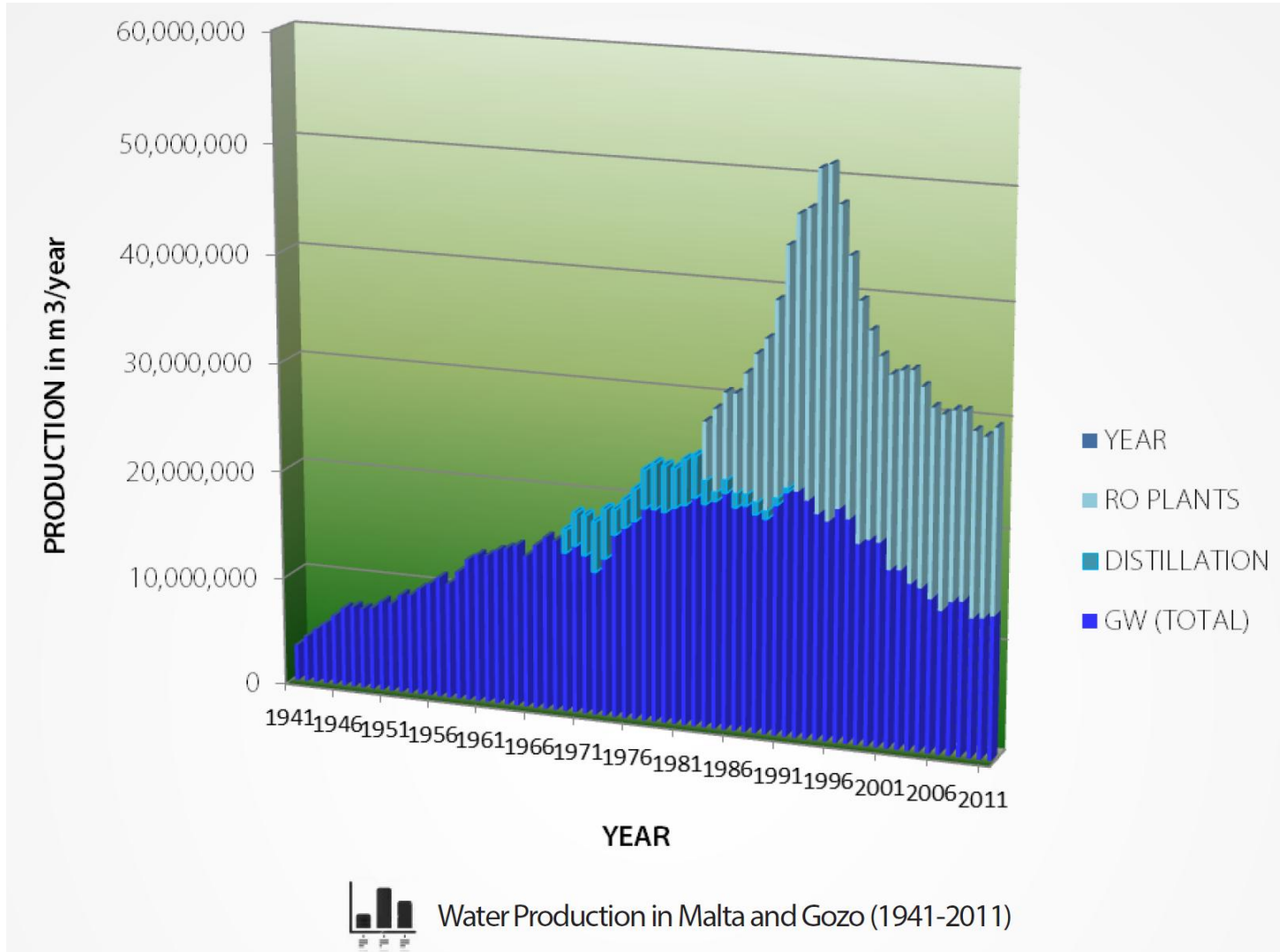
# Water Stress Index for European countries

Source: Sofroniou, A. and Bishop, S. (2014). Water Scarcity in Cyprus: A Review and Call for Integrated Policy <http://www.mdpi.com/2073-4441/6/10/2898/htm>, accessed on 10<sup>th</sup> November 2016.

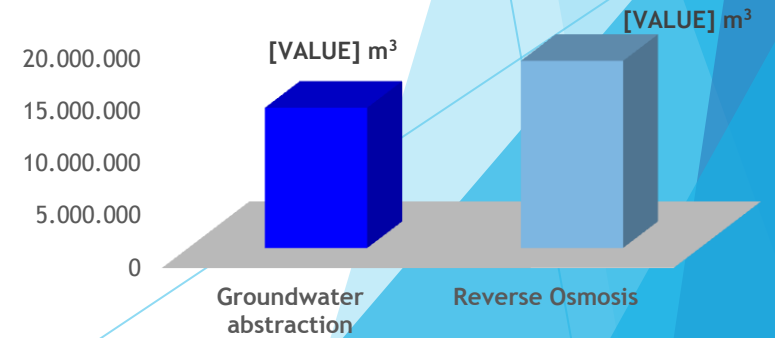


# Potable water production in Malta since 1941

Source: Water Services Corporation (Malta), Annual Report 2011



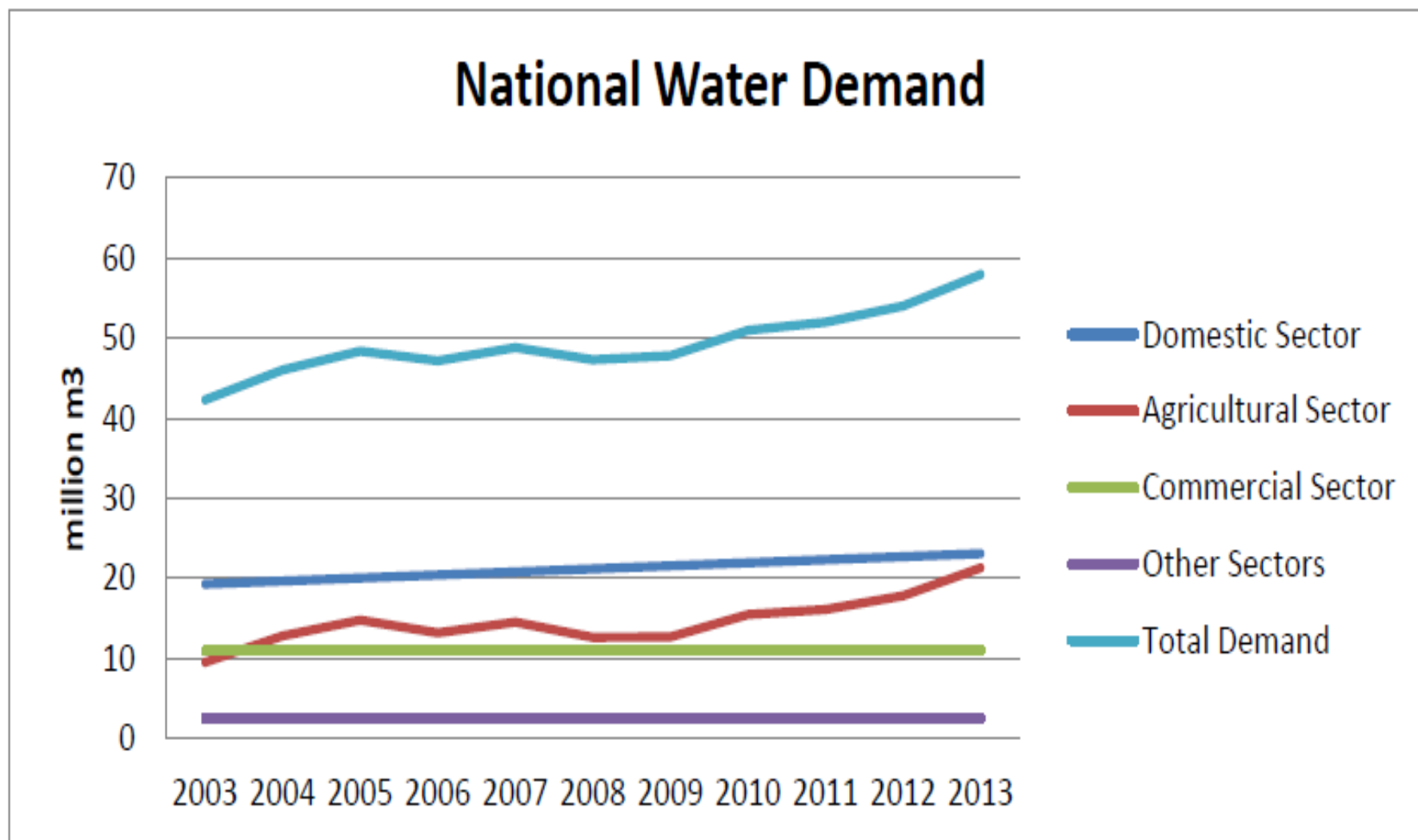
Potable water production in water in 2015 /m<sup>3</sup>





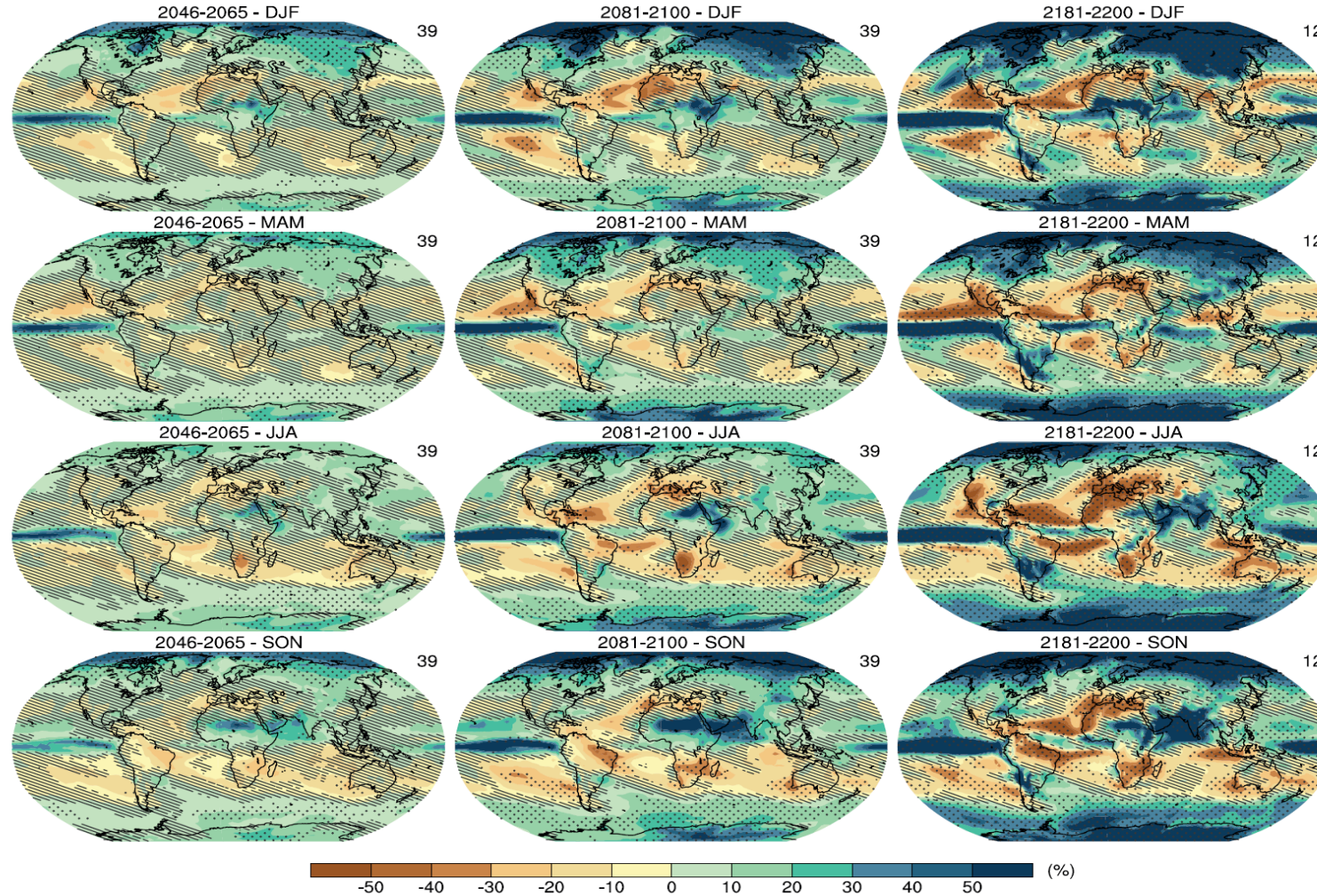
# Trends in national water demand 2003 - 2013

Source: 2<sup>nd</sup> Water Catchment Management Plan 2015 - 2021



# IPCC AR5 report projections (2013)

## Seasonal mean percentage precipitation change (RCP8.5)



**Figure 12.22** | Multi-model CMIP5 average percentage change in seasonal mean precipitation relative to the reference period 1986–2005 averaged over the periods 2045–2065, 2081–2100 and 2181–2200 under the RCP8.5 forcing scenario. Hatching indicates regions where the multi-model mean change is less than one standard deviation of internal variability. Stippling indicates regions where the multi-model mean change is greater than two standard deviations of internal variability and where at least 90% of models agree on the sign of change (see Box 12.1).



# Malta's national water management framework

- ▶ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, as amended.
- ▶ The 2<sup>nd</sup> Water Catchment Management Plan for the Malta Water Catchment District 2015 - 2021, <https://energywateragency.gov.mt/en/Pages/Water-Framework-Directive.aspx>.
- ▶ An over-arching national water policy plan that underwent a thorough stakeholder consultation process.
- ▶ Various government projects and initiatives including a successful borehole metering rate (**80%** agricultural boreholes; **97%** commercial/industrial).
- ▶ Educational initiatives including those linked to the EkoSkola (Malta), <http://www.ekoskola.org.mt/>.



# Stakeholder consultation into the national water policy

( I ) General public

( II ) Sector specific consultations in particular the agricultural sector

( III ) Public agencies with a role in water management including:

- government ministries
- Superintendent of Public Health
- Regulator for Energy and Water Services (REWS)
- The Environment and Resources Authority (ERA)
- The Planning Authority (PA)
- The Water Services Corporation (WSC)
- Buildings Regulations Office (BRO)

*Source: Energy and Projects at OPM (Malta)*



# Educational measures proposed at national level

- ▶ A long term National Water Conservation Campaign
- ▶ Specific campaign to focus on educational activities on water management in schools
- ▶ Development of demonstration projects to showcase the application of innovative technology in the local water sector
- ▶ Research and development perspective:
  - cooperation agreement with the UoM and MCAST
  - technologies for the identification and repair of water distribution losses
  - development of predictive groundwater abstraction technology
  - optimisation of water-use in the agricultural sector



## National projects

- ▶ A National Water Awareness Conservation Centre (EEA Financial Mechanism)
- ▶ National Water Conservation Campaign planned for launching in 2017
- ▶ A specific Educational Programme on Water to be coordinated by EkoSkola in Maltese schools

*Source: Energy and Projects at OPM (Malta)*



# Thank you!

