



The Role of Ephemeral Rivers in Semi-Arid, Historic, Urban Environments - The Case of the Pedieos River in Nicosia

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Rivers in urban environments

- Development of civilisations along river banks e.g. the Yangtze (China), the Nile (Egypt) and the Harappa (Indus)
- Industrial revolution and population increase led to quality decline
- First European water legislation developed in the mid 1970s to clean up rivers



River Management

- EU Water Framework Directive – River Basin Districts
- Restoration projects have been carried out worldwide
- Rivers can play an effective role in the management of urban environments



Ephemeral Rivers

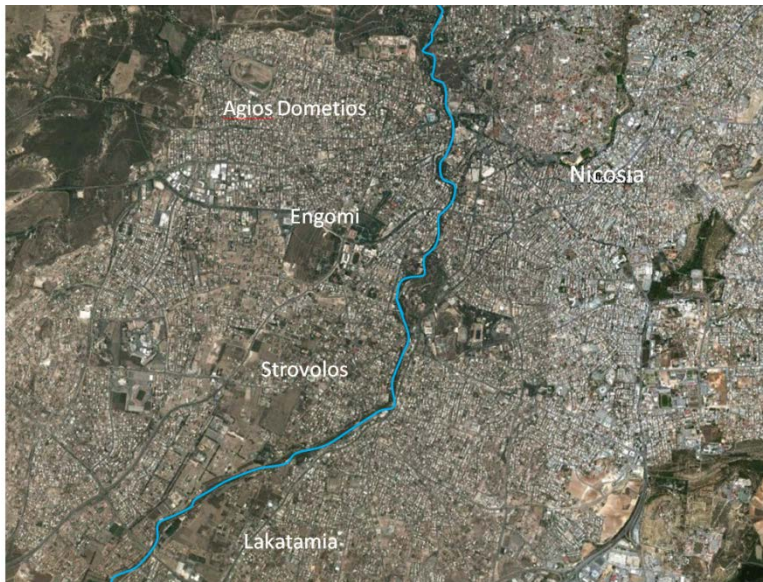
- Ephemeral and intermittent rivers are the prevalent types in arid and semi-arid regions
- Ephemeral rivers flow for short periods after rainfall events, intermittent rivers are seasonal related
- Difficult to study and unpractical to monitor, thus ignored
- River space needs to be considered for runoff flow
- The space of ephemeral rivers can be utilised



Research objective

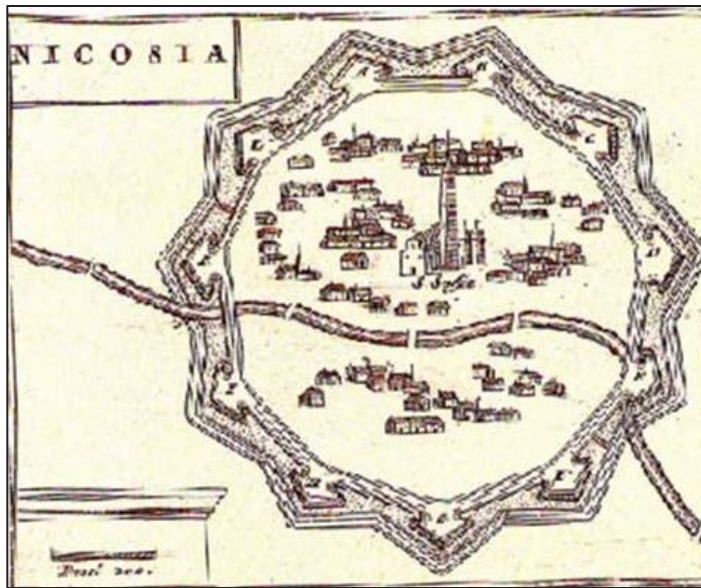
To assess the past, current and future role of the Pedieos River in Nicosia, Cyprus

- Review the historical contribution of the river to the town
- Examine and analyse the policies related to its management
- Design a SUD system for runoff reduction in a flood prone area
- Assess the contribution of the river's green corridor

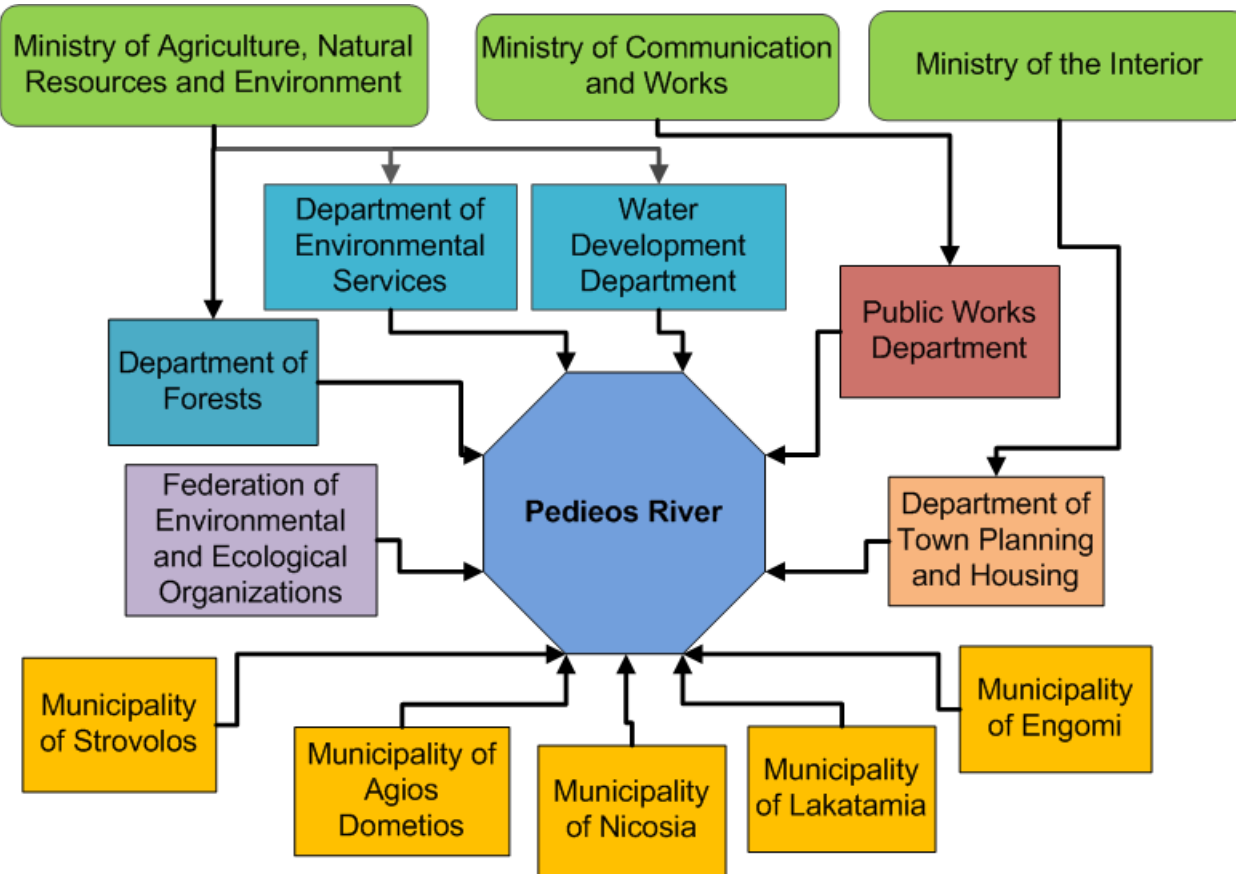


Nicosia and the Pedieos

- 3000 BC – 1st Settlement in Nicosia
- 16th C – construction of walls and diversion of river
- End of 19th C – conversion of river bed into commercial street
- 1963, 1974 – Establishment of “Green line” and division
- 2002 – Damming of the river upstream



Pedieos River Management



Stormwater Management

- Flash flooding prevalent in the Mediterranean region
- Inadequate and old drainage networks and increase of impermeable areas lead to increase runoff
- Application of the EU Floods Directive currently taking place
- Flood modelling carried out for flood prone areas



Urban cooling

- River environment can act as an ecosystem service
- Pedieos park is already an attraction to residents
- Rivers provide the ideal environment for the creation of green areas
- Enhancement of the park may provide extension of the cooling effect
- Comparison of temperatures in the park and in the town centre



Outcomes

- **An analytical assessment of the Pedieos River's current and possible contribution to the urban environment of Nicosia**
- **An understanding of the multi-faceted role ephemeral rivers could have in the management of urban environments in similar regions**

Thank you!

