

Development of a GIS Story Map for Improved Communication of the ERANETMED CrITERIA Project Results on Cr(VI)-Impacted Water Bodies of the Mediterranean

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Geographic Information Systems (GIS) is an upcoming digital technology, which provides the opportunity to share geospatial data globally. This key feature makes it essential for the communication between the (geo)scientific world and the general audience. Story Maps are an innovative communication technique developed by ESRI[®] (2012) and achieved a breakthrough in this field. They are interactive maps that combine multimedia content and text that can be displayed on various screen sizes. Individuals have constantly wanted to include geographic information into their lives for things as locating discoveries or registering property (Sui and Goodchild, 2001). GIS Story Maps combine geospatial data with photos, video, audio, and text to visualise a theme or sequential events. Therefore, a Story Map contributes to spatial organisation of GIS data in a reading-pleasant way, while it is widely available in a cloud-based software platform (ArcGIS Online) accessible by anyone, beyond institutions, on the World Wide Web (Scott *et al.*, 2016). Thus, it is a tool for public engagement as it can effortlessly be shared via social media or embedded within a website.

One of the objectives of the ERANETMED CrITERIA project is to provide a dialogue platform for public or private water managers and local communities of areas where the groundwater resources are impacted by hexavalent Cr, mainly as a result of the geological setting. Such areas in central-eastern Mediterranean region and Oman are included as case studies in the project. The ultimate aim is to guide water stakeholders towards a sustainable way of water usage by taking into account water pressures as well as climate change (Pyrgaki *et al.*, 2018). Extended water sampling and analysis have been implemented in the study areas on a seasonal basis and have provided a rich data set with respect to water quality data. These have subsequently been interpreted in conjunction with the European Union water standards, as well as other factors including precipitation and land use. Within this context a Story Map is being developed in order to accommodate the produced data in a comprehensive way and present them in a memorable and compelling character that combines analytical and artistic characteristics.

The creation of the Story Map involved selection of a template appropriate for the end recipients and an interesting, memorable and comprehensive title. Then, a proper base map had to be chosen, in which various layers can be added depending on what is analysed. Specifically, a global terrain map has been selected and information layers concerning geology, sampling points, boreholes, urban/industrial/rural areas have been added. Symbols on the map are explained either on a legend or in text. Also, multiple graphs, additional maps and other data have been adjusted on the story, such as in the form of carefully designed custom pop ups. These included Piper diagrams with explanation of water type and links to geology, climate concerning charts, elemental concentration ratios, and historical statistics whenever available. Furthermore, hyperlinks for videos, websites and email addresses have been added to provide all necessary information to concerned stakeholders.

All of the above, aim to provide helpful information to the local stakeholders and water managers. Story Maps act as a valuable tool, able to bring people closer to the GIS technology and its capabilities, more to draw their attention on a specific issue like the water administration and awaken them from vital issues' unawareness.

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