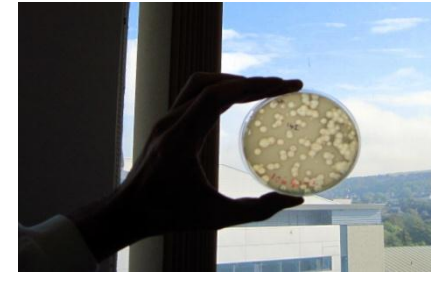
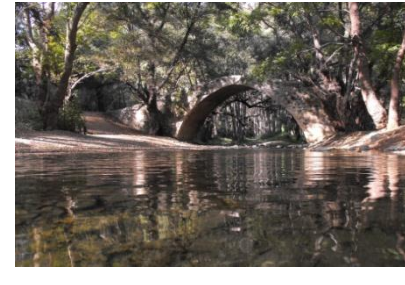


Advanced Aquatic Tools for Sustainable Pollution Risk Management in River Basins of Cyprus

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**BACKGROUND**

Adaqua represents an innovative, multi-disciplinary approach to the requirements of new environmental management tools to support River Basin Management Plans of member states under the European Union Water Framework Directive (WFD). In addition to supporting improved environmental conservation and management measures, the project's outcomes will help protect human health, through the provision of new knowledge and competences for microbial hazard assessment in support of future Cypriot 'Drinking Water Safety Plans' as advocated by the World Health Organization. In recognition of the limited available data of watershed's responses to climatic changes; as well as holistic management of the watershed itself, the ADAQUA project integrates novel and established monitoring techniques, to encompass the targets of WFD's goals and propose mitigation measures to the forthcoming climate changes impacts.

**AIM**

Provide Cypriot stakeholders and end-users with novel practical environmental tools to support the prediction and management of river water pollution problems in Cyprus, through the ground-truthing and integration of appropriate newly-emerging ecological, microbiological and hydrological methods into an environmental and human health protection instrument that will respond to future changes in climate, land-use, river hydrology as well as point and diffuse pollution sources. The watershed hazard maps will be used as a decision support system for integrated water resources management, to facilitate the implementation of RBMP

**OBJECTIVES**

- To develop and disseminate ecological assessments of the pilot watersheds, focusing on benthic macroinvertebrate communities and their response to environmental stresses;
- To develop and disseminate microbial source tracking (MST) assessments to distinguish sources of faecal pollution in response to environmental stresses
- To build and disseminate responsive watershed pollution hazard maps, integrating the above approaches to land-use and hydrological information.

**STUDY CATCHMENTS**

- Limnatis River (Limassol district-Cyprus)
- Garyllis River (Limassol district-Cyprus)

Reflect the diversity of pollution sources (livestock, agriculture, domestic wastewater, landfill) and water uses (irrigation and potable water supplies). The Garyllis has been selected with reference to the WFD, as it was identified being at risk of non-compliance with the WFD's requirement for 'good ecological status' by 2015. The Limnatis has been selected as a sentinel watershed to study how new environmental tools can support the implementation of future 'Drinking Water Safety Plans' in Cyprus, as the river supplies Kouris reservoir, from which water is abstracted and treated prior to human consumption.

**METHODOLOGY**

**Sampling:**  
15 sampling points distributed along each catchment.  
- Bi-weekly and monthly  
-Event- triggered sampling

**Microbiological Parameters:**  
-*Escherichia coli*  
- Intestinal enterococci  
- Somatic coliphage  
- Human specific phages of *Bacteroides* GB-124

**Physicochemical Parameters:**  
-Temperature  
-Conductivity  
-Turbidity  
-pH  
-Dissolved Oxygen

-Nitrate  
-Ammonia  
-Phosphate  
-TOC  
-BOD

Water Quality Assessment Components

