

The 1st Water Catchment Management Plan for Malta

Malta Resources Authority

Malta Environment & Planning Authority

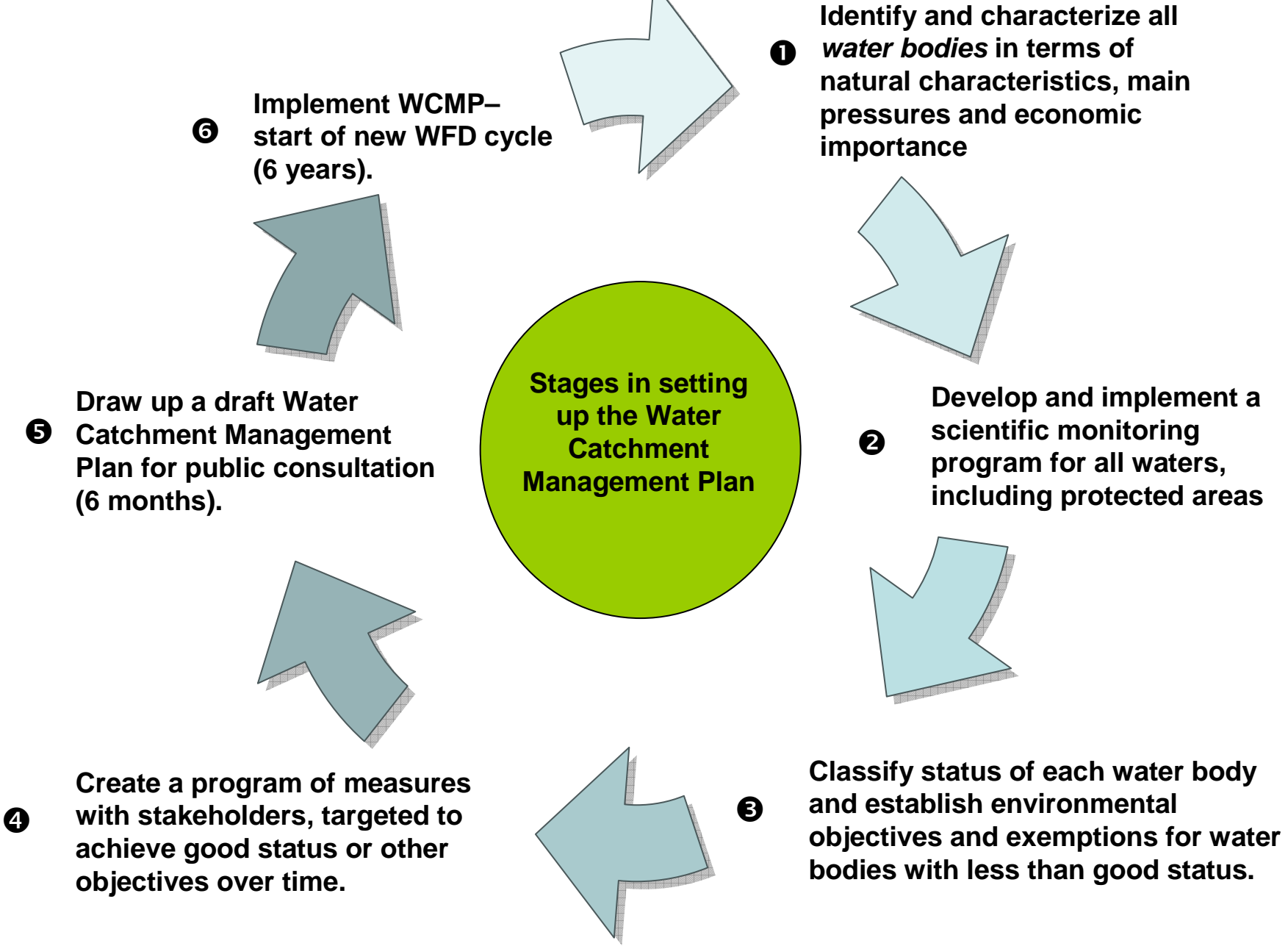
Protection of waters under the WFD

- ❑ **The WFD sets a minimum level of protection for all waters: no deterioration and good status to be achieved by 2015**
 - exemptions from good status allowed where alternatives are technically impossible, disproportionately expensive or will result in worse overall environmental impacts.
 - exemptions include less stringent objectives, extending the deadline to achieve good status and temporary deterioration.
 - More stringent protection levels in protected areas
 - For heavily modified surface water bodies a less stringent status is required (ecological potential)

- ❑ **The Water Catchment Management Plan (WCMP) is a plan which after identifying the status of the waters of a country, specifies measures to maintain or improve that status**

- ❑ **It is a key reporting obligation of the Water Framework Directive (WFD) and has to be updated every 6 years (2015 and 2021)**

Stages in setting up the Water Catchment Management Plan



WCMP Consultation process so far

Consultation is required at different stages by the Directive.

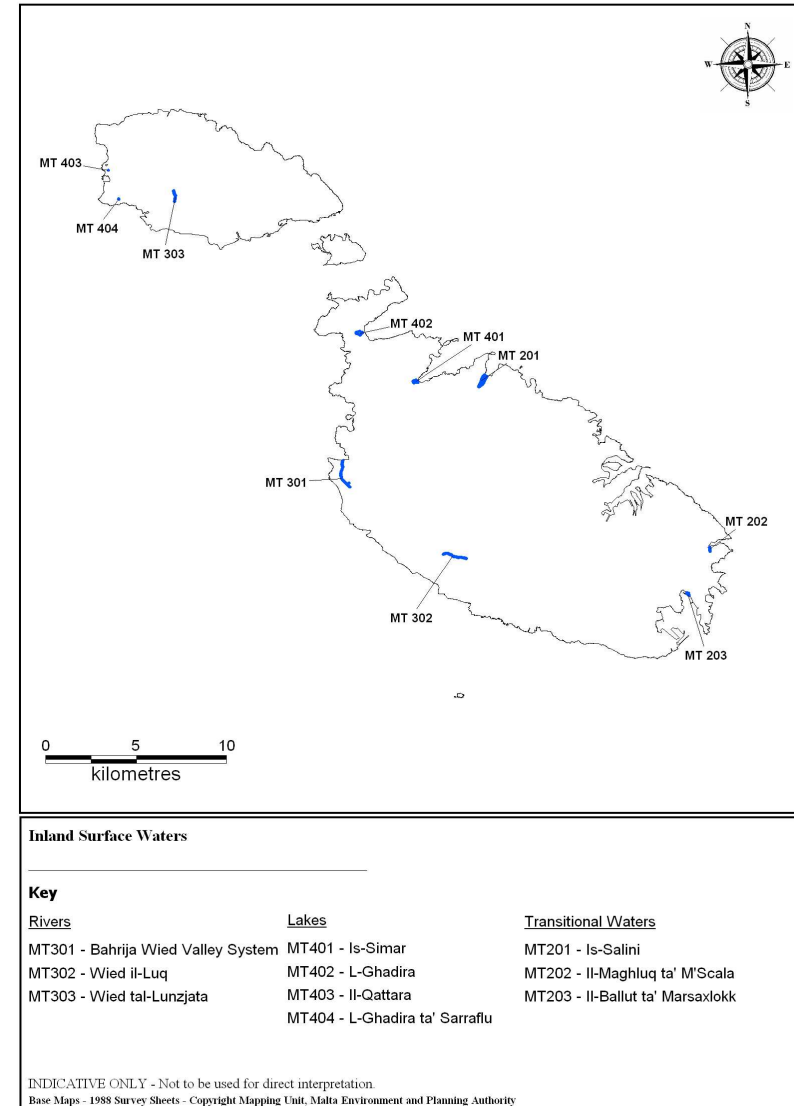
Action taken by Malta:

- ❑ Characterisation of water bodies (2005): internet
- ❑ Identification of significant water management issues (2009): internet & questionnaires
- ❑ Formulation of program of measures with stakeholders
 - MRA workshops (2007)
 - MEPA bilateral meetings and workshops (2009)
 - Miscellaneous workshops during Twinning projects (2008-2009)

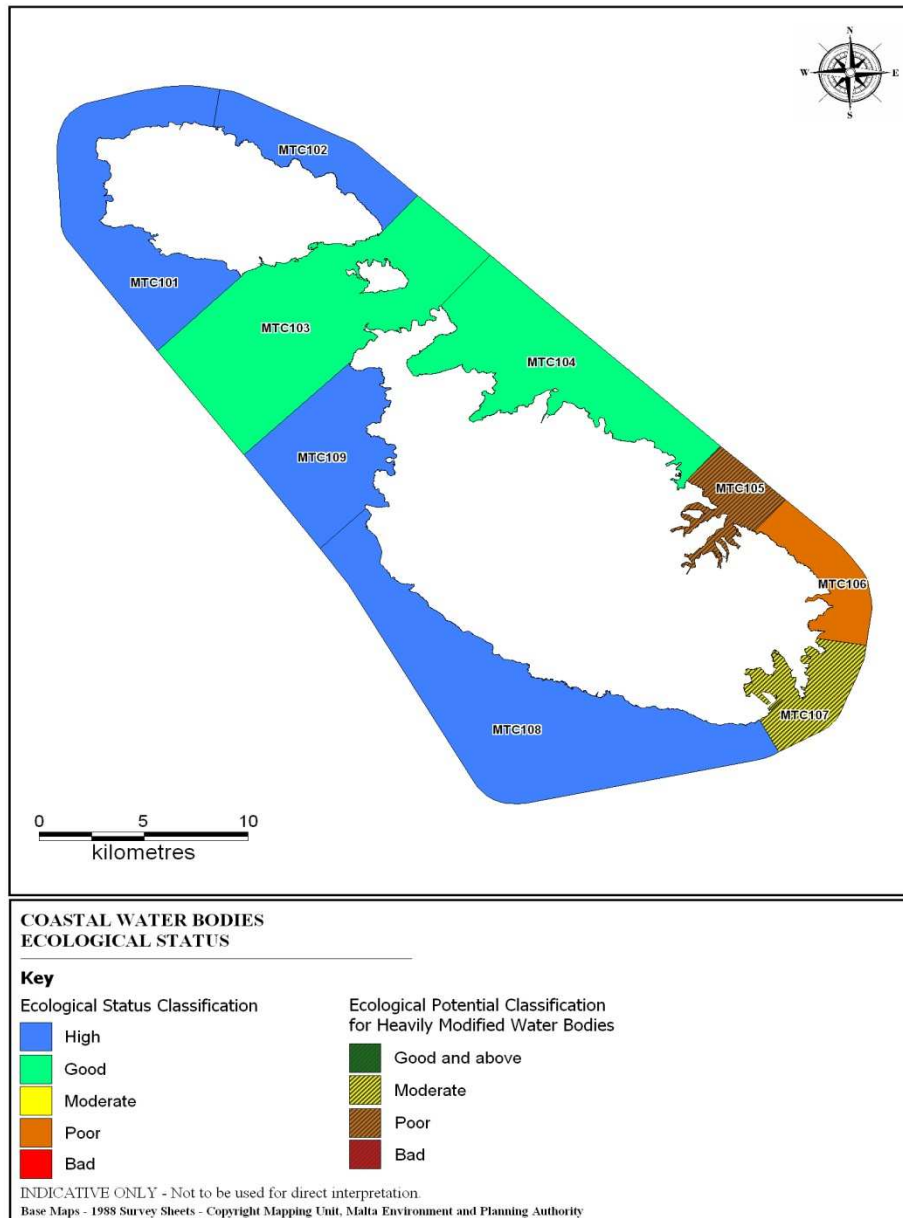
Surface Waters

2005: designations of 10 inland water bodies as rivers, lakes and transitional waters

2009: no inland water bodies designated under the WFD as the scientific process required to monitor and determine status is not practical and scientifically possible (CION differs and matter referred to ECJ)



Status of Coastal Waters



MONITORING

Monitoring of *Posidonia oceanica* in 2006 and 2007

A full-scale baseline survey and WFD monitoring program to commence in 2010 through ERDF funds

STATUS

Classification of water body status based on:

- *P. oceanica* data
- Qualitative pressure-risk analysis

Water bodies in good-high status with three exceptions

OBJECTIVES

For 3 water bodies with less than good status, exemptions requested in the form of time extensions to 2021

For Heavily Modified Water Bodies exemptions refer to good ecological potential

Program of Measures - Coastal (Basic Measures)

Management Actions/Measure	Status of implementation	Immediate result	Improvement of waters over the years
All municipal wastewater treated discharged to the sea will be treated.	Complete implementation by end of 2010 through South STP Xaghjra	Immediate and visible improvement in coastal water quality	Recovery of biological communities (seabed) and sediment quality will occur over time
Maintain good bathing water quality.	Implemented. Continuous implementation	Maintain current high status in bathing water quality	Through continued maintenance of such quality will sustain Malta's assets for recreation and tourism
IPPC permitting of larger industrial installations	Implemented. Continuous monitoring	Improvements of coastal waters	Chemical quality of coastal waters will continue to improve, leading to reduced risks to human health
Environmental permitting for lesser marine discharges	System for environmental permitting is now in place. Continuous implementation and monitoring	Improvement of coastal waters	Ecological and chemical quality of coastal waters will improve and contribute to rehabilitate ecosystem health

Program of Measures - Coastal (Basic Measures)

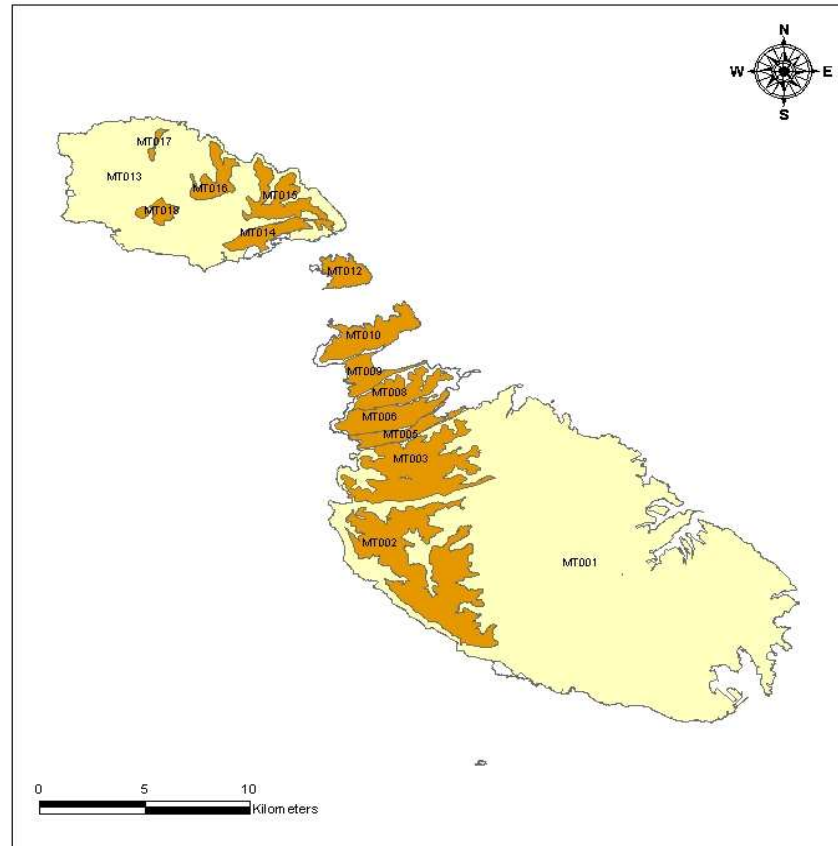
Management Actions/Measure	Status of implementation	Immediate result	Improvement of waters over the years
Smaller scale industries are regulated through general binding rules.	System being put in place. Continuous implementation and monitoring	Improvement of coastal waters through reduced contamination	Ecological and chemical quality of coastal waters will improve
Setting up of an inventory of emissions, losses and discharges of priority substances in water.	To be implemented as part of the WCMP programme of measures and EQS Directive	Enhance knowledge of chemical contamination potential of industrial discharges	Provides essential information for a cost-effective regulatory regime for industry. Feeds into the permitting process
Development of tools to estimate emission controls for direct discharges	To be implemented as part of the WCMP programme of measures	Leads to emission levels for marine discharges that are actually achievable and improvement in chemical quality	Provides the essential information for a cost-effective regulatory regime for industry. Feeds into the permitting process
Development and implementation of pollution abatement measures for substances of concern	To be implemented as part of the WCMP programme of measures	Enables a phased approach to implementation of the required regulatory measures using best available technologies	Improvement in water and sediment chemical quality. Promotes ecosystem health.

Program of Measures - Coastal (Supplementary Measures)

Management Actions/Measures	Status of implementation	Immediate result	Improvement of waters over the years
Develop and implement harbour environmental management plans with stakeholders	To be implemented as part of the WCMP programme of measures	Controlling deterioration of water within harbours and promotes stewardship by stakeholders	Improved harbour environment, sustaining Malta's assets for recreation and tourism
Develop and implement technical guidance for water pollution control in marinas	To be implemented as part of the WCMP programme of measures	Controlling deterioration of water within harbours and promotes stewardship by stakeholders	Improved harbour environment, sustaining Malta's assets for recreation and tourism
Develop environmental regulations for recreational boating in coastal waters	To be implemented as part of the WCMP programme of measures	Stop deterioration of seabed communities from anchoring and discharges). Safeguards bathing water quality	Potential rehabilitation of seabed communities
Develop a strategy for sustainable aquaculture development	To be implemented as part of the WCMP programme of measures	Reduce environmental impact of aquaculture practices. Attributes a new image to industry as one that fosters stewardship	Improved water quality; potential rehabilitation of degraded sites in the long-term; potential development and sustainability of the industry

GROUNDWATER

Groundwater



Groundwater Bodies in the Maltese River Basin District

Key

- Lower Coralline Limestone Aquifer
- Upper Coralline Limestone Aquifer

INDICATIVE ONLY - Not to be used for direct interpretation

GWB Code	Name of the groundwater body (GWB)
MT001	Malta Mean sea level
MT002	Rabat-Dingli Perched
MT003	Mgarr-Wardija perched
MT005	Pwales coastal
MT006	Mizieb Mean Sea Level
MT008	Mellieha perched
MT009	Mellieha coastal
MT010	Marfa coastal
MT012	Kemmuna Mean Sea level
MT013	Gozo mean sea level
MT014	Ghansielem perched
MT015	Nadur perched
MT016	Xaghra perched
MT017	Zebbug perched
MT018	Victoria-Kercem perched

Groundwater

Current Status

➤ *Quantity*

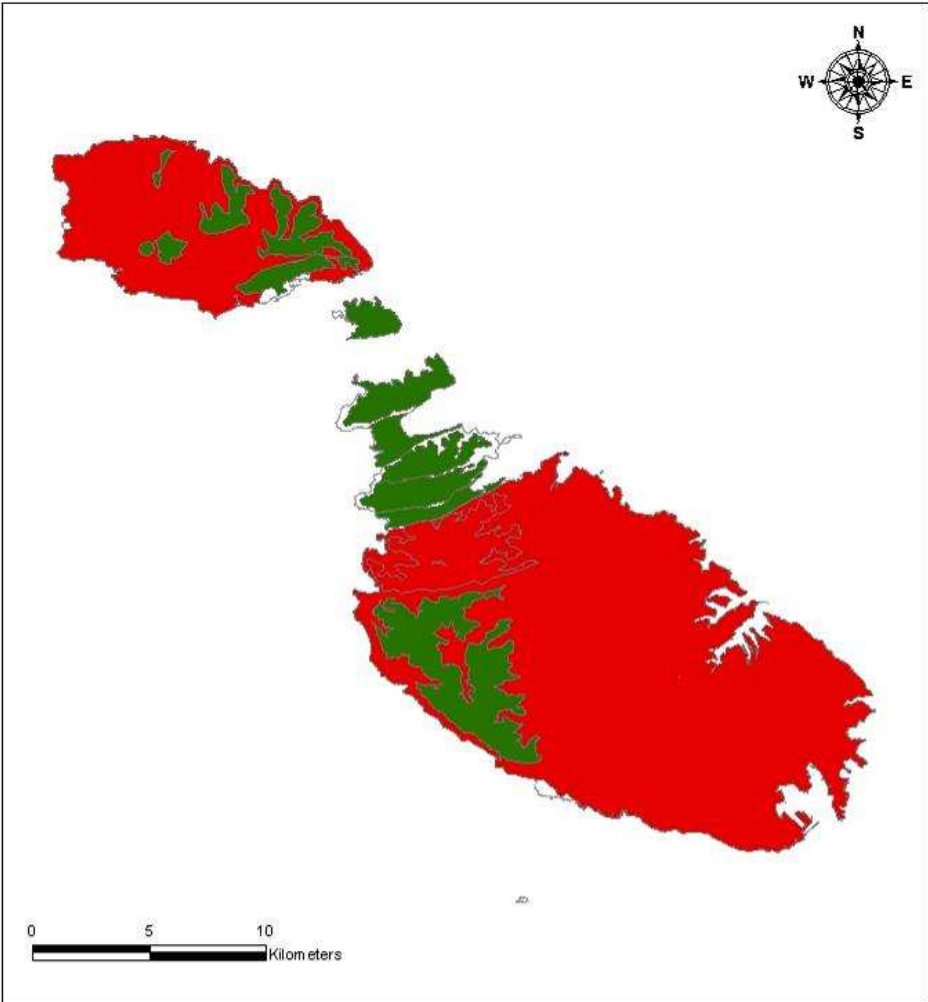
- Abstraction over and above sustainable limits.
- Lack of regulatory framework governing abstraction by the private sector over time

➤ *Quality*

- Nitrate levels resulting from excessive use of fertilisers in arable agricultural practice.
- 13 out of 15 ground water bodies have poor status due to nitrate pollution.
- High salinity in heavily depleted areas

Monitoring of status and trends

- Quantity: main aquifers monitored for water level.
- Quality: full monitoring program in place in all water bodies (2009).
- Old monitoring network upgraded with new monitoring points.
- Malta now has a comprehensive monitoring network in place, including small and less productive perched aquifers.
- Results are to be publicly available

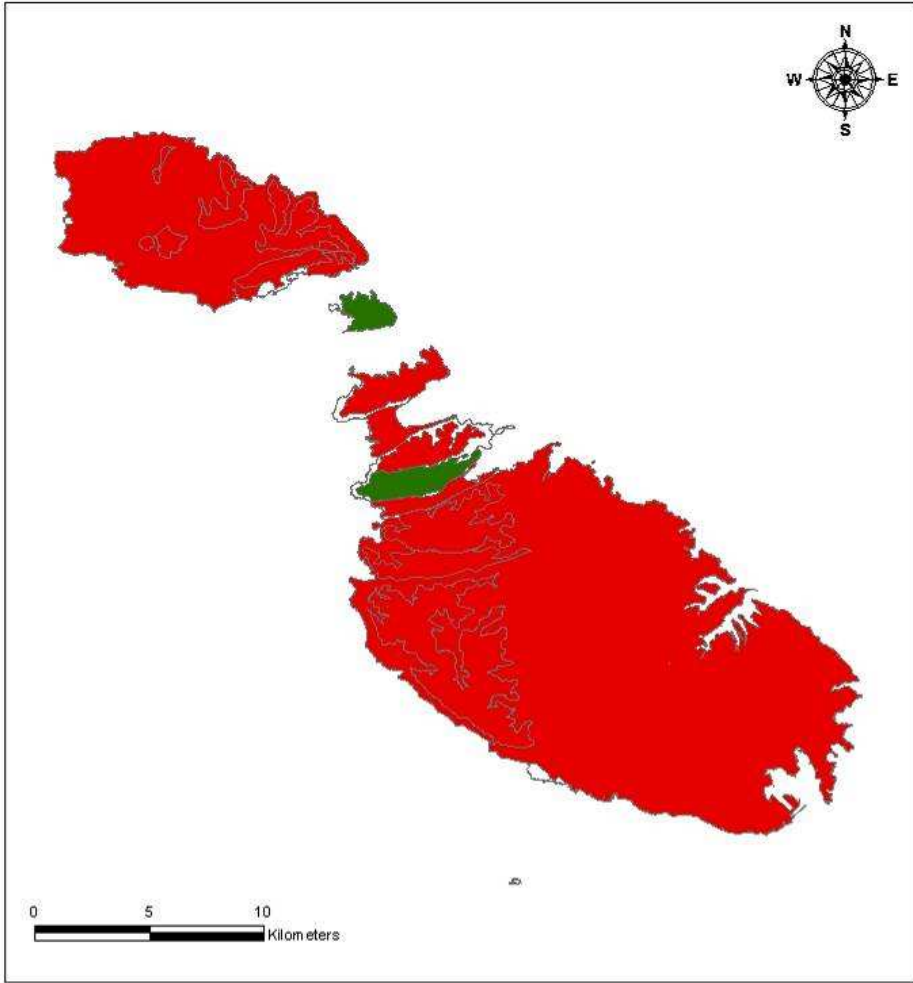


Groundwater Quantitative Status

Key

- Good Status
- Poor Status

INDICATIVE ONLY - Not to be used for direct interpretation



Groundwater Qualitative Status

Key

- Good Status
- Poor Status

INDICATIVE ONLY - Not to be used for direct interpretation

Groundwater Strategic Approach- Quantitative Status

- **Sustainable yield of the aquifers = 23Mm³/yr, whilst total freshwater demand >55Mm³/yr**
- **Hierarchy of measures possible, last of which augmentation of supply by desalination (alignment with EU Commission communication Comm (2007) 414 Final). Increased dependency on desalination will:**
 - Increase the cost of potable water production and the operating cost of WSC
 - Increase our vulnerability to offshore spillages and environmental disasters
 - Increase GHG emissions for energy generation; goes against objectives of Energy Policy for Europe.

Therefore, to curtail impacts on consumers, extensions to the 2015 deadline are being proposed to be requested to the EU Commission, subject to the implementation of these measures:

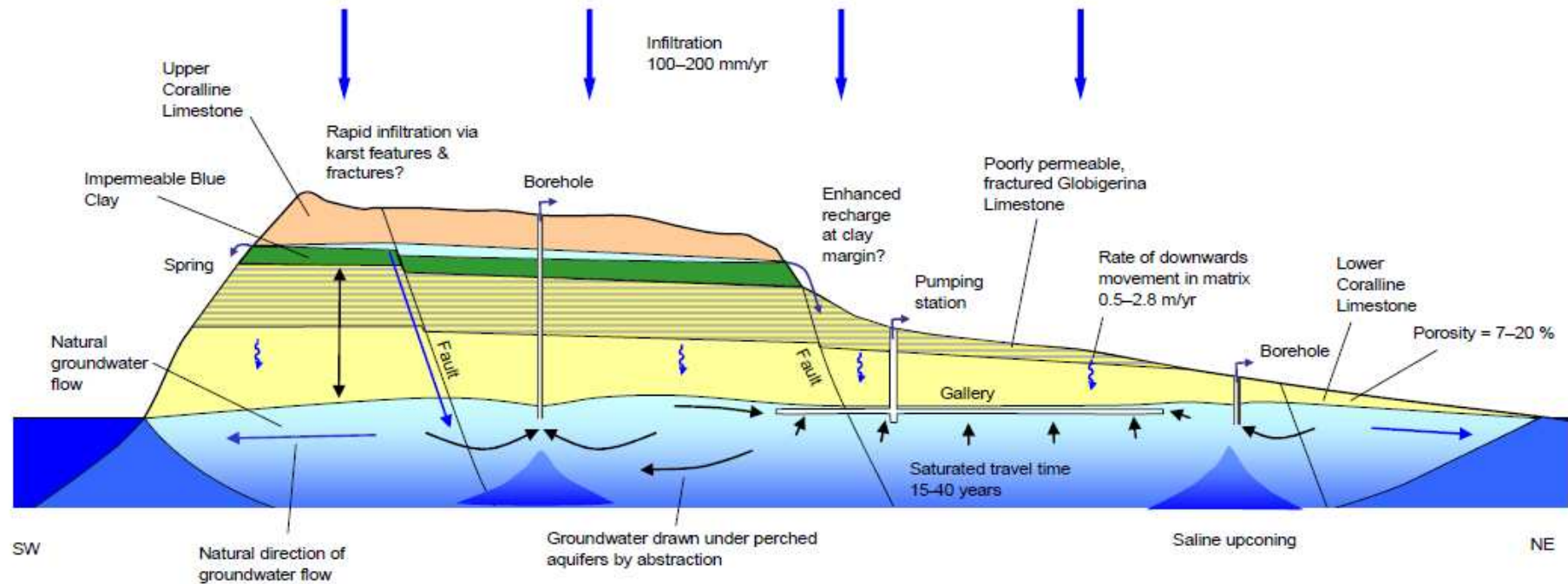
- **Introducing good groundwater-governance; this is already on course**
- **Metering of groundwater sources**
- **Aggressive promotion of efficiency in water-use, and demand management. (Possible funding under EU-Med programme)**
- **Undertaking of further studies for the utilisation of Treated Effluent which will become available by end 2011; pilots already being studied by MRA/WSC for the re-use of TSE in agriculture and for aquifer recharge.**
- **Promoting the harvesting of rainwater and surface runoff**

Groundwater Strategic Approach- Qualitative Status

- Technically not feasible to achieve good status by 2015 due to the slow response time of the aquifers (average age of groundwater in sea level aquifers is 40 years).
- Extensions of deadline to 2021 and 2027 (or when natural conditions permit or subject to the natural trend reversal).
- Need to implement nitrate reducing measures outlined in the Nitrates Action Programme developed under the Nitrates Directive, by 2015.

Funds are being sought for the development of an additional nitrate monitoring system that would enable early detection on the effectiveness of the Action Programme.

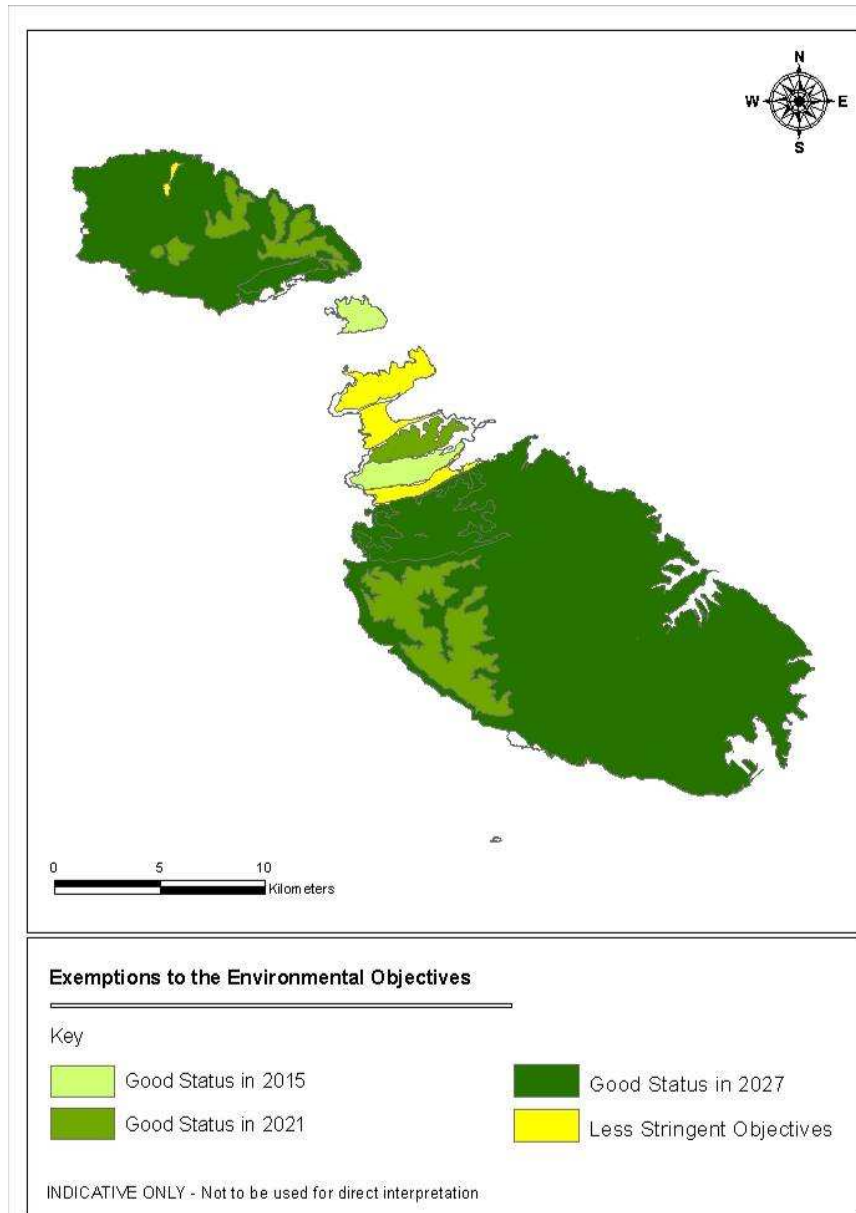
Groundwater residence times – Policy implications



- Travel time from surface to source of abstraction may take several decades
- Nitrate stored in intrinsic porosity will continue to act as a secondary source of nitrate for a very long time.
- No immediate improvements envisaged if manure/fertiliser application were to cease completely today
- Long saturated-zone residence times implies long term response to measures taken today.
- Hence the need for **urgent** action

Proposed deadline extension

17



Good Status by 2015: currently in good status

- Mizieb Mean Sea Level
- Kemmuna Mean Sea Level

Good Status by 2021: medium term response time

- Rabat Dingli Perched
- Mellieha Perched
- Nadur Perched
- Xaghra Perched
- Victoria-Kercem Perched

Good Status by 2027: long term response time

- Malta Mean Sea Level
- Mgarr Wardija Perched
- Gozo Mean Sea Level
- Ghajnsielem Perched

Less Stringent Objectives: significantly affected by human activity precludes good status

- Pwales Coastal
- Mellieha Coastal
- Marfa Coastal
- Zebbug Perched

Program of Measures - Groundwater

Management Actions/Measures	Status of implementation	Immediate result	Improvement of waters over the years
Action plan to reduce nitrate contamination in groundwater	<p>Inter-departmental committee completed recommendations (<i>OPM, MRRA, MEPA, MRA</i>)</p> <p>Action plan published on the 7 May 2010</p> <p>Stakeholder consultation in progress.</p>	Limited to better farming practices and improved waste-management practices	Natural long time span (averaging some 30-40 years in the mean sea level aquifer) for aquifer recharge.
Sustainable development of groundwater	<p>Several tasks ongoing:</p> <ul style="list-style-type: none"> -Verification of data gathered during the 2008 notification process. -Metering of boreholes -Drafting of new regulations. -Surveillance and operational monitoring of all groundwater bodies. -Setting mechanisms for the allocation of irrigation quotas. -Stakeholder consultation. 	More reliable data (quantity, quality and location) on actual abstraction to improve groundwater management	Abstraction reduced to sustainable levels and achievement of regulatory standards

Program of Measures - Groundwater

Management Actions/Measures	Status of implementation	Immediate result	Improvement of waters over the years
Water pricing policies adopted to reflect the economic value of water, discourage waste whilst rewarding efficiency. Social cases continue to benefit from government subsidies.	<ul style="list-style-type: none"> •Basis of 2009 tariff revisions •Same principles to be applied to groundwater abstraction tariffs. 	Curtailling of system demand and improve efficiency	Lower demand will lead to lower levels of abstraction and reduce dependency on desalination.
Demand management aimed at reducing tap-water consumption and improve efficiency of water use	To be implemented as part of the WCMP programme of measures	Better cost-effectiveness of water services, Increased awareness on the economic value of water and improved water-consciousness	Lower demand will lead to lower levels of abstraction and reduce dependency on desalination, hence lower emissions of GHGs
Alternative resources: promoting wastewater reuse and rainwater harvesting	<ul style="list-style-type: none"> •Two pilot projects on re-use: one at Ghajnsielem, the other at Bulebel. •SWMP completed 	Alternative water resources expected to be available in the medium term	Reducing pressure on groundwater sources whilst meeting water demand for agriculture, industry and other secondary purposes

Water Governance- Measures to date

2008 – Groundwater sources “Notification”

- Publication of LN255/08, “notification of groundwater sources”
- 2649 new notifications of boreholes and groundwater sources

2009 - Licensing of Water Tanker Operators

- In 2009, an amendment to the Water Supply and Sewerage Services Regulations, LN525/04, brought into force section 3 (1)(a)(iii) requiring the supply of water to a customer by water-tanker, to be regulated by means of a licence issued by the MRA.
- MRA received 119 applications which are being currently processed prior to the issuance of the licence.

2010 - Metering of Boreholes.

- MRA published the Groundwater Abstraction (Metering) Regulations LN241/2010, requiring all groundwater abstractions in excess of 1m³/day to be metered.
- 34 meters have been installed so far, whilst 53 commercial operators have already paid the relevant fees. Installation of borehole meters is being undertaken by ARMS Ltd.

It needs to be emphasised that the aforementioned measures have been prioritised as they are key to the sustainable management of water resources, and form part of a long term policy, based on principles of fair allocation

The Principle of Cost Recovery

- The Water Framework Directive requires Member States to ***“take account of the principle of recovery of the costs of water services...in accordance with the polluter-pays principle”*** and ***“Member States may in so doing have regard to the social, environmental and economic effects of the recovery as well as the geographic and climatic conditions of the region”***.
- By 2010 Member States must ***“provide adequate incentives for users to use water resources efficiently”***, and must ensure ***“an adequate contribution of the different water uses, disaggregated into at least industry, households and agriculture, to the recovery of costs of water services”***.
- In the Maltese Islands the principle of cost recovery is being taken into account for the provision of water services (potable water) by the WSC.
- The cost recovery principle is not yet applied for groundwater abstraction by private operators. Installation and O&M costs for borehole meters are recovered through fees chargeable to groundwater users. Volumetric charges will be introduced after the observation period.

Financial impacts

	Investment Cost	Annual Cost
Total <u>estimated</u> National Cost	€ 233 million	€ 22million
➤ <u>Approved/ allocated</u> by Government to be spent for implementation of other Directives	€ 224 million	€ 22million

These costs include amongst others:

Sewage treatment plants, rainwater harvesting projects, water supply improvements infrastructure, treatment of animal waste and farm upgrading, construction of anaerobic plants, and measures aimed at improving the regulatory framework

- Additional funds required estimated at € 9 million (investment)

These include outlays, by 2015, to carry out:

- robust information and awareness campaigns to improve water demand management by all sectors;
- measures to increase the knowledge base;
- improving management of harbours.

Public Consultation on draft WCMP

- Draft WCMP launched on the MEPA website in May 2010

<http://www.mepa.org.mt/topic-waterpc>

- Comments can be forwarded electronically as follows:
 - to MEPA, using the comment form provided on webpage or by email addressed to water@mepa.org.mt
 - to MRA, by email addressed to enquiry@mra.org.mt
 - Written comments can be sent to:

Malta Resources Authority
Millennia, 2nd Floor
Aldo Moro Road, MARSA
MRS 9065

Malta Environment and Planning Authority
Directorate for Environmental Protection
P.O. Box 200, MARSA
MRS, 1000

- Public consultation process will continue until November, 2010 (6 month period):
 - MEUSAC presentations
 - One-to-one meetings with stakeholders and interest groups, including local councils, NGOs, and others.
 - newspaper articles to inform the general public
 - promotion through other media, including radio and television

Thank you!