



# LIFE + Environment Policy & Governance

## Annex B.4.2

### **Deliverable Action B.4: Methodology Report for the development of future IMS suitability maps**

December 2014

Deadline of deliverables: 31/12/2014

## **LIFE CONOPS (LIFE12 ENV / GR / 000466)**

Development & demonstration of management plans against  
- the climate change enhanced - Invasive Mosquitoes in S. Europe



The **LIFE CONOPS** project “Development & demonstration of management plans against - the climate change enhanced - invasive mosquitoes in S. Europe” (LIFE12 ENV/GR/000466) is co-funded by the EU Environmental Funding Programme **LIFE+ Environment Policy and Governance**.

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The current report presents the methodology followed for the implementation of Action B.4: Future climatic and environmental data projection, of the LIFE CONOPS project.

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## 1. Summary

### Background

Scope of this Report is to provide the methodological approach used for the development of the Spatial Risk Databases for the future establishment of IMS in Greece and Italy (Action B.4 Deliverables). In order to develop these databases and the respective IMS suitability maps and to be able to compare them to the relevant databases and suitability maps developed in Action A2, the methodological approach of Action A2 was also followed here.

Using the abiotic factors that affect the Invasive Mosquito Species' entry, spread and establishment as well as the future climatic data produced by the NASA GISS GCM ModelE, the future spatial databases and their relevant suitability maps were developed for 3 species (*Ae. Aegypti*, *Ae. Albopictus* and *Ae. Triseriatus*). Especially for *Ae. Albopictus* and *Ae. Triseriatus* the developed future suitability maps, are very similar to their current suitability maps developed during the implementation of Action A2. In order to overcome this constrain and be able to have comparable results, a map for each species was developed, presenting the comparison of the suitability factor between current and future years.

### Results

The results that were extracted from the study of the developed maps regarding the IMS suitability of Greece and Italy are:

- Regarding the *Ae. Aegypti* suitability, the areas that will be most likely affected in the future years by the climate change, will be the southern coastal areas of both countries
- for *Ae. Albopictus*, the suitability factor in the forthcoming years, in both Greece and Italy will increase. In Italy this increase appears to be equable with only some increase peaks at small areas of medium and high altitude. On the contrary, Greece presents more intense suitability factors' difference for the future years. The areas, affected more in terms of *Ae. Albopictus* future suitability, are the ones in medium and high altitudes and especially the mountainous areas of Pindos and Rodopi.
- For *Ae. Triseriatus* mainly the northern parts of Greece and Italy present an increased suitability taking into account the fact that both countries currently present a high suitability factor.

### Conclusion

As it is concluded from the study of the produced deliverables, the suitability of Greece and Italy for all 3 species (*Ae. Aegypti*, *Ae. Albopictus* and *Ae. Triseriatus*), will increase in the following years and this increase is mainly attributed to climate change. As a result, Action B4 is very useful for the development of management plans against IMS (the final outcome of

LIFE CONOPS project) because it presents the areas that will be most affected by IMS and thus these management plans will be more intense in these areas in comparison to others that are not affected in such a degree.