

International Journal of River Basin Management

ISSN: 1571-5124 (Print) 1814-2060 (Online) Journal homepage: <http://www.tandfonline.com/loi/trbm20>

Unpacking organizational capacity in the context of the Water Framework Directive

Francesca Xerri, Paul Jeffery & Heather M Smith

To cite this article: Francesca Xerri, Paul Jeffery & Heather M Smith (2016): Unpacking organizational capacity in the context of the Water Framework Directive, International Journal of River Basin Management, DOI: [10.1080/15715124.2016.1193508](https://doi.org/10.1080/15715124.2016.1193508)

To link to this article: <http://dx.doi.org/10.1080/15715124.2016.1193508>



Accepted author version posted online: 13 Jun 2016.
Published online: 13 Jun 2016.



Submit your article to this journal [↗](#)



Article views: 12



View related articles [↗](#)



View Crossmark data [↗](#)

Publisher: Taylor & Francis & International Association for Hydro-Environment Engineering and Research

Journal: *Intl. J. River Basin Management*

DOI: 10.1080/15715124.2016.1193508

Unpacking organizational capacity in the context of the Water Framework Directive

Francesca Xerri - Cranfield University, Cranfield Water Science Institute, Cranfield MK43 0AL, United Kingdom of Great Britain and Northern Ireland

Paul Jeffery - Cranfield University, Cranfield Water Science Institute, Cranfield MK43 0AL, United Kingdom of Great Britain and Northern Ireland

*Heather M Smith - Cranfield University, Cranfield Water Science Institute, Cranfield MK43 0AL, United Kingdom of Great Britain and Northern Ireland

*Email: h.m.smith@cranfield.ac.uk

1. Introduction

The implementation of the European Water Framework Directive (WFD, 2000/60/EC) relies on Member States' national water institutions and organizations. Since coming into force in 2000, the Directive has prescribed an approach to the management of all water bodies and has additionally obliged Member States to transpose the Directive into their national law and identify one or more competent authorities to deliver the principal functions of coordinating and reporting on the Directive's implementation by a set deadline. Competent authorities translate the WFD goals into river basin management plans (RBMPs), which report on the status of water bodies within the river basin districts they apply to, and outline the actions being taken to achieve the overall ambition of reaching 'good ecological status'. While all Member States must work towards achieving the WFD's objectives and meet its reporting requirements, ways of doing so vary for every country and river basin (de Bruin *et al.* 2005). For this reason, a Common Implementation Strategy (CIS) was developed to support the effective implementation of the WFD across the European Member States by serving as a platform for discussion and issue resolution in challenging areas such as water monitoring (Dworak *et al.* 2005). Considering its complexity, the delivery of the WFD has been described as a great challenge for competent authorities and other public organizations responsible for its implementation (Frederiksen *et al.* 2008, Petersen *et al.* 2009, Cabezas 2012; van der Heijden *et al.* 2014, Dolan *et al.* 2014, Kelly 2014).

It is widely recognized that many contemporary challenges in water management are of an institutional and organizational nature rather than technical (Alaerts 2009, Moss *et al.* 2009, Leidel *et al.* 2012). This assertion holds true for WFD implementation. The effectiveness of WFD implementation can be measured in terms of the success of Member States and their competent authorities in achieving the environmental objectives and their compliance to timeframes (Green and Fernandez-Bilbao 2006, Moss 2008). Substantial research relating to the Directive has been carried out, especially on the application practicalities of implementing the WFD provisions. Key areas for investigation have included: policy design challenges associated with harmonizing interests across geographical scales (Moren-Abat and Rodriguez-Roldan 2012), disparities between the ambitions set by Member States for fulfilment of the Directive's institutional requirements and the actual practical implementation at local levels (Lieberink *et al.* 2011), the need to use more scientifically rigorous methods to assess the status of water bodies and the associated difficulties of monitoring the implemented interventions (Hering *et al.* 2010, Birk *et al.* 2012, Phillips 2014), as well as effective ways of using obtained data to inform management options and outcomes at the European and regional level (Hering *et al.* 2010). However, less well understood is the extent to which competent authorities have the capacity required to deliver the WFD ambitions. Studies of competent authorities have tended to focus on their role as mediators between stakeholders and the skills needed to manage these relationships, and the co-ordination efforts required across sectors as well as at the science-

policy interface (Green and Fernandez-Bilbao 2006, Quevauviller *et al.* 2007, Junier and Mostert 2012, Lundmark and Jonsson 2014). These analyses have concluded that evidence of the required capacities is challenging to expose and delineate and call for further attempts to generate a knowledge base in this important area. While such studies illustrate the importance of understanding the capacity of competent authorities, the little research that addresses capacity issues tends to discuss specific aspects in isolation. This tendency is also reflected in organizational capacity research which draws on contexts beyond the water sector (Germann and Wilson 2004, Bryan 2011). Yet few (if any) studies have approached this topic from a holistic, systematic and theoretically rooted perspective.

In this contribution we seek to unpack the concept of organizational capacity in the context of the WFD. In doing so we offer a conceptual framework for exploring and evaluating the organizational capacity of WFD competent authorities founded on a set of qualitative indicators derived from a critical review of current understandings. This conceptual framework is further developed using empirical evidence from the experience of WFD implementation in one EU Member State, Malta, a semi-arid Mediterranean island and the smallest European Member State with more than 10 years of WFD implementation experience, is the case study. The findings illustrate the availability, accessibility and use of various capacities within the competent authority, using evidence from selected WFD responsibilities. Unlike previous studies that have looked at aspects of capacity in isolation, the conceptual framework developed in this study allows an in-depth and holistic exploration of capacity across three selected articles of the WFD. Evidence shows that the surrounding institutional environment of competent authorities can at times be an enhancing factor while at other times it can constrain effective implementation of the WFD. This strongly suggests that while supplementing organizational capacity can have positive knock-on effects on the competent authorities' use of available or accessible capacity to the best of their abilities, in other instances it may not necessarily result in effective implementation of responsibilities. Moreover, the wider network perspective we adopt allows the identification of opportunities to make more and better use of available or accessible capacities. This information is helpful to policy makers in understanding the competent authorities' organizational capacity requirements across Member States.

This contribution is timely in that a review and possible revision of the WFD are planned by 2019 (European Commission 2012). This presents an opportunity for Member States to put forward ideas for improving the Directive based on their experiences. The approach and findings presented in this study provide a mechanism and evidence base which could inform this review process. The paper begins by elaborating on the concept of organizational capacity, based on a review of previous studies that have sought to unpack and measure capacity in different contexts. The paper then outlines how these understandings have been applied to the case of Malta, including the methods for data collection and the thematic analysis approach. Finally, an analysis of the capacity profile of Maltese competent authorities, along with a thematic map showing the conceptual framework of organizational capacity, is presented and discussed.

2. Unpacking organizational capacity

Organisational capacity is a multidimensional and highly contested concept that has been extensively discussed across multiple fields of study without being rooted in any specific theory. Different contexts offer different meanings of capacity (Goodman *et al.* 1998). As a result it suffers from a lack of definitional clarity making both its management and measurement highly challenging (McNair and Vangermeersch 1998, Harrow 2001, Flaspohler *et al.* 2008, Bryan 2011). Much of the research around capacity within the mainstream organizational literature is rooted in international development studies. This is also true of that which relates to the water sector, encouraged by the United Nations Development Symposium held in Delft, Netherlands 1991 (Hamdy *et al.* 1998, Ivey *et al.* 2004). However, capacity is now emerging as a global concern in the field of water management, both for developed and developing countries (Timmer *et al.* 2007).

Understanding organizational capacity requires an appreciation of what an organization is and does. An organization is understood to be an established entity consisting of a group of people working towards the same goal, which cannot otherwise be achieved by an individual (Hatch 2011, Haynes *et al.* 2014). Organizational performance thereby refers to what an organization actually does and can therefore be understood as the extent to which an organization achieves its goals or objectives. In contrast, organizational capacity is a set of attributes describing the resources and abilities an

organization has access to as well as its 'potential to perform' (Horton *et al.* 2003, p.19). While organizational performance and capacity are interdependent, they are not synonymous, meaning that performance is not necessarily indicative of capacity and vice versa (Eisinger 2002, Meyer *et al.* 2012, Kayaga *et al.* 2013). It may therefore be the case that an organization has the necessary capacity but does not adequately perform the target activity, or that it performs effectively despite having limited or unsuitable capacity. An organization does not act in isolation, but rather it forms part of an institutional context and environment with symbolic/cultural influences as well as regulatory ones (Meyer and Rowan 1977, Greenwood *et al.* 2008).

Organizational capacity is shaped by a variety of factors including: capability (the knowledge, skills, attitudes and competence both of the individuals working within the organization and the organization as a whole), size of tasks, resources needed to perform tasks (including time, finances, technology and information) and organizational relations (Franks 1999). While it is acknowledged that individuals within an organization have different forms of capacity, such as those possessed by the technocrats and the sociocrats described by Tropp (2007), organizational capacity is not merely the assembly of multiple individuals' capacity. This is because the organization 'has a life in addition to its members' making the organizational whole greater than the assembly of individuals' capacity as 'additional properties of the whole stem from the structured relations and causal interactions between the individuals involved' (Hodgson 2007, p.111).

Where organizations have a prescribed role in policy implementation (such as in the case of the WFD and competent authorities), their capacity can determine the level and quality of that implementation, making it imperative for policy makers to be sensitive to capacity issues when setting out policy objectives (Ting 2011, Leidel *et al.* 2012). An understanding of organizational capacity constitutes valuable information for policy makers as it can be used to guide realisable interventions as well as provide information relating to their impact (Lessik and Michener 2000).

In the literature on organizational capacity several attempts have been made across various institutional contexts to grasp this dynamic and abstract concept. The most common approach has been to develop conceptualizations and indicators that seek to unpack and measure the major components of capacity (Barman and McIndoe 2012). A one size fits all conceptual framework of organizational capacity is impractical as different organizations have different functions and capacity requirements across varying institutional contexts. Existing organizational capacity frameworks vary in the number of capacity components identified but tend to share some. In fact, much literature concerning the unpacking of organizational capacity components has identified human resources, interactions within and outside the organization, leadership, technical resources, and fiscal resources as being of significance (Flaspohler *et al.* 2008). Indeed leadership is a capacity component that is widely identified in most conceptual frameworks of organizational capacity, often being attributed a pivotal role. The formal unpacking of organizational capacity has been demonstrated in studies of the public health sector (Meyer *et al.* 2012), international development (Lusthaus *et al.* 2002) and non-profit service organizations (Hall *et al.* 2003). These have tended to use the approach as an assessment tool to explore the relationship between capacity and performance, with the aim of improving the latter. The conceptual frameworks are based on theoretical connotations and not informed from practice within their respective fields of study. Some studies have used existing frameworks as the application of the conceptualization of organizational capacity issues closely match with their research needs (Sharpe 2006, Misener and Doherty 2009, Mustapa *et al.* 2014). In turn, these studies have continued to describe and, largely, validate existing frameworks.

Based on a critical review of this existing body of work, we adopt a framework composed of five core components of organizational capacity, synthesized from the different aspects and indicators discussed in the literature (Table 1). Since the meaning assigned to an indicator can lose its accuracy when applied to a different research context (MacDonald 1996), the synthesis considered the definition of the meaning rather than its labelling. The selected components are holistically representative of the organizational capacity of competent authorities and their breadth reflects several fundamental characteristics of the Directive, such as complexity and flexibility of implementation of its provisions, while also reflecting the competent authorities' mandate. The five components (Figure 1), defined further below, are; (i) legal authority, (ii) information and knowledge, (iii) skills, (iv) resources, and (v) leadership.

These five components are interrelated and influence each other, especially in terms of their availability, accessibility and use. A capacity component is defined as available when the competent authority is in its possession (i.e. internal organizational capacity), and accessible when it is either made available or supplemented to the competent authority from the range of opportunities existing within its surrounding institutional environment (i.e. external organizational capacity). Use of capacity refers to an organization's actual consumption of available and accessible components. Therefore there are three scenarios, as well as the combination of the lack of these, in which competent authorities experience organizational capacity: (i) available; (ii) available and accessible; and (iii) available, accessible and used. Organizational capacity is dynamic and these situations are therefore also sensitive and change over time.

3. Methods, materials and study area

Malta's accession to the European Union in 2004 resulted in the transposition of the WFD into national law (Water Policy Framework Regulations 2004). Owing to the size of Malta, only a single river basin district was identified and the required river basin management plan is referred to as the Water Catchment Management Plan (WCMP). The 1st WCMP was adopted in 2011. The year 2015 marks the end of the WFD's first management cycle (European Commission 2012) and as it is the case for other Member States, the presentation of Malta's 2nd WCMP is expected.

The pre-existing institutional arrangements for water management in Malta mean that policy-making and relevant decision functions are the direct responsibility of central government. The WFD responsibilities lie within the Office of the Prime Minister and Ministry for Energy and Health, who host the two competent authorities for Malta – the Malta Environment and Planning Authority (MEPA) and the Water Conservation Unit (WCU). The former is responsible for the coordination and implementation of the WFD for coastal waters, as well as some protected inland surface waters. The remit of the WCU includes ground waters and all other inland surface waters that do not fall under the responsibility of MEPA. The main role of WCU is the co-ordination of water policy in Malta including the development and implementation of a National Water Management Plan which reflects and builds on the objectives of the WFD as well as other European directives (Sustainable Energy and Water Conservation Unit Order 2014).

The conceptual framework of organizational capacity detailed above shaped an iterative approach to empirical data collection and thematic analysis, which in turn allowed the conceptual framework to be expanded and refined. The approach to thematic analysis was guided by established methods and relied on mixing deductive and inductive insights (Fereday and Muir-Cochrane 2006, Braun and Clark 2006, Guest *et al.* 2011). A case study approach (with Malta as the selected case) enables us to deliver insights which appreciate the complexity of organizational phenomena (Yin 1984, p.xv). It allows rich, in-depth and holistic understandings of complex experiences (Baharein and Noor 2008, Brown 2008) whose narratives strongly benefit policymakers and practitioners (Stake 1995, Flyvberg 2006).

Empirical evidence was collected from six publically available Maltese water policy documents (see Table 2) and nineteen in-depth face-to-face semi-structured interviews. The sample sizes reflect the fact that the overall potential pool of documents and key informants for the selected case is limited and highly specialized. Considering the small size of Malta, interviewee references are not given in the results so as to protect the participants' anonymity. Phrases in quote marks in results (section 4) indicate direct quotation of interviewees' responses. The interviews were conducted between June and October 2014 with three types of key informants representing organizations from: the two competent authorities, major government stakeholders working closely with the competent authorities, and non-government stakeholders such as research, non-government organizations with an agenda for water conservation, and water service users.

The full breadth of WFD requirements would make for an unwieldy and superficial analysis. Consequently, three specific responsibilities within the Directive were selected as the focus for analysis in order to enable in-depth exploration of the different aspects of capacity associated with each one. The obligations selected for study were: Article 8 – monitoring of surface water status, groundwater status and protected areas; Article 9 – recovery of costs for water services; and Article 14 – public information and consultation. The third implementation report issued by the European Commission in 2012, detailing its assessment of Malta's adherence to the WFD implementation on

the basis of the 1st WCMP, was used to provide a measure of each responsibility's implementation status. The implementation of Article 14 is classified as high as the responsibility has been recognised as fully conforming to the requirements of the WFD. The implementation of Article 8 is classified as moderate as it did not reach the full requirements of the WFD, particularly with regards to surface water monitoring although following a court ruling (Case C-351/09 2010) Malta corrected its position. In contrast to Articles 8 and 14, Article 9 does not oblige Member States to take action (in this instance to carry-out recovery of costs for all water-use activities) but it does require reporting and justification of any exemptions made. It is worth noting that a recent judgment by the European Court of Justice makes it more difficult for the European Commission to enforce cost recovery due to a failure by a Member State over Article 9 (Case C525/2 2014). Malta's level of implementation of Article 9 is classified as low as it was not in line with the WFD requirements. This classification of the implementation of three specific WFD obligations serves as a benchmark that sets the context for understanding the organizational capacity of the competent authorities, as well as an avenue to explore any consistencies or lack thereof.

Our analysis explored each capacity component and assessed the extent to which it was available, accessible and used within the competent authorities. The results were aggregated across the two organizations due to their small size and close cooperation throughout the implementation of the WCMP in Malta. Organizational capacity was characterized according to the possible scenarios of these three states of capacity into high, moderate and low. 'High' indicates that capacity is available, accessible and used, 'moderate' indicates the lack of use of capacity that is available and/or accessible, and 'low' indicates that capacity is neither available nor accessible.

4. Results

The empirical data allows us to describe a capacity profile of the Maltese competent authorities in their implementation of three selected WFD responsibilities. These findings also allowed us to expand and refine the conceptual framework for organizational capacity, in order to add greater depth and breadth to the concept. The capacity profile of the Maltese competent authorities in implementing the three selected responsibilities is summarized in Table 3.

Evidence around the implementation of Article 8 highlights the widely held view that safeguarding Malta's water resources is a priority for the country and the WFD is regarded as a tool facilitating the achievement of this endeavour by making it a legal obligation. Groundwater has been classified as 'at risk' because of the challenges it faces both in terms of quantity and quality (Figure 2). This is mainly due to over abstraction and high contamination by nitrates and chlorides (National Audit Office 2012). Malta has applied for an extension to the established 2015 deadline to achieve good status to 2027. The other water body types are seen as having less significance in the context of the Maltese water environment.

The classification of the implementation status of monitoring as 'moderate' correlates with the overall moderate capacity of the competent authorities. Malta has complied with the Directive's provisions and thanks to the available monitoring data there is now an improved understanding of the condition of its water resources which, in turn, has informed water management optioneering and decisions. While there is evidence of high 'knowledge about the WFD' across the documents analysed, there is also ample evidence to suggest that the competent authorities require more 'knowledge about the river basin district' and greater investment into plugging some significant 'knowledge gaps'. As an example, it is worth noting that the assessment of the groundwater status had to rely on assumptions given that factual abstraction data was not available. There are several references in the data collected from the competent authorities and other closely related government organizations to plans aimed at investing more into the knowledge base required for the implementation of Article 8 because 'additional information, beyond that which is currently available, is required for the effective implementation of the WFD' (WCMP 2011, p.98).

The most prominent capacity gap facing the competent authorities in their efforts to implement Article 8 is skills. It is widely recognized across the evidence base that the competent authorities have struggled to find the skills within the workforce to overcome the challenges of a Directive that is so heavily premised on the availability of scientific capacities and evidence. The competent authorities attribute the lack of skills among the workforce to the lack of specialised degree level courses in subjects such as hydrology and hydrogeology. As there may not be the employment demand for such

specialised courses to take place, the future development of a link with a non-Maltese research institute presents an opportunity for improved access to this form of capacity. In fact, government organizations including the competent authorities are encouraged to forge collaborations with international institutions, participate in networks and follow the examples set by renowned policy institutes (National Audit Office 2012, TPPI 2015). While establishing collaborations is a skill in itself, taking on such leadership initiatives would in turn lead to higher capacity access beyond the confines of Malta with possible positive ramifications felt throughout the organizational capacity of the competent authorities.

The capacity challenges related to the implementation of Article 8 have made it imperative for the competent authorities to adapt to these conditions in their effort to fulfil their mandate. There has been increasing effort to continue current investment levels in organizational memory and in-house capacity building, such as the strengthening of the data management system currently in place. Another strategy used to compensate for lack of human resources has been the adoption of a puzzle approach to monitoring, whereby the data requirements of the WFD are matched to the data needs of other European directives such as the Marine Strategy Framework Directive, Urban Waste Water Directive and Nitrate Directive, in order to identify overlaps and avoid duplicating work. Once information is available for other Directives, the competent authorities feed this into the preparation of the next WFD cycle. To compensate for specific knowledge and skills deficiencies such as those needed to examine ecological status and implement intercalibration, the competent authorities have outsourced work to private companies with appropriate expertise. A similar strategy is also used for materials resources which are not always available locally. Despite these opportunities to access capacity, the capacity of the competent authorities' personnel plays a crucial role as they are required to carry out background readings on areas outside their expertise in order to monitor the progress of consultants and use the results to feed them into the overall WFD monitoring responsibility. Moreover, it is noted in the evidence base that the competent authorities have used Malta's slightly untimely (i.e. late) performance during the first WFD management cycle to their advantage. Lessons have been learnt from other European countries in terms of the information made available on what works best in the implementation of this responsibility. For example, they did not participate in the intercalibration procedure for lakes in the Mediterranean. Other countries invested heavily in this activity and concluded that lakes cannot be intercalibrated at Mediterranean level due to significant differences in local conditions; 'had Malta participated, it would have been a waste of time and resources'.

The implementation status of Article 9 is graded as 'low' as a broad range of water services are not covered, there is a lack of transparency and information, and the justifications made for exemptions are not sound (European Commission 2012). Perhaps surprisingly, the data exposed by this study evidences a relatively high capacity amongst the competent authorities to implement this obligation. The capacity is available and has been used as evidenced by the fact that the necessary research to support implementation has been carried out. This is arguably an example of how possession and application of the necessary capacity does not necessarily translate into high performance.

The relatively recent reduction in water prices was widely positively received by the Maltese public, and many claimed that it was the factor contributing to a change in government in 2013. However, most non-government respondents (excluding the private organizations whose economic activity depends heavily on water use) highly criticised this 'politically motivated initiative' as it does not comply with the target of efficient water use which should be a fundamental principle for any water scarce country like Malta. The current price of water is not reflective of the value it has to the various economic sectors, environment and society. Consequently, it is foreseen that this responsibility will be 'the chief pressure Malta will be facing from the Commission in the future, heavy with political implications' (TPPI 2015, p.45). However, the recent judgment by the European Court of Justice mentioned above, makes it unlikely that Malta will actually face significant pressure from the European Commission on water pricing issues.

The skills and resources required for the implementation of Article 9 are outsourced as the organizations responsible are internally challenged by a lack of economic expertise. The responsible organizations have a good understanding of what could be done to improve performance of Article 9 requirements (although some non-government respondents claim that the validity of this knowledge is questionable as it is based on weak sectoral analysis). However, this knowledge capacity is poorly

utilised as decisions are made at higher organizational levels which they are accountable to. This is because the recovery of costs for water services is a politically sensitive WFD responsibility. The lack of transparency about water management vision, actions and plans reinforces the non-government organizations' lack of trust in the government's ability to effectively manage water issues. Indeed, the competent authorities are often regarded as agents who simply justify and promote the government's agenda. These affirmations highlight that the public hold the government responsible for WFD implementation and that the competent authorities need to provide stronger and clearer justifications in cases where they do not follow what is commonly regarded as best practice for the water environment. Both government and non-government respondents agree that decisions need to be made in terms of what level of cost recovery the country is aiming for in order to safeguard its water resources and encourage more responsible use of water.

Similarly to the case of Article 8 implementation, there is strong evidence of leadership capacity in the context of Article 9 amongst some private organizations whose economic activity is highly reliant on water. Driven by their need to seek higher economic returns on their activities with the added benefit of fulfilling their corporate social responsibilities, there are examples within the Maltese hospitality and beverage industries where effective measures have been put in place to manage water consumption. These users have sought expertise from their international partnerships as well as local organizations to adopt available technology and seek alternatives to groundwater use. In 2014, the European Commission Directorate General for the Environment awarded funding for a significant development project to the Malta Business Bureau' to improve the dissemination of information about its water conservation initiatives. This is one example of how other organizations can contribute to the work of competent authorities in terms of researching and testing feasible water management options that can be undertaken by the private sector and which could contribute to the overall achievement of the WFD objectives.

The case of public information and consultation (Article 14) is interesting for the observed difference between the level of implementation of this responsibility and the competent authorities' organizational capacity. Malta's high performance in this area is due to 'the active involvement of the relevant stakeholders consulted via internet, media and an international trade fair' (European Commission 2012, p.4). While verifying the high quality of implementation of this responsibility and the competent authorities' capacity to undertake actions in this area (boosted by a twinning project with France during 2009), the evidence base also indicates some on-going challenges.

The consensus view amongst interviewees was that much more investment needs to be made in both the competent authorities and more widely in order to overcome the challenges of conveying water scarcity messages. Such investments will, in turn, help raise awareness by educating citizens about the state of water resources and water management problems in Malta. However, as the WCMP (2011, p.98) highlights, 'the success of this plan relies a great deal on a well-informed public that is [also] willing to contribute to its implementation'. Willingness to participate is important as currently the information and consultation sessions tend to be attended by a regular audience that consistently voices its arguments across the sessions. As a step towards acknowledging the challenges experienced locally, the competent authorities have made use of their organizational memory by carrying out a gap analysis of the 1st WCMP. Evidence shows increased know-how and improved planning of consultation sessions to address specific topics of interest and reach targeted audience. In fact, the use of available and accessible capacity has become more effective as the competent authorities have structured the topics in public information and consultation sessions to reflect the synergies that are present across the various water related responsibilities. Similar to the experiences reported above in relation to Articles 8 and 9, evidence shows that private organizations have supported and contributed towards the fulfilment of Article 14 requirements. Some have taken on initiatives aimed at informing, educating and engaging the public on the water situation in Malta, as well as projects to manage water demand across the domestic and tourism sectors.

Non-government organizations and water service users argue that while improvements have been made, more can be done to foster an effective participatory environment. The current administrative arrangements of consultation sessions are perceived as weak and dissemination of information is argued to be both repetitive and poor in terms of quality and quantity. Public consultation sessions have been used as avenues to promote water use efficiency and conservation rather than to engage the public on more policy-related matters. Participation in the WFD could be more effective if competent

authorities and government organizations become more transparent and provide up-to-date information on the state of implementing the WCMP and relevant measures, as well as efforts to address the ‘discrepancies between water-related information held and/or published by different organizations’ (Water Resources Review 2006, p.65). For instance, more clarification of Malta’s water organizational framework and the legal status of each constituent are needed. However, the competent authorities remain challenged by a lack of human resource capacity and WFD specific skills. For instance, although communication skills are essential for effective implementation of Article 14, these were highlighted as being particularly lacking amongst the competent authorities. Lack of human resources also means the availability of less time to develop and maintain data management systems that structure and verify data sourced from consultation sessions. This has had severe implications for the competent authorities’ ability to reflect on their implementation activities and has limited the integration of learnings and understandings as part of their organizational memory.

5. Discussion

The findings reported above allow us to unpack each of the core components of organizational capacity into a set of sub-components which have particular relevance to the Maltese case. In doing so, the specific areas of success as well as those needing intervention throughout the competent authorities’ WFD implementation experience are uncovered revealing a more complex and multi-dimensional version of the conceptual framework (Figure 3). These findings demonstrate three key learnings about the competent authorities’ organizational capacity. Firstly, the implementation status of WFD responsibilities (the extent to which the required objectives had successfully been achieved, as judged by the European Commission) is not necessarily reflective of the WFD relevant internal organizational capacity which the competent authorities’ possess. Indeed, the experience of Malta corroborates previous literature on organizations and the influences they experience across the institutional frameworks they work in (e.g. North 1990, Hatch 2011). Cases where organizational performance appears to outstrip the competent authorities’ organizational capacity are explained by the supplementary capacity of the larger network of organizations who contribute to the implementation of the WFD tasks. Conversely, as shown in the experience of Article 9 implementation, where organizational performance is lower than the competent authorities’ organizational capacity, political influences can be hypothesised as the intervening factor. Thus, organizational capacity as a construct needs to be understood in the context of both the individual organization and the larger network of organizations of which it forms part. Both institutional levels influence each other, and their relationship shapes both their behaviour as well as their work. This increasingly highlights the importance of Green and Fernández-Bilbao’s (2006) argument that the success of a WFD competent authority highly depends on its ability to influence key actors and establish a forum for the involvement of all relevant stakeholders. Secondly, the results support the idea of the organizational capacity components being highly interlinked and the presence (or lack thereof) of one component having knock-on effects on others within an organization. For instance, the generic literature on organisational capacity identifies a lack of resources as being a critical factor hindering organizations from achieving their objectives (Hall *et al.* 2003, Mostert *et al.* 2007). Evidence shows that the most pressing capacity indicator in Malta is human resources, as the respondents unanimously asserted that the ‘heavily understaffed’ competent authorities are the ‘crux of the problem’. This lack of human resources has prevented the competent authorities from exploiting opportunities available to them, such as using available financial resources to attend training events and hire new personnel, as current employees cannot afford to dedicate time to teaching new recruits. Therefore, these capacities ‘are available but desirable’ as the competent authorities prioritize work and meet the most pressing deadlines with the limited number of people and time available and accessible to them. Interestingly, this means that investing in the skills of current personnel has a lower priority than getting the job done; a tendency that is at odds with work which sees continual investment in organizational learning as necessary for an organization to have the required skillset to do its work (Andreadis 2009). Another example of how organizational capacity components are interlinked is shown in the organisation of an inter-ministerial committee in Malta, which gave direction to the development of the first WCMP. The various ministries sharing water responsibilities became more informed of the

work undertaken by each ministry, and as a result they were able to identify overlaps and improve the alignment of policies. The fitting of individual ministerial responsibilities into the wider Maltese water organization perspective manifested positive knock-on effects across the implementation of obligations under the three focus Articles. Synergies and interlinkages were identified across several European Directives which resulted in more efficient use of available and/or accessible capacity because a culture of sharing capacities was fostered and duplication avoided. Moreover, coordination contributed to reinforcing the integrated water management approach, an aspect which Junier and Mostert (2012) remarked as significant in their analysis of the Netherlands case of implementing the WFD. This example from Malta also supports the argument of Brody *et al.* (2010) that enhancing capacity need not necessarily entail high costs, as informed strategic thinking and cooperation can be inexpensive.

Thirdly, our findings have meaningful implications for how competent authorities plan and manage WFD implementation within a river basin district. An in-depth holistic approach to organizational capacity can clarify the experience of implementing the WFD and enhance the ability of competent authorities to learn from the successes and challenges of others and the corresponding pathways they follow given their organizational capacity. The use of the conceptual framework illustrated in Figure 3 supports a more reflective approach to WFD implementation and serves to enhance the European organizational memory of implementing the WFD across river basin districts. A track record of the organizational capacity pathways of competent authorities presents further opportunity to monitor progress over time and better understand the evolution of WFD implementation.

6. Conclusion

The delivery of the WFD is a major challenge for competent authorities across Europe. This research offers an in-depth and holistic account of the competent authority's organizational capacity to the implementation of three selected WFD responsibilities using a case study approach. Whilst our study's ambition does not draw on the political will of the Maltese government to implement the WFD, nor its political priorities, evidence shows that leadership capacity is heavily determined by the surrounding political environment as it influences the vision of competent authorities and how they influence stakeholders, particularly in the case of recovery of costs for water services. This suggests that supplementing the current organizational capacity of competent authorities would not necessarily translate into more use of capacity. While it may offer more opportunities for enhancing water management at the local level, organizational capacity does not act in isolation. For this reason, we posit that understanding the mechanisms and use of organizational capacity within competent authorities requires an understanding of how it is influenced by the larger water network it forms part of.

Using the conceptual framework developed in this approach allows an all-encompassing exploration of the opportunities to invest and enhance capacity. It highlights how looking at organizational capacity components in isolation limits the exploration of the possible positive or negative ways in which knock-on effects are manifested. Evidence from Malta has highlighted access to resources as being the primary challenge in the implementation experience. Notwithstanding the differences in how the implementation of the WFD is experienced across Europe, some similarities in the development of sub-components are foreseen to match those developed for the case of Malta. The differences are mostly thought to be related to the organizational capacity requirements for the management of shared river basins, as this is a missing aspect in the case of the island state of Malta. The developed conceptual framework can then be used to address issues regarding the sensibility of the implementation expectations a competent authority has based on the combination of its organizational capacity components.

The use of the conceptual framework developed in this paper across other competent authorities contributes to the learning curve of the Directive as the assessment tool allows a standardised exploration of organizational capacity but at the same time it is appreciative of the different implementation experiences. Moreover, it opens up an avenue for interchange of knowledge on organizational capacity possibly through fora such as the Common Implementation Strategy, and gives more transparent and narrative context to the extensive literature on the WFD. More specifically, by understanding and measuring current organizational capacity, it supports policy

makers in identifying the interventions needed to be put in place as well as improve both their quality and quantity.

7. Acknowledgements

The research underpinning this paper was funded by the Malta Government Scholarship Scheme. The authors would also like to thank the interviewees who supported this study with their time and interest.

8. References

- Alaerts, G.J., 2009. Knowledge and capacity development (KCD) as tool for institutional strengthening and change. In: Alaerts, G.J. and Dickinson, N., eds. *Water for a changing world—developing local knowledge and capacity*. London: Taylor and Francis Group, 5-26.
- Andreadis, N., 2009. Learning and organizational effectiveness: a systems perspective. *Performance Improvement*, 48 (1), 5-11.
- Baharein, K. and Noor, M., 2008. Case study: a strategic research methodology. *American Journal of Applied Sciences*, 5 (11), 1602-1604.
- Barman, E. and MacIndoe, H., 2012. Institutional Pressures and Organizational Capacity: the Case of Outcome Measurement. *Sociological Forum*, 27 (1), 70-93.
- Birk, S., et al., 2012. Three hundred ways to assess Europe's surface waters: an almost complete overview of biological methods to implement the Water Framework Directive. *Ecological Indicators*, 18, 31-41.
- Bryan, T.K., 2011. *Exploring the dimensions of organizational capacity for local social service delivery organizations using a multi-method approach*. Thesis (PhD). Virginia Polytechnic Institute and State University.
- Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), 77-101.
- Brody, S.D., Kang, J.E., and Bernhardt, S., 2010. Identifying factors influencing flood mitigation at the local level in Texas and Florida: the role of organizational capacity. *Natural Hazards*, 52 (1), 167-184.
- Brown, P.A., 2008. A review of the literature on case study research. *Canadian Journal for New Scholars in Education/Revue canadienne des jeunes chercheuses et chercheurs en education*, 1 (1), 1-13.
- Brown, M., 2012. Enhancing and Measuring Organizational Capacity: assessing the Results of the U.S. Department of Justice Rural Pilot Program Evaluation. *Public Administration Review*, 72 (4), 506-515.
- Cabezas, F., 2012. The European Water Framework Directive: a framework? *Water Resources Development*, 28 (1), 19-26.
- De Bruin, E.F.L.M., Jaspers, F.G.W., and Gupta, J., 2005. The EU Water Framework Directive: challenges for institutional implementation. In: Vermaat, J., et al., eds. *Managing European Coasts*. Berlin: Springer, 153-171.
- Dolan, T., et al., 2014. Impact of European Water Framework Directive Article 7 on Drinking Water Directive compliance for pesticides: challenges of a prevention-led approach. *Water Policy*, 16 (2), 280-297.
- Dworak, T., et al., 2005. The need for new monitoring tools to implement the WFD. *Journal of Environmental Science and Policy*, 8, 301-306.
- European Commission, 2000. Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy. *Official Journal* (OJ L 327) on 22 December 2000.
- European Commission, 2012. Blueprint to safeguard Europe's water resources – questions and answers [online]. Available from: [http://europa.eu/rapid/press-release MEMO-12-866_en.htm](http://europa.eu/rapid/press-release_MEMO-12-866_en.htm) [accessed 20 January 2016].

- European Commission, 2012. SWD (2012) 379 on the implementation of the Water Framework Directive (2000/60/EC) river basin management plans [online]. Available from: http://ec.europa.eu/environment/water/participation/map_mc/countries/malta_en.htm [Accessed 20 January 2016].
- Eisinger, P., 2002. Organizational capacity and organizational effectiveness among street-level food assistance programs. *Non-profit and Voluntary Sector Quarterly*, 31 (1), 115-130.
- Fereday, J. and Muir-Cochrane, E., 2008. Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5 (1), 80-92.
- Flaspohler, P., *et al.*, 2008. Unpacking prevention capacity: an intersection of research-to-practice models and community-centered models. *American Journal of Community Psychology*, 41 (3-4), 182-196.
- Flyvbjerg, B., 2006. Five misunderstandings about case-study research. *Qualitative Inquiry*, 12 (2), 219-245.
- Food and Agricultural Organization of the United Nations, 2006. Malta water resources review. Rome: Publishing Management Service.
- Franks, T., 1999. Capacity building and institutional development: reflections on water. *Public Administration and Development*, 19, 51-61.
- Frederiksen, P., Mäenpää, M., and Hokka, V., 2008. The Water Framework Directive: spatial and institutional integration. *Management of Environmental Quality: An International Journal*, 19 (1), 100-117.
- Frederiksen, P. and London, R., 2000. Disconnect in the hollow state: the pivotal role of organizational capacity in community-based development organizations. *Public Administration Review*, 60 (3), 230-239.
- Gatt, K., 2004. Quantifying water consumption as a basis for determining its impact on groundwater resources in the Maltese Islands. [online]. Available from: <http://mra.org.mt/wp-content/uploads/2012/08/7.Quantifying-water-consumption.pdf> [Accessed 20 January 2016].
- Germann, K. and Wilson, D., 2004. Organizational capacity for community development in regional health authorities: a conceptual model. *Health Promotion International*, 19 (3), 289-298.
- Goodman, R.M., *et al.*, 1998. Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health Education & Behavior*, 25 (3), 258-278.
- Green, C. and Fernández-Bilbao, A., 2006. Implementing the Water Framework Directive: how to define a 'competent authority'. *Journal of Contemporary Water Research and Education*, 135, 65-73.
- Greenwood, R., *et al.*, 2008. *The Sage Handbook of Organizational Institutionalism*. Sage Publications: London.
- Gudmundsson, H., 2003. The policy use of environmental indicators—learning from evaluation research. *The Journal of Transdisciplinary Environmental Studies*, 2 (2), 1-12.
- Guest, G., MacQueen, K.M., and Namey, E.F., 2011. *Applied thematic analysis*. Thousand Oaks, CA: Sage Publications.
- Hall, M., *et al.*, 2003. *The capacity to serve. A qualitative study of the challenges facing Canada's nonprofit and voluntary organizations*. Toronto: Canadian Centre for Philanthropy.
- Hamdy, A., Abu-Zeid, M., and Lacirignola, C., 1998. Institutional capacity building for water sector development. *Water International*, 23, 126-133.
- Harrow, J., 2001. 'Capacity building' as a public management goal - myth, magic or the main chance? *Public Management Review*, 3 (2), 209-230.
- Hatch, M.J., 2011. *Organizations: a very short introduction*. Oxford: Oxford University Press.

- Haynes, C., Miles, S., and Luck, M., 2014. Monitoring the impact of norms upon organisational performance: a simulation approach. In: Balke, T., et al., eds. *Coordination, organizations, institutions, and norms in agent systems IX*. Heidelberg: Springer International Publishing, 103-119.
- Hering, D., et al., 2010. The European Water Framework Directive at the age of 10: a critical review of the achievements with recommendations for the future. *Science of the Total Environment*, 408 (19), 4007-4019.
- Hodgson, G.M., 2007. Institutions and individuals: interaction and evolution. *Organization Studies*, 28 (1), 95-116.
- Horton, D., et al., 2003. *Evaluating capacity development: experiences from research and development organizations around the world*. Ottawa: ISNAR, CTA, IDRC.
- Ivey, J.L., et al., 2004. Community capacity for adaptation to climate-induced water shortages: linking institutional complexity and local actors. *Environmental Management*, 33 (1), 36-47.
- Junier, S.J. and Mostert, E., 2012. The implementation of the Water Framework Directive in the Netherlands: does it promote integrated management? *Physics and Chemistry of the Earth Parts A/B/C*, 47-48, 2-10.
- Kayaga, S., Mugabi, J., and Kingdom, W., 2013. Evaluating the institutional sustainability of an urban water utility: a conceptual framework and research directions. *Utilities Policy*, 27, 15-27.
- Kelly, M., 2014. Simplicity is the ultimate sophistication: building capacity to meet the challenges of the Water Framework Directive. *Ecological Indicators*, 36, 519-523.
- Lafond, A.K., Brown, L., and Macintyre, K., 2002. Mapping capacity in the health sector: a conceptual framework. *International Journal of Health Planning and Management*, 17 (3), 3-22.
- Leidel, M., Niemann, S., and Hagemann, N., 2012. Capacity development as a key factor for integrated water resources management (IWRM): improving water management in the Western Bug River Basin, Ukraine. *Environmental Earth Sciences*, 65 (5), 1415-1426.
- Lessik, A. and Michener, V., 2000. *Measuring institutional capacity. Recent practices in monitoring and evaluation tips*. Washington: USAID Centre for Development Information and Evaluation.
- Liefferink, D., Wiering, M., and Uitenboogaart, Y., 2011. The EU Water Framework Directive: a multi-dimensional analysis of implementation and domestic impact. *Land Use Policy*, 28, 712-722.
- Lundmark, C. and Jonsson, G., 2014. Prospects for learning in river management: exploring the initial implementation of the Water Framework Directive in a Swedish river basin. *Environmental Education Research*, 20 (2), 161-176.
- Lusthaus, C., et al., 2002. *Organizational assessment: a framework for improving performance*. Ottawa, ON and Washington, DC: International Development Research Centre and Inter-American Development Bank.
- MacDonald, M.L., 1996. Bias Issues in the utilization of solid waste indicators. *Journal of the American Planning Association*, 62 (2), 236-242.
- McKinsey & Company. 2001. *Effective capacity building in nonprofit organizations*. Washington, DC: Venture Philanthropy Partners.
- McNair, C.J. and Vangermeersch, R., 1998. *Total capacity management: optimizing at the operational, tactical, and strategic levels*. Florida: CRC Press.
- Meyer, J.W. and Rowan, B., 1977. Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology*, 83 (2), 340-363.
- Meyer, A.M., Davis, M., and Mays, G.P., 2012. Defining organizational capacity for public health services and systems research. *Journal of Public Health Management and Practice*, 18 (6), 535-544.

- Ministry for Resources and Rural Affairs, 2012. A water policy for the Maltese Islands. Floriana: Ministry of Resources and Rural Affairs.
- Misener, K. and Doherty, A., 2009. A case study of organizational capacity in non-profit community sport. *Journal of Sport Management*, 23 (4), 457-482.
- Moren-Abat, M. and Rodríguez-Roldán, A., 2012. The Challenges of implementing the Water Framework Directive in Spain. *International Journal of Water Resources Development*, 28 (1), 13-18.
- Moss, B., 2008. The Water Framework Directive: total environment or political compromise? *Science of the Total Environment*, 400 (1), 32-41.
- Moss, T., *et al.*, 2009. Organizing water: the hidden role of intermediary work. *Water Alternatives*, 2 (1), 16-33.
- Mostert, E., *et al.*, 2007. Social learning in European river-basin management: barriers and fostering mechanisms from 10 river basins. *Ecology and Society* [online], 12 (1). Available from: <http://www.ecologyandsociety.org/vol12/iss1/art19/> [Accessed 20 January 2016].
- Mustapa, I.R., Ghazali, N.A.M., and Mohamad, M.H.S., 2014. The moderating influence of organizational capacity on the association between corporate governance and corporate performance. *Procedia – Social and Behavioral Science*, 164, 76-83.
- National Audit Office, 2012. Performance audit: safeguarding Malta's groundwater. Floriana: National Audit Office.
- North, D.C., 1990. *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.
- Petersen, T., Bernd, K., and Manstetten, R., 2009. The environment as a challenge for governmental responsibility – the case of the European Water Framework Directive. *Ecological Economics*, 68 (7), 2058-2065.
- Phillips, G., 2014. Progress towards the implementation of the European Water Framework Directive (2000-2012). *Aquatic Ecosystem Health and Management*, 14 (4), 424-436.
- Sharpe, E.K., 2006. *Resources at the Grassroots of Recreation: Organizational Capacity and Quality of Experience in a Community Sport Organization*. Leisure Sciences: An Interdisciplinary Journal, 28 (4), 385-401.
- Stake, R.E., 1995. *The art of case study research*. Thousand Oaks, CA: Sage.
- Sustainable Energy and Water Conservation Unit Order, 2014. [online]. Available from: <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=12154&l=1> [Accessed 20 January 2016].
- Sustainable Energy and Water Conservation Unit, 2015. Environmental objectives and exemptions. 2nd RBMP Consultation Meeting. 25th September 2015. [online]. Available from: <https://drive.google.com/folderview?id=0BzKiit7NebRabXYtbGp4YXllMFEE&usp=sharing> [Accessed 16 March 2016].
- The Water Catchment Management Plan, 2011. [online]. Available from: <http://www.mepa.org.mt/topic-wcmp> [Accessed 20 January 2016].
- Timmer, D.K., De Loe, R.C., and Kreutzwiser, R.D., 2007. Source water protection in the Annapolis Valley, Nova Scotia: lessons for building local capacity. *Land use policy*, 24 (1), 187-198.
- Ting, M.M., 2011. Organizational capacity. *The Journal of Law, Economics and Organization*, 27 (2), 245-271.
- The Today Public Policy Institute, 2015. Why Malta's National Water Plan requires an analytical policy framework. Valletta: The Today Public Policy Institute.
- Tropp, H., 2007. Water Governance: trends and needs for new capacity development. *Water Policy*, 9 (2), 19-30.

- Quevauviller, P., Borchers, U., and Gawlik, B.M., 2007. Coordinating links among research, standardisation and policy in support of water framework directive chemical monitoring requirements. *Journal of Environmental Monitoring*, 9 (9), 915-923.
- Van der Heijden, J., *et al.*, 2014. Contrasting stories on overcoming governance challenges: the implementation of the EU Water Framework Directive in the Netherlands. *Local Environment*, 19 (3), 318-333.
- Water Policy Framework Regulation, 2004. Legal Notice 194 of 2004 [online]. Available from: <http://mra.org.mt/wp-content/uploads/2012/08/20.Water-Policy-Framework-Regulations.pdf> [Accessed 20 January 2016].
- Yin, R.K., 1984. *Case study research: design and methods*. Beverly Hills, CA: Sage.

Figure 1.

Figure 2.

Figure 3.

Table 1: Unpacking organizational capacity: how conceptualizations of organizational capacity found in literature have informed the formation of five components for organizational capacity of WFD competent authorities.

Literature source	Components of organizational capacity reported	Synthesized components of organizational capacity	Definition of organizational capacity component
Meyer <i>et al.</i> 2012	System boundaries and size, governance and decision making structure	Legal authority	Refers to the specification in national law of the roles and responsibilities an organization has as part of its mission and mandate.
Ting 2011	Allocation of personnel		
McKinsey & Company 2001	Organizational structure		
Lusthaus <i>et al.</i> 2002	Organizational structure		
Brown 2012	Board of directors and governance		
LaFond <i>et al.</i> 2002	Organizational structure		
Meyer <i>et al.</i> 2012	Data and informational resources	Information and knowledge	An organization's ability to (i) create knowledge from the understanding of collective information carrying some meaning or purpose that has been formulated from aggregate data, (ii) retain knowledge as part of its memory and with a system
Ting 2011	Research		
Brody <i>et al.</i> 2010	Technical expertise, data		
Bryan 2011	Knowledge		

			in place for easy retrieval, (iii) and transfer of knowledge so that lessons learned from its own experiences as well as that of others are used to inform not only its present and future work but also that of other organizations.
Ting 2011	Training, data collection, development of technology	Skills	Refers to the specific individual and communal understandings and competencies an organization possesses which enable it to perform tasks. An organization's skillset is strongest when it reflects the organization's responsibilities and objectives.
McKinsey & Company 2001	Organizational skills		
Brody <i>et al.</i> 2010	Communication and information sharing		
Brown 2012	Evaluation		
Meyer <i>et al.</i> 2012	Fiscal and economic, workforce and human resources, physical infrastructure	Resources	Refers to the capital, time, workforce and materials needed for an organization to fulfil its mandate. Lack of resources tends to be the key critical factor hindering an organization from achieving its objectives.
McKinsey & Company 2001	Human resources, systems and infrastructure		
Brody <i>et al.</i> 2010	Financial resources, staffing		
Fredericksen and London 2000	Fiscal planning and practice, operational support		
Hall <i>et al.</i> 2003	Financial and human resources		
Bryan 2011	Human resources, financial resources, information technology		
Lusthaus <i>et al.</i> 2002	Organizational infrastructure, financial management		
Brown 2012	Resources		
LaFond <i>et al.</i> 2002	Finances, supplies, infrastructure, human resources		
Meyer <i>et al.</i> 2012	Inter-organizational relationships, organizational culture	Leadership	An organization's ability to understand its mandate, where it is heading and how to get there with consideration of the other capacity components. It
McKinsey & Company 2001	Aspirations, strategy, culture		

Brody <i>et al.</i> 2010	Leadership, commitment, teamwork, planning		therefore incorporates the organization's vision and direction including coordination, management and planning of the organization's work, and a strategy for fulfilling the assigned responsibilities.
Fredericksen and London 2000	Leadership and vision, management and planning		
Hall <i>et al.</i> 2003	Structural (relationship and network, infrastructure and process, planning and development)		
Bryan 2011	Stakeholder commitment, collaboration		
Lusthaus <i>et al.</i> 2002	Strategic leadership, programme and service management, process management, inter-organizational linkages		
Brown 2012	Management and operations, key allies, program planning and implementation		
LaFond <i>et al.</i> 2002	Mission, leadership, history and culture		

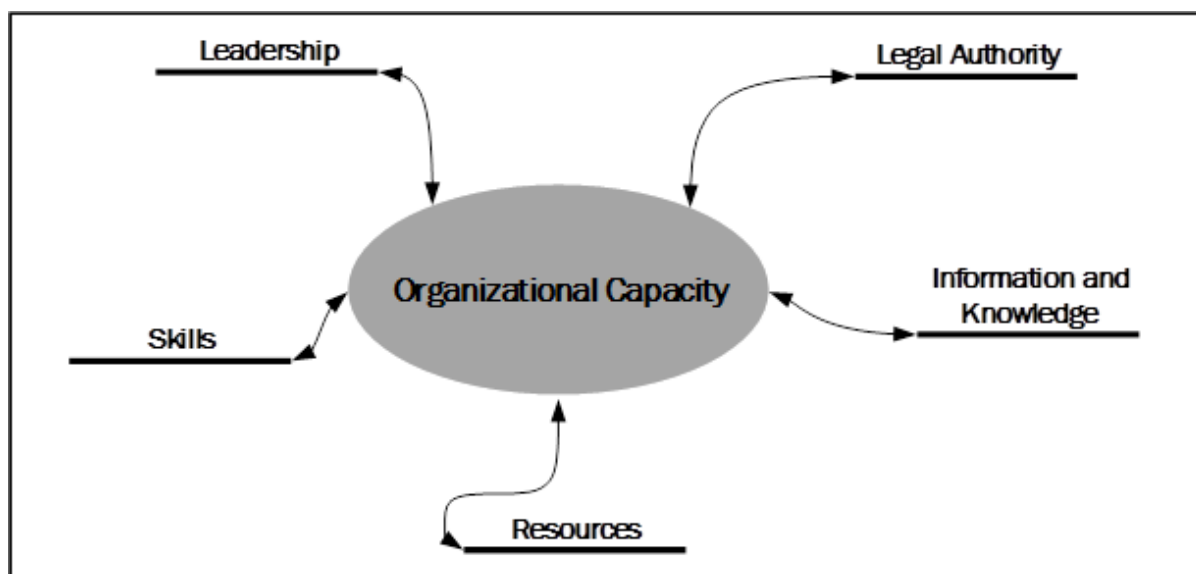
Table 2: Evidence sourced from Maltese policy documents.

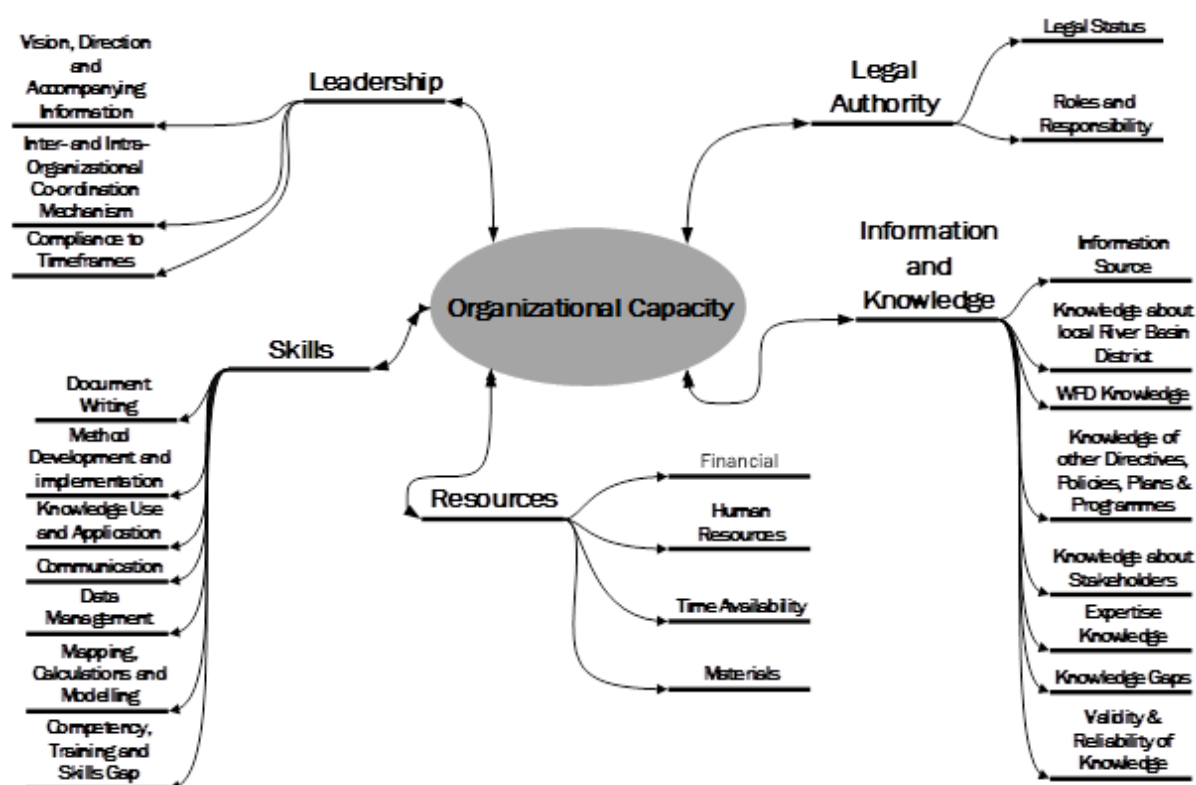
Document title	Author(s)	Year
Quantifying water consumption as a basis for determining its impact on groundwater resources in the Maltese Islands	Gatt	2004
Water resources review	Food and Agricultural Organization of the United Nations	2006
The Water Catchment Management Plan for the Maltese Islands	Malta Environment and Planning Authority	2011
A water policy for the Maltese Islands	Ministry for Resources and Rural Affairs	2012
Safeguarding Malta's groundwater	National Audit Office	2012
Why Malta's national water plan requires an analytical policy framework	The Today Public Policy Institute	2015

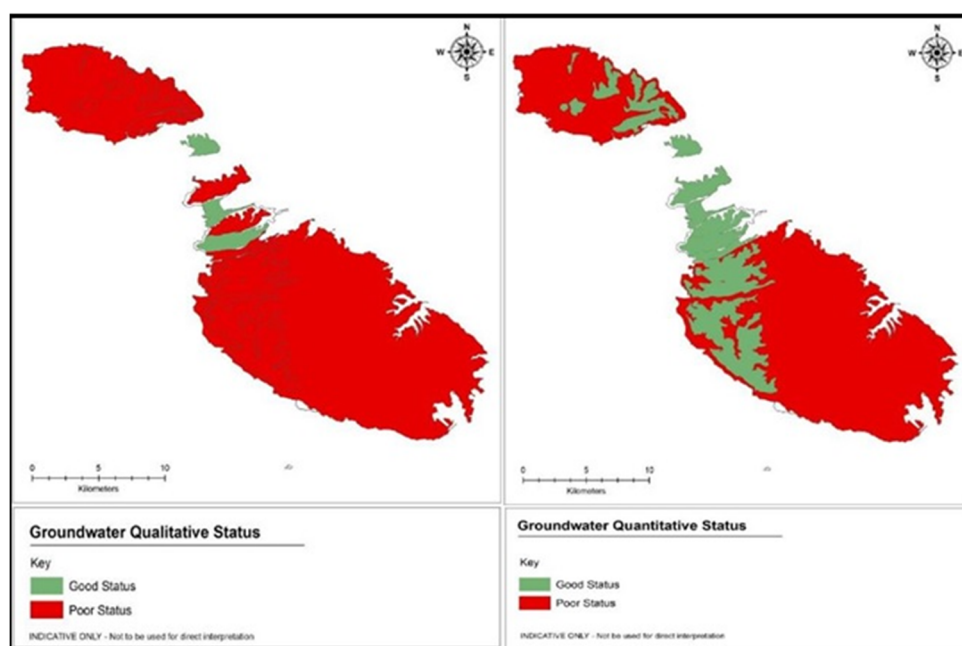
Table 3: Capacity profile of the Maltese competent authorities in implementing three WFD responsibilities.

WFD Responsibilities	Implementation Status	Capacity Component	Capacity Status	Overall Organizational Capacity Status
<u>Article 8</u> Monitoring of surface	Moderate	Legal Authority	Moderate	Moderate
		Information and	High	

water status, groundwater status and protected areas		Knowledge		
		Skills	Low	
		Resources	Moderate to Low	
		Leadership	Moderate	
Article 9 Recovering Costs of Water Services	Low	Legal Authority	Moderate	Moderate
		Information and Knowledge	High	
		Skills	Moderate	
		Resources	Low	
		Leadership	High	
Article 14 Public Information and Consultation	High	Legal Authority	Moderate	Moderate
		Information and Knowledge	Moderate	
		Skills	Moderate to Low	
		Resources	Low	
		Leadership	High	









DSPACE

<https://dspace.org/>

Unpacking organizational capacity in the context of the Water Framework Directive

Xerri, Francesca; Jeffrey, Paul; Smith, Heather M.

2016-06-13

Taylor & Francis

<http://dx.doi.org/10.1080/15715124.2016.1193508>

F. Xerri, P. Jeffrey and H.M. Smith, (2016) Unpacking organizational capacity in the context of the Water Framework Directive, International Journal of River Basin Management, 2016, Volume 14, Issue 3, pp317-327