## Promoting awareness of wildlife crime prosecution and liability for biodiversity damage in NATURA 2000 areas in Crete



"Tackling environmental crime with the help of Geographic Information Systems (GIS) and Databases"

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THEMIS Right and Liability for the Environment

Conference: "Protecting habitats and endangered species in Europe through tackling environmental crime"

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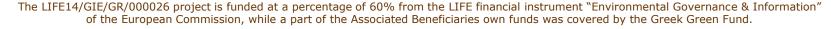


#### Main Goal/ Plan of the presentation

**GOAL:** To demonstrate the effectiveness of using Geographic Information Systems (GIS) and Databases for tackling environmental crime

#### PLAN:

- 1. The Environmental Law Observatories of Crete in the frames of LIFE 14/GIE/GR/000026 Project (LIFE NATURA THEMIS)
- 2. GIS as a tool to tackle effectively environmental crime/ The LIFE NATURA THEMIS GIS MAP
- 3. Shared databases as a tool to tackle effectively environmental crime/ A successful example through the experience of ELO West Crete
- 4. Important conclusions/ proposals















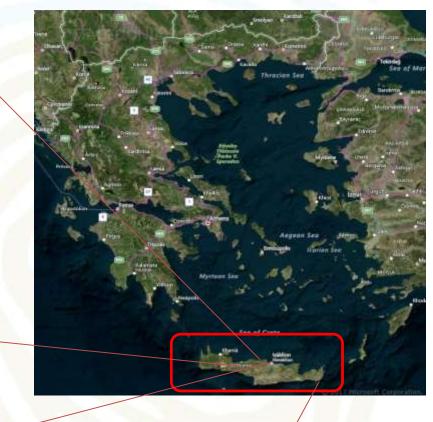




#### **Crete in Greece**



West Crete





**East Crete** 



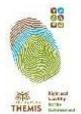




#### Why in Crete?



### 30% of the total area of Crete belongs to NATURA 2000 network



















### The unique characteristics of the Environmental Law Observatories of Crete

- 1. First time a Lawyers' Bar Association gets involved in a European Project
- 2. The Lawyers' Bar Association is responsible for the operation of the Observatories: independent operation, objective information
- 3. Record and analysis of Criminal Environmental Law Court Cases and the imposed Administrative Fines, regarding the respective regions, with emphasis on NATURA 2000 sites
- 4. Import of collected data **in a geo-informatics (GIS) map**, accessible to the public, through the project's website (<a href="http://www.lifethemis.eu">http://www.lifethemis.eu</a>)



















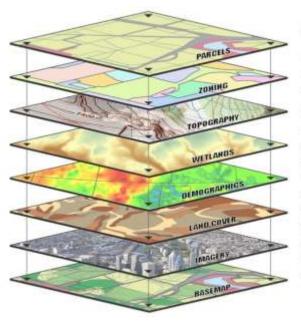






#### **Defining Geographic Information Systems (GIS)**

• A powerful set of tools for collecting, storing, retrieving, transforming, and displaying spatial data from the real world. (Burroughs, 1986)

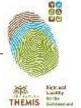


#### **GIS DATA LAYERS**

Many different types of data can be integrated into a GIS and represented as a map layer.

Examples can include: streets, parcels, zoning, flood zones, client locations, competition, shopping centers, office parks, demographics, etc.

When these layers are drawn on top of one another, undetected spatial trends and relationships often emerge. This allows us to gain insight about relevant characteristics of a location.



















### LIFE NATURA THEMIS' GIS MAP for collected information by public agencies



Import of collected data in a geoinformatics (GIS) map, accessible to the public through the project' s website (http://www.lifethemis.eu)

- Public agencies with preliminary investigation or administrative powers are constantly addressed (Coastguards, Fire Services, Environmental Departments of Prefectural Unities, Courts of 1st Instance, Court of Appeal).
- None of the public agencies keeps systematically electronic data regarding environmental law compliance except for the Fire Services.
- None uses GIS for the collection and assessment of data. Even the national electronic environmental register does not use GIS!
- The action of the Association Bars has been thus proven necessary

















#### Research Findings: Spatial distribution of recorded offences

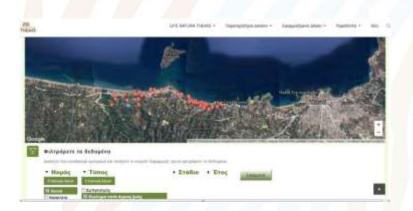


Fig. 1:The example of violation of *Caretta- caretta* protection rules in Chania region

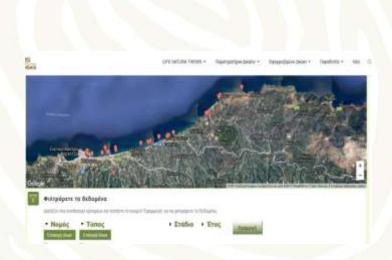


Fig. 2: The example of seashore degradation in Rethimnon













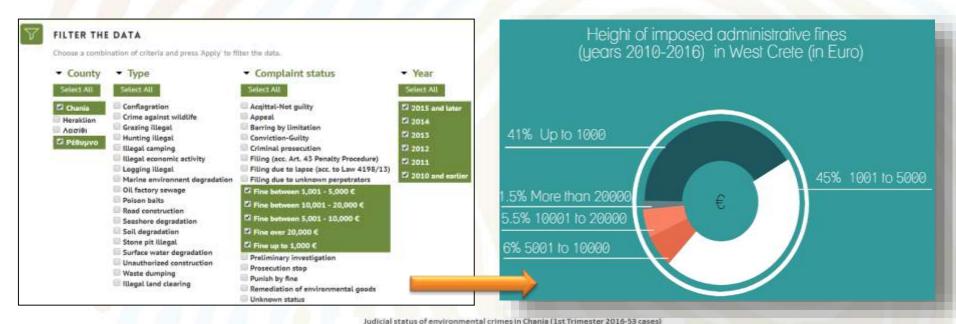


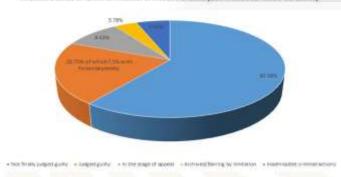


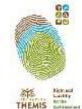




### More results emerging when applying more search filters























#### Innovation/Advantages of developed GIS map

- It is easy for everybody to extract information about the recorded offences as well how the respective public agencies tackled each one of them.
- Transparency is achieved with respect to personal data protection!
- Direct monitoring of the efficiency of the relevant public agency is enabled, "hotspots" of criminal activity and environmental degradation are targeted.
- Public agencies easier realize their individual responsibility for preventing and remedying environmental damage.
- Further spatial analysis of imported data will conclude to guides for prefectural strategies against environmental offences















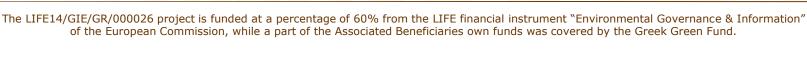






#### **Obstacles confronted so far/ Conclusions**

- The collection of imported data is extremely time- consuming in order to ensure they
  are reliable (lack of official electronic data, lack of staff and IT services in the
  relevant public agencies, reluctance of the authorities to provide the data). Extract
  of the necessary information manually among thousands of irrelevant other files!
- Special license from Data Protection Authority necessary (for court files)!
- GDRP compliance necessary!
- Despite all obstacles the LIFE NATURA THEMIS GIS MAP can be used as a road map to show how with GIS we are able to monitor better the Environmental Law compliance, to highlight major systematic gaps that make room to potential Environmental Law offenders, to provide environmental information to the public and finally to boost the adequate Environmental Law and Policy adjustments.























#### Shared databases as a tool to tackle effectively environmental crime/ A successful example through the experience of ELO West Crete

- Crete is one of the main cheese producers in Greece: a lot of sheep/ goat farms
- Specific morphology of Crete: a lot of mountainous / less favored areas
- → Fire has been used by farmers in Crete as a tool to create grazing land or improve the quality of the grazing land from earliest times

→ Farmers most common offenders of arson crimes in Crete (very rare in Crete fires due to natural causes)













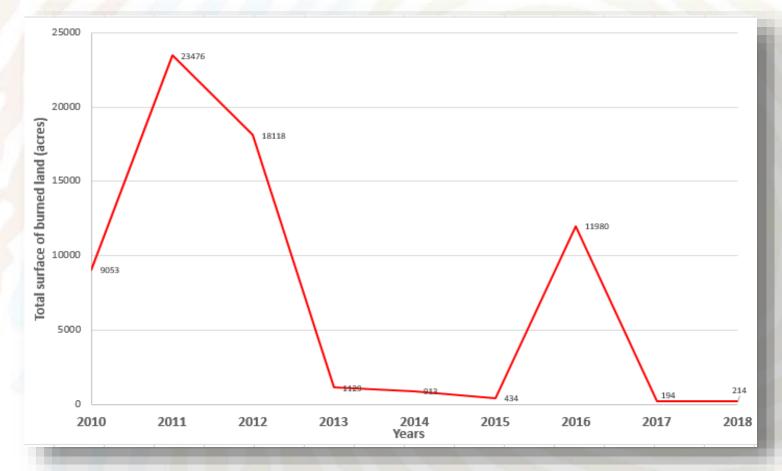








#### Monitoring arson cases from the Fire Service's filesthe example of Rethimnon Fire Service





#### Significant decrease of burned land over the years!









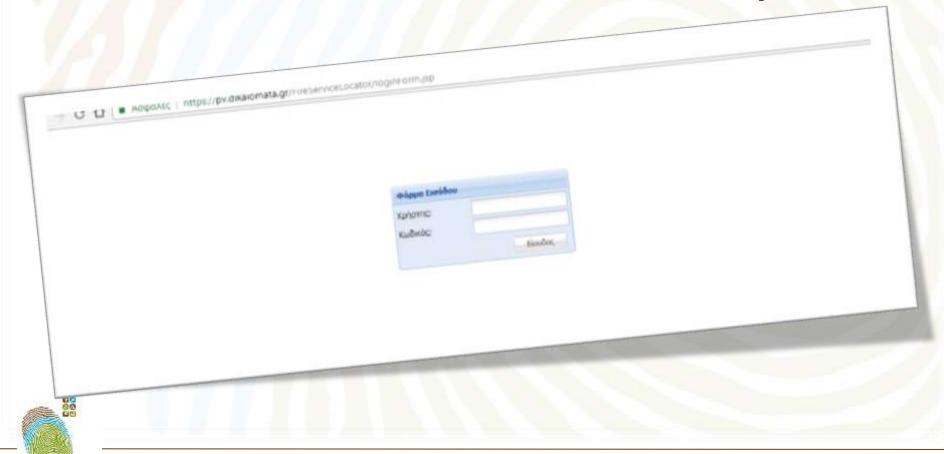








# The main reason of the decrease: Shared data base since 2013 between the Fire Service and the Greek Payment Authority of Common Agricultural Policy Aid Scheme – OPEKEPE and elimination of fires set by farmers



















### The Greek Payment Authority of Common Agricultural Policy Aid Scheme - OPEKEPE

- ✓ The Greek Payment Authority of Common Agricultural Policy Aid Scheme has digital map files with the data of farmers and their grazing land
- ✓ The data can be directly viewed through the shared database by the Fire Service Officers, and thus lead in seconds to possible offenders
- ✓ Farmers living in mountainous and less- favored areas when accused of any crime (including arson crime) are not only facing imprisonment but also the immediate cessation of their special European subsidies until it is proved that they are innocent (according to Ministers' decision- FEK 393/B'/7-3-2008)



The LIFE14/GIE/GR/000026 project is funded at a percentage of 60' of the European Commission, while a part of the Associ













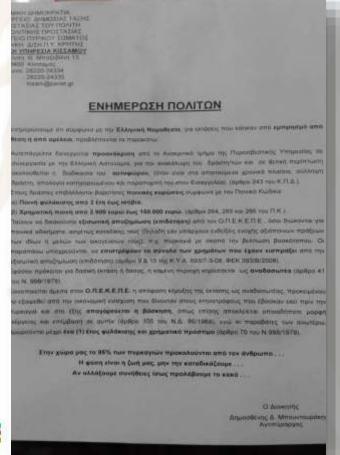




**OPEKEPE** 



# Simultaneous actions: Informative Campaign to the farmers - Dissemination of the legislation: Announcements in villages taking into account the psychology of the certain target group























#### Characteristics of the specific shared database

- The shared database was an idea of local Fire Services, not central authorities (political cost often hinders the implementation of such measures on a national level)
- Not only technology but also an approach adjusted to the specific targeted group (informative campaign to the farmers)
- Significant decrease of fires, although very few cessations of European subsidies actually took place!!
- Effective measure of prevention although according to the new decision by the Minister of Agricultural Policy in Greece: (FEK 1275/B'/4-5-2016):

Farmers living in mountainous and less-favored areas when accused of any crime (including arson crime) are NOT ANY MORE facing the immediate cessation of their

special European subsidies until it is proved that they are innocent















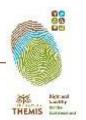




#### **Important Conclusions/ Proposals**

- Traditional sanctions for environmental crime are less effective
- Modern technology provides us with new tools to combat environmental crime
- Environmental Law and Policy call for constant adjustments, in order to ensure their effectiveness in on- going environmental problems, global or local
- Towards a new era where Law and Technology will be at the service of the Environment?

























# Thank you for your attention! Questions?

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