



***VI EUROLAG & VII LAGUNET  
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***ABSTRACT BOOK***



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different impacts on the hydrological dynamics in the lagoon and thus have also influenced the freshwater lens, which constitutes the key element for the durability of the Ramli system. The situation may become more complicated in view of sea level rise and it is particularly important that the local farmers, i.e. the fellahs, are correctly informed and trained to cope with the changing situation.

The situation is particularly difficult as the threats to the area, and especially for the Ramli Culture, are already increasing for socio-economic reasons. This has been revealed by socio-economic polls, i.e. particularly by the questions related to tendencies, environmental perception by the local population, attachment of local populations to their territories and questions related to existing and expected future problems. Problems that are already encountered by the landowners include low yields, cost of labour, lack of materials requested for maintaining and renovating soil qualities. In addition, threats are related to the socio-demographic characteristics of these populations, which in at least a part of the territory express a new perception of spatial use privileging touristic developments at the expense of farming and fishing activities. Contributions to a solution can be found in part among the land users in particular among the older people, who are both landowners and natives of the region. The polls have shown that these landowners have been able to adapt the exploitation techniques to the changing environmental conditions, and that younger people also may possess this savoir-faire. However, the population that has strong links of attachment and a traditional perception of this environment are becoming rarer.

This work tries to make some recommendations on how to prevent further degradation of this territory and how to conserve its originality and attractiveness.

### **S5.7 Acquatina Lagoon: a model ecosystem to study community patterns**

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Acquatina is a small lagoon ecosystem (0.45 km<sup>2</sup>) located on the Adriatic coast only 5 km north of Lecce (Italy). The lagoon has a freshwater input in the northern part and a connection with the sea at the south edge, being characterised by a latitudinal gradient of salinity and an internal patchiness of habitats. Here, we have used the lagoons as a model to study the influence of these sources of variation on the spatial distribution of macrobenthos and fish fauna, using both taxonomic and on taxonomic descriptors.

Results showed a non random distribution of both species and functional traits of macroinvertebrate and fish fauna within the lagoon, despite the relatively small surface area. Salinity had an higher



influence than bottom habitat patchiness on both macroinvertebrates and fishes; moreover, spatial co-variance of the two guilds was observed both at the taxonomic and at the size level. As regards fishes, these patterns were common to the dominant species (*Atherina Boyeri*) and to the rest of the fish guild.

Results emphasise that common non random distribution patterns are observed even in small lagoons and for different guilds, including vagile fauna, as fish are. It suggests the occurrence of high intra-specific and inter-specific divergence in lagoon ecosystem allowing resource use optimisation through niche specialisation, available energy partitioning and individual energy budget adaptation.

### **S5.8 Conservation and management issues in the Vistula Lagoon (southern Baltic Sea)**

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Vistula Lagoon is one of the three largest lagoons located along the southern coastline of the Baltic Sea. It is a trans-boundary inner coastal waters shared by Poland (367 km<sup>2</sup>) and Russia (Kaliningrad Oblast, 471 km<sup>2</sup>). The state border divides the lagoon into two parts, and the only connection with the Baltic Sea is the Baltiysk Strait located in the Russian part. Lagoon is separated from the Baltic Sea by a stable sandy barrier. The Polish part of the Vistula Lagoon has been designated the NATURA 2000 area (both habitat as well as bird one).

Lagoon was historically formed as an estuary of the Vistula River. In 1916 after regulation, when the Vistula runoff was mostly directed to the Baltic Sea, hydrological and sedimentation regimes of the lagoon changed dramatically and the lagoon evolved from freshwater plain estuary toward estuarine lagoon with significant influence from the Baltic. Administrative division of the lagoon as well as its drainage basin creates many trans-boundary problems regarding managements of renewable resources and conservation issues. Moreover, Russian-Polish border is a border between EU and non-EU states with different priorities as well as administrative and legal systems which is not easy to reconcile. This presentation is based on our experience gained during several international projects as Mantra-East (EU FP5), ARTWET (South Baltic Cross-border Cooperation Programme 2007- 2013), as well as the ongoing LAGOONS (EU FP7). We will review the up-to-date knowledge on the current state and background of the Vistula Lagoon eutrophication, fisheries pressure and potential consequences of planned hydro-technical constructions on lagoon environment. Those three groups were identified at the meetings with stakeholders as having the most significant impact on trans-boundary conservation issues in the Vistula Lagoon.