

LIFE11 ENV GR 975

FLIRE: Floods and fire Risk assessment and management



Technical Report

Action C2

31/12/2012

Project location	Greece – Attiki region
Project starting date:	01/10/2012
Project ending date:	30/09/2015
Coordinating Beneficiary	National Technical University of Athens
Associated Beneficiary responsible for the Action C2	Research Institute for Geo-Hydrological Protection, Italian National Research Council
Contact person	Mr Tommaso Moramarco
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Other Associated Beneficiaries involved in the Action C2	National Technical University of Athens National Observatory of Athens ALGOSYSTEMS S.A.
Contact persons	NTUA: Mr Christos Makropoulos NOA: Mrs Vassiliki Kotroni ALGO: Mr George Eftychidis

Name of the Action:**Monitoring of the Project impact on the environmental problem targeted****Starting date of the Action:** 01/10/2012**Ending date of the Action:** 30/09/2015**Short description of the Action****Aim**

The aim of Action C2 is the monitoring of the Project impact on the targeted environmental problems (floods, fires and their combined impact on human population and ecosystems) during the implementation phase of the Project and also at the end of the planned activities (for at least a 5 years period). To this end, appropriate environmental indicators have been identified in the project proposal:

- 1) Indicators relevant to fire risk assessment and management
 - a) Forested land areas in the study area (A_{for})
 - b) Forested land areas affected by fire in the study area (A_{for_fire})
 - c) Carbon dioxide concentration (CO_2)
 - d) Temperature variation (T_{var})
 - e) Biochemical Oxygen Demand (BOD)
 - f) Indicators of biology diversity (number of animal species, N_{as} , number of forest plants species, N_{ps})
 - g) Stream peak discharge (Q_{peak})
 - h) Basin lag-time (Lag)
- 2) Indicators relevant to flood risk assessment and management
 - a) Number of pollutant sources affected by flooding (N_{ps})
 - b) Fertility land reduction (F_{lr})
 - c) Stagnant water extension (SWE)
- 3) Indicators relevant for quantifying the performance of the proposed tools
 - a) Number of measures suggested by the FLIRE project examined and/or adopted by the stakeholders (NMA)
 - b) Percentage of flash floods correctly forecasted by the developed tools (FFcF)
 - c) Number of forest fire plans modified by the pertinent authorities (FPm)
 - d)) Percentage of forest fires correctly forecasted by the developed tools (FFcF)

Objectives

The main objectives of Action C2 are:

- collect all data available in the study area in order to identify which indicators can be actually assessed and if further ones can be included in the analysis, eventually. This activity will be carried out in Tasks A1, B1 and C1;

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- identify critical threshold values of the indicators, if applicable. This activity will be carried out in Tasks A1, B1 and C1;
- monitor the identified indicators for both the events observed in the past and for the ones that may occur during and after the project period. This activity will be carried out in Tasks A2, B2 and C2.

Expected outcomes

The expected outcomes of Action C2 are:

- the identification of the current environmental conditions and relevant environmental trends in the study area;
- the monitoring and assessment of the FLIRE project impact on the environmental status of the study area;
- the development of useful tools for supporting sustainable development in the study area.

Tasks

The Tasks necessary for the implementation of Action C2 are listed.

- **TASK A:** Assessment and Monitoring of the identified indicators relevant to fire risk analysis **High priority**

Task A1: Collection of all the available datasets useful for fire risk indicators assessment (land use maps, satellite images, air quality data, water quality data, temperature, river discharge, rainfall, etc..) and identification of indicators that can be quantified along with their critical threshold values, if applicable.

It has to be noted that indicators different from the ones listed in the project proposal reported in this technical report can be selected for monitoring purposes on the basis of the available data.

Task A2: Analysis of the collected data and assessment of the identified indicators for both past events and for events that can occur during the project period and after the end of the project (a monitoring period of 5 years is planned)

Involved Associated Beneficiaries: NTUA, NOA, ALGO, IRPI-CNR.

- **TASK B:** Assessment and Monitoring of the identified indicators relevant to flood risk analysis **High priority**

Task B1: Collection of all the available datasets useful for flood risk indicators assessment (satellite images, aerial photos, list of pollutant sources in the flood-prone areas, land use maps, extension of flooded areas affected by past flood events, etc..) and identification of the indicators that can be quantified along with their critical threshold values, if applicable.

It has to be noted that indicators different from the ones listed in the project proposal reported in this technical report can be selected for monitoring purposes on the basis of the available data.

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Task B2: Analysis of the collected data and assessment of the identified indicators for both past events and for events that can occur during the project period and after the end of the project (a monitoring period of 5 years is planned)

Involved Associated Beneficiaries: NTUA, ALGO, IRPI-CNR.

- **TASK C:** Assessment and Monitoring of the identified indicators relevant for quantifying the performance of the proposed tools **High priority**

Task C1: Collection of all the available data of fire and flood events occurred in the past

Task C2: Analysis of the collected data and assessment of the identified indicators for both past events and for events that can occur during the project period and after the end of the project (a monitoring period of 5 years is planned). The analysis will start when the DSS tools for real-time food and forest fire risk management will be developed and made operative in the framework of the project. Indeed, the monitoring of the this set of indicators makes sense only for the period after the completion of the Project.

Involved Associated Beneficiaries: NTUA, ALGO, NOA, IRPI-CNR.

Working Team

The working team involved in each task of Action C2 is described in what follows (PC=Project Coordinator; IPC: Internal Project Coordinator).

The work planning and selection of the IRPI-CNR Temporary Fellow Research necessary to run the project activities have been started and will be finalized most probably within the end of January 2013.

TASK A: Assessment and Monitoring of the identified indicators relevant to fire risk analysis

Task A1:

1. IRPI-CNR: Dr. Silvia Barbetta – Researcher/Hydrologist
2. IRPI-CNR: Dr. Luca Brocca - Researcher /Hydrologist
3. IRPI-CNR: Temporary Fellow Researcher - Researcher/Hydrologist
4. NTUA: Prof. Maria Mimikou – PC, coordinator of the NTUA team
5. NTUA: Prof. Christos Makropoulos – IPC
6. NTUA: Dr. Chrysoula Papathanasiou – Civil Engineer, Hydrologist, flood modeler
7. NTUA: Dr. Evangelos Baltas – Senior Engineer, Hydrologist and flood modeler
8. NTUA: Dr. Nikolaos Mamassis – Senior Engineer, Hydrologist, expert in Geoinformatics
9. NTUA: Dr. Kimon Hadjibiros – Senior environmental scientist
10. NOA: Vassiliki Kotroni – IPC, Research Director, Meteorologist

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11. NOA: Konstantinos Lagouvardos – Research Director, Meteorologist, atmospheric modeller
12. ALGO: George Eftychidis - IPC

Task A2:

1. IRPI-CNR: Dr. Tommaso Moramarco – IPC
2. IRPI-CNR: Dr. Silvia Barbetta – Researcher /Hydrologist
3. IRPI-CNR: Dr. Luca Brocca - Researcher /Hydrologist
4. IRPI-CNR: Temporary Fellow Researcher - Researcher/Hydrologist
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10. NTUA: Dr. Kimon Hadjibiros – Senior environmental scientist
11. NOA: Vassiliki Kotroni – IPC, Research Director, Meteorologist
12. NOA: Konstantinos Lagouvardos – Research Director, Meteorologist, atmospheric modeller
13. ALGO: George Eftychidis - IPC

TASK B: Assessment and Monitoring of the identified indicators relevant to flood risk analysis

Task B1:

1. IRPI-CNR: Dr. Silvia Barbetta – Researcher /Hydrologist
2. IRPI-CNR: Dr. Luca Brocca - Researcher /Hydrologist
3. IRPI-CNR: Temporary Fellow Researcher - Researcher /Hydrologist
4. NTUA: Prof. Maria Mimikou – PC, coordinator of the NTUA team
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8. NTUA: Dr. Nikolaos Mamassis – Senior Engineer, Hydrologist, expert in Geoinformatics
9. NTUA: Dr. Kimon Hadjibiros – Senior environmental scientist
10. NOA: Vassiliki Kotroni - IPC
11. ALGO: George Eftychidis - IPC

Task B2:

1. IRPI-CNR: Dr. Tommaso Moramarco - IPC
2. IRPI-CNR: Dr. Silvia Barbetta – Researcher /Hydrologist

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3. IRPI-CNR: Dr. Luca Brocca - Researcher /Hydrologist
4. IRPI-CNR: Temporary Fellow Researcher - Researcher /Hydrologist
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TASK C: Assessment and Monitoring of the identified indicators relevant for quantifying the performance of the tools proposed by the Project

Task C1:

1. IRPI-CNR: Dr. Silvia Barbetta – Researcher /Hydrologist
2. IRPI-CNR: Dr. Luca Brocca – Researcher /Hydrologist
3. IRPI-CNR: Temporary Fellow Researcher - Researcher /Hydrologist
4. NTUA: Prof. Maria Mimikou – PC, coordinator of the NTUA team
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11. NOA: Konstantinos Lagouvardos – Research Director, Meteorologist, atmospheric modeller
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Task C2:

1. IRPI-CNR: Dr. Tommaso Moramarco - IPC
2. IRPI-CNR: Dr. Silvia Barbetta - Researcher /Hydrologist
3. IRPI-CNR: Dr. Luca Brocca - Researcher /Hydrologist
4. IRPI-CNR: Temporary Fellow Researcher - Researcher /Hydrologist
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10. NTUA: Dr. Kimon Hadjibiros – Senior environmental scientist
11. NOA: Vassiliki Kotroni – IPC, Research Director, Meteorologist
12. NOA: Konstantinos Lagouvardos – Research Director, Meteorologist, atmospheric modeller
13. ALGO: George Eftychidis - IPC

Deliverables

The deliverable products of Action C2 of FLIRE Project are described in the following table.

Name of the Deliverable	Deadline
Report on environmental status of the area	30-04-2013
Report on environmental evolution of the area	30-04-2015
Final report with goals on problem targeted	30-09-2015

Milestones

In the submitted proposal, no milestones were reported for the Monitoring Action C.2. However, the prioritized tasks, mentioned in the corresponding field of this report, can be considered as a sort of milestones that are selected for the sound implementation of this Action.

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Gantt-chart

Action C2 (Monitoring of the Project impact on the environmental problem targeted)		2012			2013				2014				2015		
Task	Name of the Task	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III
A1	Collection of all the available datasets useful for fire risk indicators assessment			■	■	■									
A2	Analysis of the collected data and fire indicators assessment for both past events and events occurring during and after the end of the project						■	■	■	■	■	■	■	■	■
B1	Collection of all the available datasets useful for flood risk indicators assessment			■	■	■									
B2	Analysis of the collected data and flood indicators assessment for both past events and events occurring during and after the end of the project						■	■	■	■	■	■	■	■	■
C1	Collection of all the available data of fire and flood events occurred in the past				■	■	■	■							
C2	Analysis of the collected data and project performance indicators assessment								■	■	■	■	■	■	■

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