

# Barriers to, and Recommendations for, Sustainable Water Usage within the Malta Tourism Policy (2015-2020)

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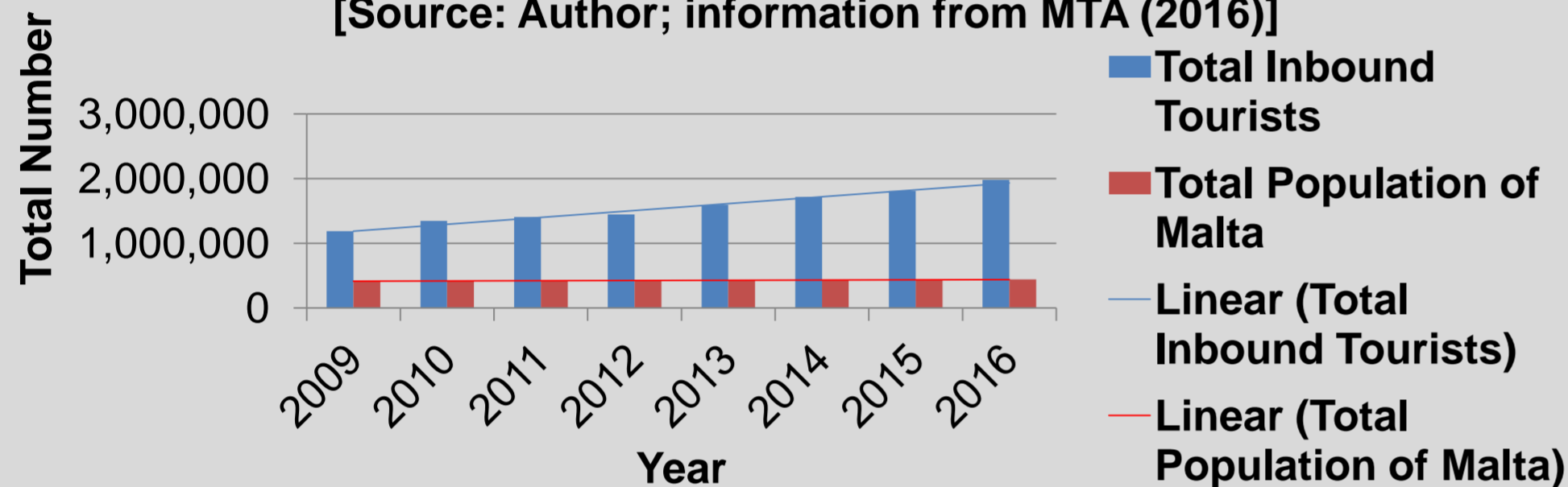
## Abstract

This research poster examines the policy management challenges of water scarcity, limited natural recharge in underground water-bearing rocks (aquifers) and water removal from groundwater sources (abstraction) within regions of concentrated tourism development in the Mediterranean Basin. Focusing upon water scarcity in Malta, this poster seeks to examine the barriers to, and recommendations for, sustainable water usage within the Malta Tourism Policy (MTP) (2015-2020). The research methodology employed consists of a systematic literature review and semi-structured interviews with government officials, key Maltese environmental NGOs and private sector stakeholders. The findings suggest the dichotomy of supply and demand is a key influence upon Maltese water scarcity. This research recommends greater integration between the environmental, socio-cultural and economic pillars of sustainability in the future augmentation of tourism policy, facilitating intergenerational equity and community participation across Maltese stakeholder groups.

## (1) Introduction

- Tourism remains an important Maltese sector of robust growth, contributing to 26.7% of total GDP and 15.5% of total employment, whilst attracting approximately 1.98 million tourists in 2016 (Figure 1) (MTA, 2016).
- Nevertheless, abstraction levels in regions of concentrated tourism development pose policy management challenges (Tekken & Kropp, 2015; Hadjikakou et al. 2013).
- Whilst local inhabitants utilise 800L per capita per day, tourist water consumption exceeds 2425L per capita per day (Gössling et al. 2012).
- Hence, with an estimated 20% reduction in Mediterranean Basin rainfall anticipated from 2071 to 2100, adaptation measures for freshwater availability appear vital within future Maltese tourism policies (Gabarda-Mallorquí et al. 2017; Re et al. 2014).

Figure 1: Growth in inbound tourist and total population in Malta between 2009 and 2016 [Source: Author; information from MTA (2016)]



## (2) Research Location



## (3) Research Questions

- What are the barriers to sustainable water usage within the Malta Tourism Policy (2015-2020)?
- What recommendations could be implemented to aid sustainable water usage within the Malta Tourism Policy (2015-2020)?

## (4) Research Methods

### 3.1 Systematic Literature Review:

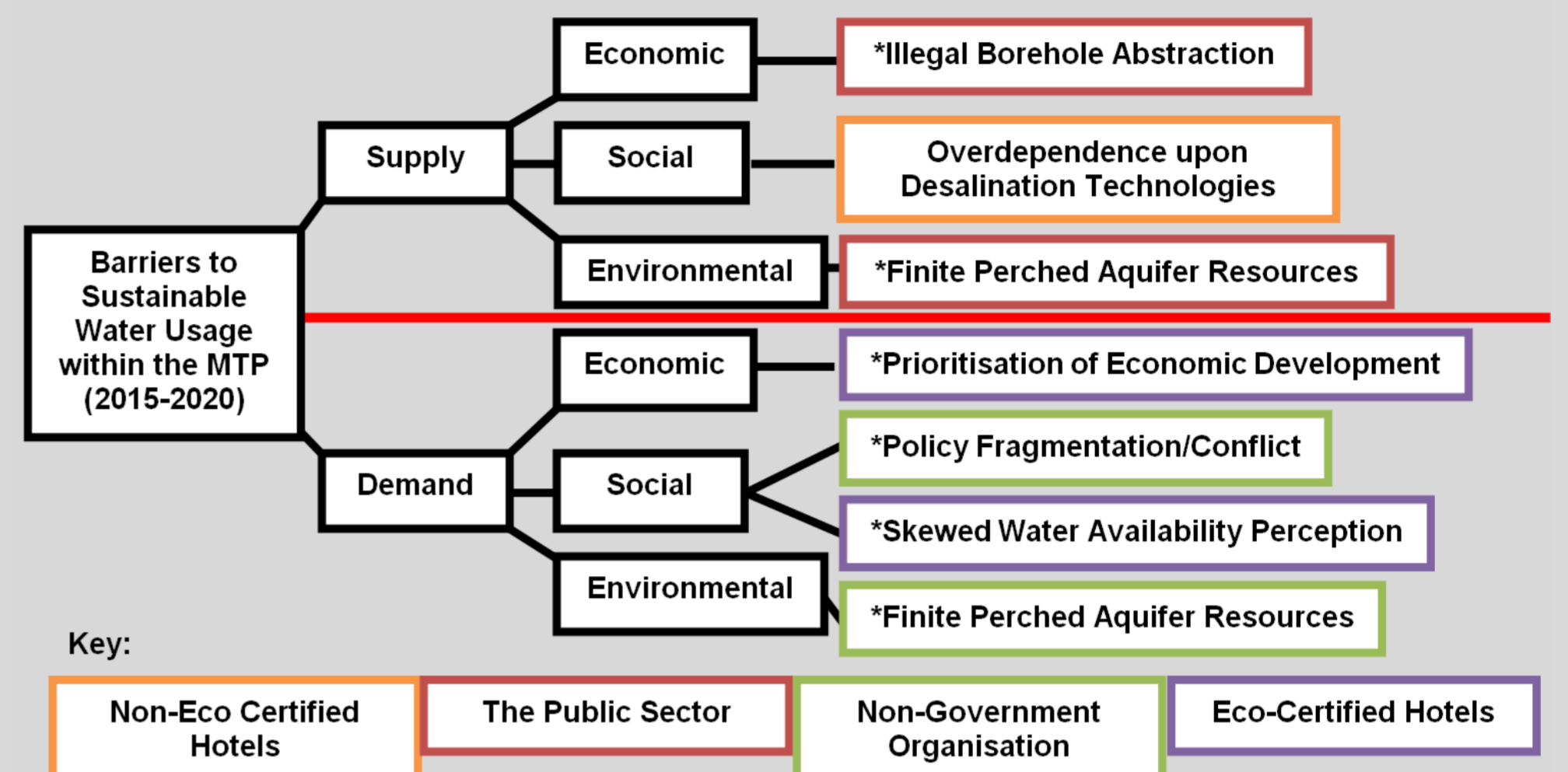
- Overall, of the 1,902 academic sources identified, 45 peer reviewed journal articles examining water management, stress and scarcity in Malta were retained for review.

### 3.2 Key Informant Interviews:

- Five semi-structured interviews were undertaken to interpret barriers rooted within Maltese culture. Key informants included: a Maltese government representative; the President of a Maltese NGO; hotel management; and an administrator for a Reverse Osmosis Plant. *Open*, *axial* and *selective* coding categorised relationships between the identified themes, whilst *purposive sampling* aided insight into Maltese tourism.

## (5) Results and Data Analysis

Figure 2: Tree Diagram of Barriers to Sustainable Water Usage [Source: Author]. Note: \* indicates a primary code.



Key:



Figure 3: Key Informant Quotations [Source: Author]

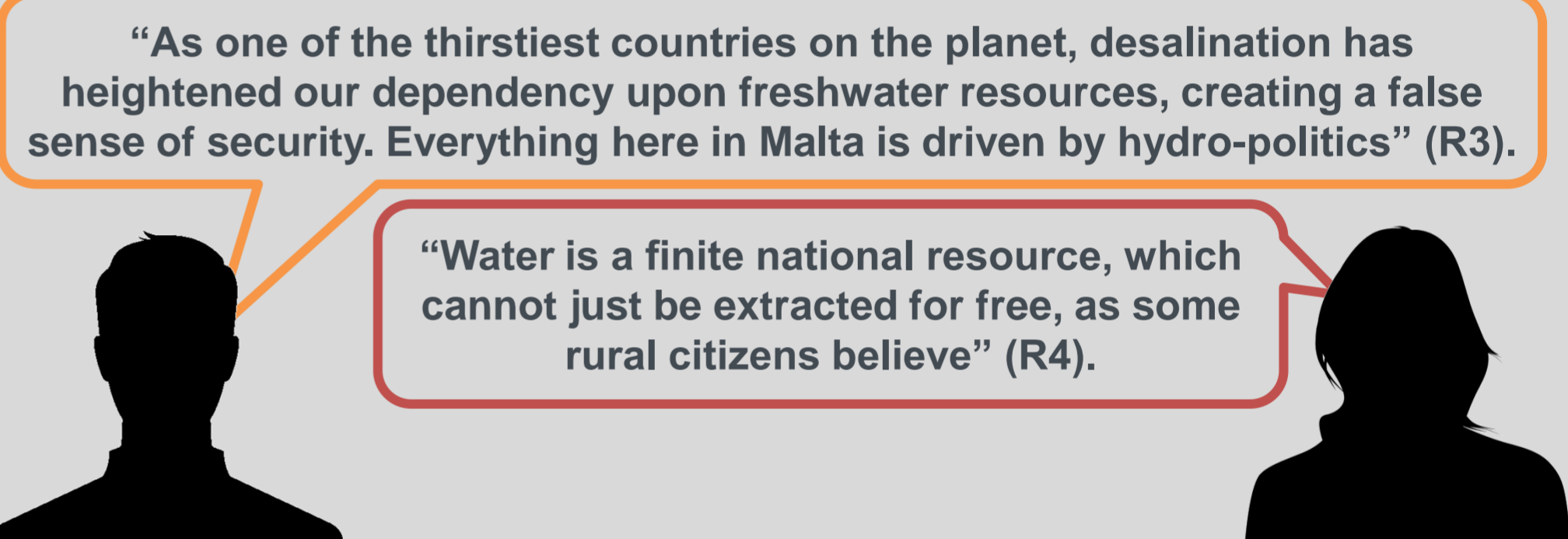
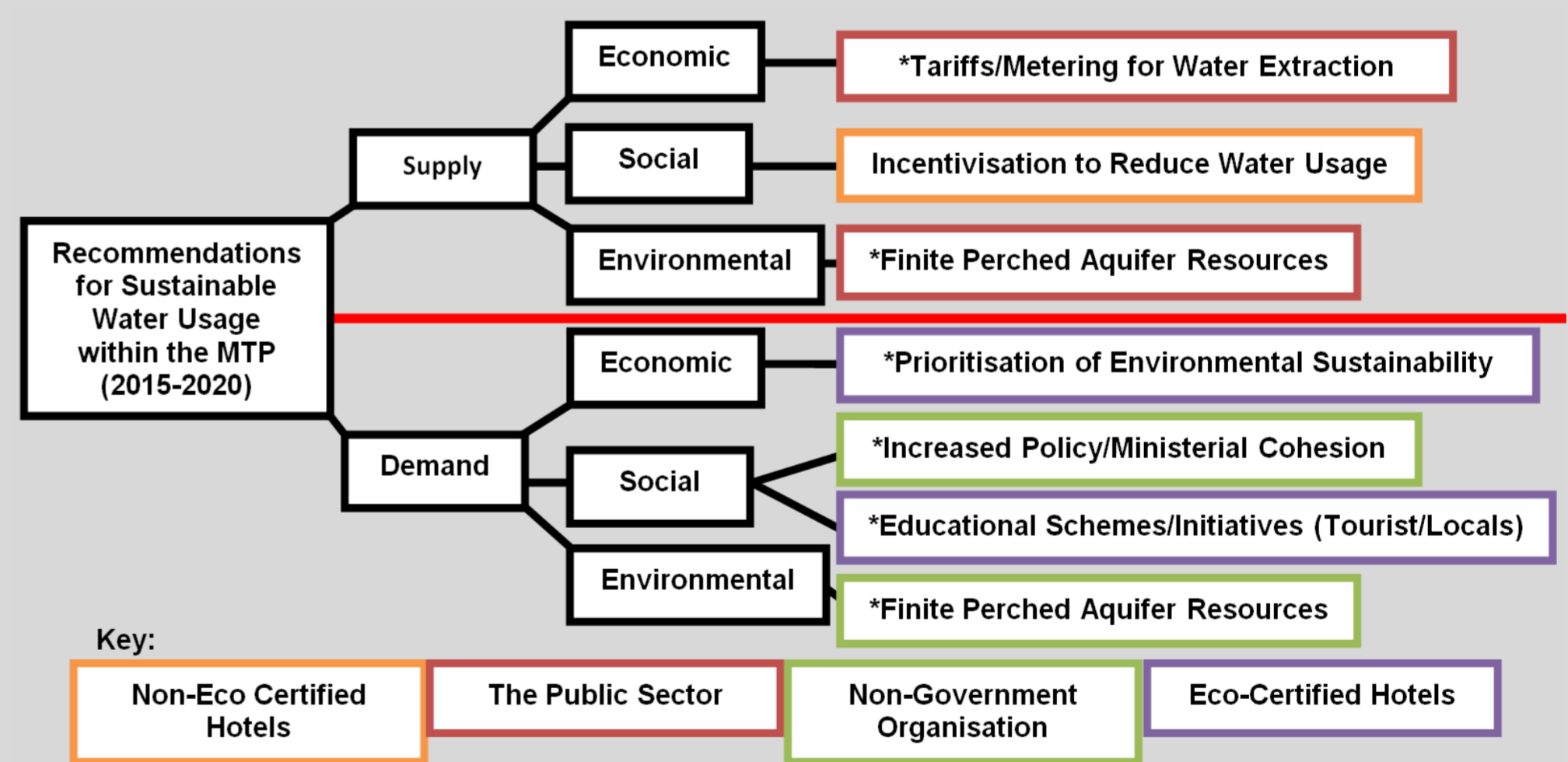


Figure 4: Tree Diagram of Recommendations for Sustainable Water Usage [Source: Author]. Note: \* indicates a primary code.



Key:



## (6) Conclusion

- The research findings suggest a stakeholder dichotomy exists between *supply* and *demand* orientated barriers and recommendations towards the MTP (2015-2020).
- Whilst eco-certified hotels and NGOs focus upon sustainable regeneration capacities orientated around freshwater *demand*, the public sector and non-eco-certified hotels prioritise illegal abstraction orientated around freshwater *supply*.
- Recommendations to mitigate ineffective governance in tourism policy could prove fruitful across broader global scales, with islands such as the Seychelles and Mauritius also exposed to water scarcity and tourism development pressures.
- Implications for the UK government include the development of ambitious strategies and policies to mitigate water *supply* deficits induced through future climate change.

## (7) References

Gabarda-Mallorquí, A., García, X. & Ribas, A. (2017). 'Mass tourism and water efficiency in the hotel industry: A case study'. *Hospitality Management*. 61. Pp 82-93.  
 Gössling, S., Peeters, P., Hall, C. M., Ceron, J. P., Dubois, G., Lehmann, L. & Scott, D. (2012). 'Tourism and water use: Supply, demand, and security: an international review'. *Tourism Management*. 33(1). Pp 1-15.  
 Hadjikakou, M., Chenoweth, J. & Miller, G. (2013). 'Estimating the direct/indirect water use of tourism in the eastern Mediterranean'. *Environmental Management*. 114. Pp 548-556.  
 MTA (Malta Tourism Authority). (2016). *Tourism in Malta: Facts and Figures 2016*. [Pdf]. Available at: <<http://www.mta.com.mt/loadfile.ashx?id=f9450553-1787-486f-bcc1-ab7c4c90fb70.pdf>>. [Accessed 13/09/2017].  
 Re, V., Sacchi, E., Mas-Pla, J., Menció, A. & El Amrani, N. (2014). 'Identifying the effects of human pressure on groundwater quality to support water management strategies in coastal regions: A multi-tracer and statistical approach (Bou-Areg region, Morocco)'. *Science of the Total Environment*. 501(1). Pp 211-223.  
 Tekken, V. & Kropp, J. P. (2015). 'Sustainable water management- perspectives for tourism development in north-eastern Morocco'. *Tourism Management Perspectives*. 16. Pp 325-334.

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