



# After LIFE Conservation Plan

**LIFE08 NAT/GR/533**

**“Fire RestorAtion Methodology for MEditerranean Forests – environmental safety & sustainability of 4 interventions in the Rhodes NATURA 2000 site”  
FRAMME**



FRAMME



ΠΡΑΣΙΝΟ ΤΑΜΕΙΟ



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## Preface

This text constitutes the last deliverable of the FRAMME project, prepared as to best respond to the relevant requirements of the EU Commission. It is dearly hoped that, if used along with the projects previous deliverables and infrastructure, such as the SPES and fire fighting equipment, this text will assist the weak political conservation status of the particular protected area and also highlight the vast need for political and financial support to all valid efforts for delivering positive environmental impacts in Greece.

## Introduction

A wild forest fire took place in Rhodes during the summer of 2008 which destroyed more than 10.000 ha of forestland, affecting major producing facilities and downgrading the island's vital resources. Part of the fire reached the NATURA 2000 site GR4210005 (RODOS: AKRAMYTIS, ARMENISTIS, ATTAVYROS, REMATA KAI THALASSIA ZONI, KARAVOLA-ORMOS GLYFADA) burning 11,1% (3.063 ha) of its area, home to significant and rare species of flora and fauna.

The characteristic terrestrial habitats of this area are the two types of coniferous wood along with matorrals *Juniperus spp.* (code 5210). The first consists of *Pinus brutia* (9540) which creates mixed forests with *Cupressus sempervirens v. Horizontalis* (9290), which are predominantly found in the FRAMME project implementation area. These mixed forests are found in very few areas in Greece (Dodecanese and Crete) and the Rhodes case is one of their best and most representative types/ expressions.

In 2009 the FRAMME project was approved by the European Commission, in order to target a series of fire impacts faced by the habitats, in addition to cover the knowledge gap in contemporary science regarding management and restoration of fire afflicted Mediterranean forests. The project's major objectives were:

- The compilation of a well documented and sound, Restoration Guide for Mediterranean fire afflicted forests. A first priority in order to achieve this is, was the assessment of the environmental safety of the impact on habitat regeneration and soil restoration via the implementation and comparative assessment of two common restoration interventions (plantations and antierrosion measures such as log barriers) in combination with two more innovative, irrigation with treated sewage water and soil enrichment with treated municipal sludge. Every experimental intervention, as well as the various combinations, would be assessed in terms of effectiveness and sustainability.
- The restoration of the seriously damaged NATURA 2000 habitats in Rhodes. In order to achieve this, restoration actions would be carried out in habitats covering a total area of 64 ha and the targeted distribution of specific interventions, in areas of 1 ha each.

The actions of the project included scientific monitoring, the implementation of management measures and awareness and dissemination activities. The most important actions implemented by the project concerned the following:

1. Compilation of the Special Purpose Environmental Study, which also included six Specialized Studies for the implementation area:
  - ✓ Biodiversity Study
  - ✓ Geological Study
  - ✓ Climate Study
  - ✓ Water Resources Study
  - ✓ Impact Study of the 2008 forest fire
  - ✓ Risk Assessment Analysis
2. Compilation of the project's Implementation Plan, including detailed topographic mapping of the experimental plots and the corresponding interventions.
3. Fencing of 50% of the experimental plots (32 ha).
4. Maintenance and repair of anti-erosion infrastructure in several plots
5. Planting and irrigation of approximately 1500 endemic pines, cypress trees and junipers in 16 experimental plots.
6. Sewage sludge application in 8 experimental plots (8 ha).
7. The Municipality has acquired the following equipment:
  - ✓ 2 Pump – Water Tank carrier (4X4) vehicles
  - ✓ 1 large Water Tank truck
  - ✓ 1 Carrier truck (6-ton)
8. Development of the GIS tool for the comparative assessment of the interventions incorporating remote botanical detection by the use of satellite IR images and on site field work. Baseline data was verified during three field visits in 2012 and one in 2013, while satellite data was purchased for May 2002, March 2009, July 2011 and September 2012.
9. Soil samples analysis.
10. Treated municipal waste water analysis.
11. Sewage sludge analysis.
12. Compilation of a draft Good Practice Guide.
13. Four technical papers produced and relevant international conferences attended.
14. Dissemination events, including the 1<sup>st</sup> Project Conference, Vehicle Presentation Event and participation in 3 local awareness raising events.

Unfortunately the implementation of all of the project was concluded in June 2013 instead of the originally planned end in January 2015, due to a termination of the project that was a result of various delays in the concrete conservation actions implementation by one of the

beneficiaries, the Municipality of Rhodes, which faced serious bureaucratic problems within the local administration system of Greece.

Yet, despite the unduly termination several actions were implemented and their results should be monitored and preserved in the future. There is definitely a constant need for the implementation of management measures in the area and significant infrastructure gained from the projects should be used in this context in the years to come.

## SWOT Analysis

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| <p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Established scientific knowledge on conservation status of the site (SPES, Specialized Studies, draft GPG, GIS tool etc.)</li> <li>• Solid knowledge base and experienced local authorities' personnel</li> <li>• Useful initial equipment acquired</li> <li>• The conservation status of the 3 habitats of the site due to restoration works carried out during the project</li> <li>• Local authorities' commitment</li> <li>• Local acceptance and awareness raising</li> </ul> | <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Incomplete projects conservation actions due to earlier termination</li> <li>• Overall problematic operation of national protected areas' policies</li> <li>• Problematic management of the particular Natura 2000 site GR4210005 (no management body, no management plans).</li> <li>• Weak national and local fire protection and prevention system.</li> <li>• National financial crisis</li> </ul> |
| <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Gradual establishment of environment in the local political agenda</li> <li>• Local volunteer and awareness raising programs</li> <li>• Applying for external funds – projects</li> <li>• Programme by the Ministry of Environment to carry out Special Environment Studies and establish Presidential Decrees in order to strengthen the national protected areas system</li> </ul>   | <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Continuation of financial crisis</li> <li>• Possible abandonment of the protected areas policy agenda</li> <li>• Collapse of fire protection and prevention system</li> <li>• Natural catastrophes (wild fires, extended droughts, etc)</li> </ul>  |

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| <ul style="list-style-type: none"> <li>Regular communication of NGO with Ministry officials for the improvement of the national protected areas system</li> </ul> |  |
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### Action Plan for the project's implementation area and beyond

In light of what the above analysis has shown, it can be concluded that if the various strengths are utilized there are relevant opportunities for enhancing and maintaining the preservation status of this protected area with positive results. These opportunities must be linked with the national and local economic climate and policies. It is difficult to foresee what will come from this perspective as the country is undergoing a very challenging and difficult period. The proposed actions described in this section are drawn up in order to cover as many of the crucial conservation needs related to this protected area as possible in addition to providing support for other important areas threatened by forest fires.

The main After LIFE objectives are:

- To ensure the preservation of the conservation measures taken during the project.
- To utilize the project infrastructure and equipment in future environmental protection.
- Monitoring of target species and their habitats.
- To disseminate the knowledge gained to the national authorities and other conservation actors.

| Conservation need   | Degree of importance | Actor responsible | Possible Funding Sources | Comments  |
|---|----------------------|-------------------|--------------------------|---|
| <i>1000 additional plantings</i>                                  |                      | MR                | Green Fund               | MR has provided a comprehensive Action Plan for this action which will be completed by end 2013. The relevant personnel and budget are included. It is submitted as an Annex to the Final Report. |
| <i>Application of additional soil improvement – sewage sludge</i> |                      | MR                | Green Fund               | MR has provided a comprehensive Action Plan for this action which will be completed by end 2013. The relevant personnel and budget are included. It is submitted as an Annex to the Final Report. |
| <i>Plantings</i>  | Necessary            | MR                | Green Fund               | MR has provided a   |

|  |           |                               |                                  |   |
|--|-----------|-------------------------------|----------------------------------|---|
| <i>preservation (irrigation) and project infrastructure maintenance (road network, irrigation system, fencing, vehicles)</i> |           |                               |                                  | comprehensive Action Plan for this action which will be continuous thru 2014. The relevant personnel and budget are included. It is submitted as an Annex the Final Report.   |
| <i>Preservation of 3 main habitats and beyond from future forest fires and other environmental threats</i>                   | Critical  | MR & South Aegean Prefecture  | Green Fund                       | MR has already signed an MoU with the Prefecture's Civil Protection Authority with regard to the future use of the project's vehicles for firefighting needs and other environmental restoration purposes on the island of Rhodes. It is submitted as an Annex to the Final Report. |
| <i>Soil Monitoring</i>   | Important | LEES                          | Green Fund                       | LEES has provided an After LIFE Monitoring Plan including soil monitoring provisions, within the Final Report.  |
| <i>Biodiversity Monitoring</i>   | Important | LEES                          | Green Fund                       | LEES has provided an After LIFE Monitoring Plan including biodiversity monitoring provisions, within the Final Report.  |
| <i>Restoration Impact Monitoring</i>   | Important | LEES                          | Green Fund                       | LEES has provided an After LIFE Monitoring Plan within the Final Report. The Plan presents the monitoring activities that will take place in the following years, especially via use of the GIS tool developed by the project.  |
| <i>Preparation of an overall SES for the GR4210005</i>   | Critical  | Ministry of Environment (MoE) | Structural Funds National Budget | EE will submit the project's SPES and accompanying Specialized Studies to the MoE in order for them to be used as the basis for the   |

|  |           |        |                                     |   |
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|  |           |        |                                     | area's SES. Once an SES is completed by the authorities then the State can proceed with the establishment of a Presidential Decree which is the most crucial step in actual declaring an area protected in Greece                 |
| <i>Preparation of a Management Plan &amp; establishment of a relevant competent authority</i>                        | Critical  | MoE    | Structural Funds<br>National Budget | EE will be in close communication with the MoE and will try to exert pressure in the following years for a complete protection of the area via Management Plans and their implementation and monitoring by a competent authority. |
| <i>Dissemination of the project results, including draft GPG and GIS tool to other conservation actors in Greece</i> | Necessary | EE     | Own resources                       | EE will submit the project's draft GPG and GIS tool to the MoE and the Ministry of Interior in order for them to be used in future fire restoration actions in other afflicted areas in Greece.                                   |
| <i>Public awareness</i>  | Important | MR, EE | Own resources/<br>Green Fund        | The beneficiaries will organize a joint workshop where the results and tools developed by FRAMME will be communicated to the Forestry Service and other local fire fighting and conservation actors.                              |

The various after LIFE activities are presented for each year in the following table:

| <b>2013</b>   | <b>2014</b>   |
|---|---|
| 1000 Additional plantings                           | Irrigation of plantings                             |
| Soil Improvement in 4 plots                         | Vehicle use for environmental protection            |
| Irrigation of plantings                             | Project vehicle – infrastructure & road maintenance |
| Vehicle use for environmental protection            | Soil Monitoring                                     |
| Project vehicle – infrastructure & road maintenance | Biodiversity Monitoring                             |

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| Soil Monitoring   | Restoration Impact Monitoring   |
| Biodiversity Monitoring   | Political pressure towards MoE for a complete protection of the area via Management Plans and their implementation and monitoring by a competent authority. |
| Restoration Impact Monitoring   | Public awareness Workshop   |
| SPES and accompanying Specialized Studies submission to MoE in order for them to be used as the basis for the N2000 site's SES.                             |   |
| Political pressure towards MoE for a complete protection of the area via Management Plans and their implementation and monitoring by a competent authority. |   |
| Dissemination of the project results, including draft GPG and GIS tool to other conservation actors in Greece   |   |

The Prefecture and Forestry Service have already made use of the projects vehicles, and the project's after LIFE commitment has been honoured, during the forest fire that took place in South Rhodes on 27/7/2013. The FRAMME vehicles were used for fire fighting purposes, and an amateur video is available online (<http://www.youtube.com/watch?v=y2p7vty2cNI>) where one can especially see the large water tank being used by the fire-fighters.



### Financial Outlook

MR has provided an analytical budget for its after LIFE activities (until the end of 2014), amounting to a total of € 194.038.

LLES has also provided an analytical budget with regard to soil and biodiversity monitoring, future use of the GIS tool, which will cost € 17.600. An additional €2.400 will be necessary in

order for the GPG to be updated at the end of 2014 and for a potential participation in a conference or a technical publication where the GPG and the results will be presented.

EE will rely on its permanent personnel and mainly its Environmental Policy Coordinator to carry out the after LIFE activities. Submitting the project results and deliverables to the national authorities will require a small amount of time and money. It is difficult to foresee how much time the future policy negotiations will require, especially since the country's national protected area system is currently undergoing major changes and facing huge financial and administrative issues.