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A strategy for supporting sustainable irrigated agriculture in water scarce Mediterranean islands – lessons learnt from Malta

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For many countries in the Mediterranean region, the recurrent problem of water scarcity constitutes a major agronomic and socio-economic risk to agricultural production. Countries which are particularly vulnerable include many Mediterranean islands, where acute pressures are concentrated on groundwater - the most important water supply resource, due to the typical absence of reliable surface water bodies. As agriculture is often the dominant sector in terms of water abstraction and consumption and land use in most Mediterranean islands, groundwater becomes of paramount importance for supporting local irrigated agricultural production and rural livelihoods. However, this resource is generally over-exploited in terms of quantity, while its quality continues to deteriorate due to saline intrusion and nitrate pollution. Under these conditions, the strategic management of the available resources is essential to secure the sustainability of water resources and economic viability of the agricultural sector in Mediterranean islands.

To address these challenges, we develop and present a strategy to achieve agricultural and water resources sustainability, with a focus on Malta, recognised as one of the most water stressed countries globally. The conceptual development of the strategy was based on identifying the "blue" water challenges facing agricultural development in Malta and specifically activities dependent on freshwater (groundwater) for irrigated production, after performing an extensive literature review and expert judgment. A sustainability framework based on three pillars (environment, economy, society) was developed to help identify the key aim and priorities underpinning the strategy. The strategy also defines priorities for action for varying scales of operation (notably farm, industry and R&D level). The priorities for action align with sustainable development principles and have a strong focus on innovations in technology and management.

In terms of challenges, our analysis highlighted that irrigated agriculture in Malta is not only impacted by environmental factors such as the climate and geography of the region but is also strongly influenced by a range of economic (e.g. tourism development and accession to the EU) and societal (e.g. population growth, environmental regulation) drivers. Priority actions relating to better management of water and soil resources and irrigation reflect on both the environmental and economical pillars and will be fundamental for the successful implementation of the strategy. The Maltese Ministry of Agriculture together with key stakeholders on the island will support the strategy implementation in parallel with other initiatives to build technical capacity through knowledge translation. The approach developed for Malta has direct relevance to other island communities where agriculture is the cornerstone of their economy and where droughts and water scarcity are major threats to the sustainability of farming practices.