



LIFE CONOPS - Development & demonstration of management plans against -the climate change enhanced- invasive mosquitoes in S. Europe

LIFE12 ENV/GR/000466



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#### Project description:

##### Background

Invasive species are defined as non-native species that have been introduced and established in new geographic regions and have the potential to have an adverse impact on the environment, economy and human health. Globalisation of trade and travel has facilitated the spread of such non-native species and climate change has enhanced their survival in new localities. Europe has seen the introduction and subsequent establishment of more than 11 000 alien species, of which at least 15% are invasive and detrimental. Insects are the dominant group among non-native terrestrial invertebrates in Europe: of 1 522 established species, 1 306 (86%) are insects.

In recent years, concern has arisen globally over the potential for an increase in mosquito-borne diseases because of changes in the distribution of invasive mosquito populations. Such changes are the consequence of environmental modifications, ecosystem disturbances and global climatic change. The predicted increases in rainfall and temperature are likely to both extend the distribution of mosquitoes and associated pathogens and shorten the development time of mosquito larvae and the extrinsic incubation period of pathogens. Warmer and wetter weather is likely to result in longer seasonal activity of mosquitoes and rising sea levels are expected to produce more areas of wetland habitat suitable as mosquito breeding ground. Indeed, a considerable increase in the spread of exotic invasive mosquito species has been observed in Europe since the late 1990s and it has been accompanied by the emergence and/or re-emergence in

several EU countries of ‘forgotten’ mosquito-borne diseases such as chikungunya, dengue, West Nile fever and malaria. In the context of environmental and climate changes, it is particularly important to step up the surveillance of invasive mosquito species in areas at risk of establishing and transmitting the disease.

## Objectives

The LIFE CONOPS project aims to draw up integrated management plans for the effective and environmentally-friendly control of invasive mosquito species (IMS), preventing their entry, spread and establishment across Europe. Specific objectives include:

- The identification and characterisation of the current status of the IMS problem in terms of its entomological, environmental and socio-economic dimensions;
- Assessment of the environmental parameters that affect the establishment of IMS in European territories;
- The identification, listing and geo-reference of areas (in Greece and Italy) identified to be at high/medium/low risk of introduction and establishment of IMS;
- The development, optimisation and implementation of a novel monitoring device (prototype) at selected high-risk areas in Greece and Italy;
- The development and implementation of management plans that aim to confront the IMS threat at selected high-risk areas in Greece and Italy. These plans will take into account the current and future (projected) risk of climate change and its impacts and will aim to identify areas of high risk for IMS establishment in the future. The plans will also aim to incorporate the use of previously developed biodegradable mosquito control substances; and
- Monitoring and assessment of the environmental and socio-economic impacts of the management plans.

Expected results: The project expects to achieve the following results:

- A network of 12 prototype devices for the monitoring (surveillance) of the IMS population in selected areas of Greece and Italy; and
- The development of integrated management plans for combating the IMS problem now and in the future, based on climatic and environmental projections.

## Results

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Environmental issues addressed:

Themes

Biodiversity issues - Invasive species  
Risk management - Human health protection  
Climate change Adaptation - Natural resources and ecosystems

## Keywords

public health, introduction of animal species, risk management, preventive measure

Natura 2000 sites

Not applicable

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## Beneficiaries:

Coordinator	BENAKI PHYTOPATHOLOGICAL INSTITUTE
Type of organisation	Research institution
Description	The Benaki Phytopathological Institute (BPI), a non-profit, public research institute, was founded in 1929. It employs more than 60 researchers with expertise in entomology, plant pathology (including non-parasitic disorders), weed science, chemistry, toxicology and pesticides control. The institute conducts fundamental and applied research related to crop protection and safe use of pesticides for human health and the environment. The core activities of the Institute are to diagnose problems in agriculture, acquire knowledge and provide advice for the prevention and control of plant insect pests/diseases.
Partners	Agricultural University of Athens, Greece Azienda Sanitaria Locale Cesena, Italy Azienda Unità Sanitaria Locale Ravenna, Italy Centro Agricoltura Ambiente “G.Nicoli” S.R.L., Italy NCSR DEMOKRITOS, Greece ONEX Hellenic-Services Provision Private Company-Security Systems, Greece Telecommunications-IT-Industrial-Contracting-Technical Constructing, Greece TERRA NOVA ENVIRONMENTAL ENGINEERING CONSULTANCY Ltd, Greece Research University Institute of Sustainable Development and Human Resources/ Urban Environment and Human Resources, Panteion University), Greece Regione Emilia-Romagna–Public Health Service, Italy

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Administrative data:

Project reference	LIFE12 ENV/GR/000466
Duration	01-JUL-2013 to 30-NOV -2018
Total budget	2,989,314.00 €
EU contribution	1,480,656.00 €
Project location	Anatoliki Makedonia, Thraki(Ellas) Kentriki Makedonia(Ellas) Dytiki Makedonia(Ellas) Thessalia(Ellas) Ipeiros(Ellas) Ionia Nisia(Ellas) Dytiki Ellada(Ellas) Sterea Ellada(Ellas) Peloponnisos(Ellas) Attiki(Ellas) Voreio Aigaio(Ellas) Notio Aigaio(Ellas) Kriti(Ellas) Emilia-Romagna(Italia)

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