

TCP/MAT/2801

Comprehensive Legislation for Groundwater Management



Issues and Options for Agricultural Water Management

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WHAT IS AT ISSUE FOR MALTESE AGRICULTURE ?

- Land and groundwater resource stretched beyond limits and competition from other sectors intense
- Saline intrusion threat everpresent but opportunities to relax some key aquifers do not appear to exist
- Economic returns to water marginal in agriculture but rural lifestyles important and production systems not EU compliant
- Economic returns to water in rapidly growing municipal areas much higher inducing land conversion

WHAT IS AT ISSUE FOR MALTESE AGRICULTURE ?

Questions:

1. What is Malta's agricultural future?
2. What are the implications in terms of water resources?

POSSIBLE FUTURE # 1: MORE PRECISION AGRICULTURE?

- Input efficient (land, water, labour) and economic productivity high
- Needs niche markets and value added market chain
- Demands for improved water services will increase particularly assurance and reliability of water supply
- Overall demand for groundwater may decrease but will not necessarily reduce pressure on vulnerable aquifers

POSSIBLE FUTURE #2: 'AMENITY' AGRICULTURE

- Direct inputs less intensive (e.g. fertilisers) but off-farm inputs can rise
- Low economic and water productivity
- Environmental returns may be higher
- Water conservation not necessarily forthcoming

MOST LIKELY OUTCOME: UNDER EU CAP

- Niche markets in EU developed
- Modulation – subsidies de-linked from production
- Polluting agriculture phased out
- Rural livelihoods/incomes still subsidised in one form or another

Water Use Implications

	Intensive	Amenity
Low water consumption	<ul style="list-style-type: none">• Precision agriculture: all drip irrigation, fertigation• High value crops• Greenhouses, etc.	<ul style="list-style-type: none">• Extensive agriculture: wheat, olive trees, extensive pastures
High water consumption	<ul style="list-style-type: none">• Sprinkler irrigation• Furrow irrigation, etc.	<ul style="list-style-type: none">• “Business as usual”,• Basin irrigation,• No control of water losses

Water Quality Implications

	Intensive	Amenity
High risk	<ul style="list-style-type: none">•Pollution from nitrates•Intensive animal husbandry•Pesticides	<ul style="list-style-type: none">•Pollution from nitrates•Pesticides
Low risk	<ul style="list-style-type: none">•Precision agriculture (water, fertilisers, pesticides)•Control of animal waste	<ul style="list-style-type: none">•Orchards•Organic meat production

POLICY IMPLICATIONS: WHAT ISSUES CAN BE ADDRESSED?

Look across sectors

- Align national agriculture policy that is consistent with land and water resource limits and new markets
- Remove distortions – e.g. rural energy pricing

Water demand management

- Send conservation signal through agriculture water pricing
- Promote drip and micro-sprinkler irrigation
- Look at high value crops under precision irrigation

Water supply management

- Promote re-use of treated wastewater
- Aquifer management – including aquifer storage recovery (ASR)

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THANK YOU

DEMAND MANAGEMENT

- Water use efficiency: reducing wastes in agriculture (technical option)
 - surface irrigation: 30-50% efficiency
 - sprinkler: 50-75% efficiency
 - localized (drip): 85-95% efficiency

WATER PRODUCTIVITY IMPROVEMENT

- High value crops
- Crops with low irrigation water requirements
- Taking into account non-market values of commodity production