



# LIFE + Environment Policy & Governance

## ANNEX B.4.1

### Deliverable B4: Climate Evolution Report

December 2014

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**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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**LIFE CONOPS’ Participating Beneficiaries:**

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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 and the estimated changes in the climatic parameters affecting IMS (i.e., temperature, precipitation) for Italy and Greece between current and future years.

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## SUMMARY

**BACKGROUND:** Temperature and precipitation are the main climatic parameters that are related to the suitability of a region for the establishment and seasonal abundance of the IMS. Climate models suggest changes in future temperature and precipitation rates. In this work changes in temperature and precipitation rates due to climate change are assessed over Greece and Italy since Mediterranean region is considered to be the most prominent climate response Hot-Spot. The NASA GISS GCM ModelE is used to simulate current and future climate under the IPCC-A1B emissions scenario. However, the outputs from the GCM are relatively coarse (i.e.,  $2^\circ \times 2.5^\circ$ ) for applications in regional and local scales. The need for regional climate projections in a finer grid size is assessed, here, using the WRF model to dynamically downscale GCM simulations.

**RESULTS:** Temperature and precipitation rates for three current years (i.e., 2009-2011) are compared with values for three future years (i.e., 2049-2051) under IPCC-A1B emissions scenario. Results from the global model suggest that the selected years are representative for the relevant current (i.e., 2006-2015) and future (i.e., 2046-2055) years.

**CONCLUSION:** Future temperature and precipitation rate changes over Greece and Italy are estimated at a very high resolution scale. Precipitation change is much more location dependent compared to temperature. While future temperature is estimated to increase with an exception of autumn where a decrease less than 0.4 degrees is found at same Italian regions, future precipitation rates presents a mixed trend with a different seasonal pattern in all regions. This analysis will give us the opportunity to estimate the climatic parameters which are related to the suitability of the regions in these two countries for the establishment and seasonal abundance of the IMS in the future.