



Co-finanziato da ENEL

# AFTER-LIFE COMMUNICATION PLAN



**LIFE+ Biodiversity**

**LIFE12 BIO/IT/000231**

*Development of an innovative  
and user-friendly indicator  
system for biodiversity in  
groundwater dependent  
ecosystems*



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## 1. AIMS AND OBJECTIVES

The main aim of the AQUALIFE AFTER-LIFE COMMUNICATION PLAN is to disseminate the know-how built up during the project. Communication and Dissemination are key-issues of the LIFE projects, but actually the relevance of communication is expanding exponentially in all project types from the largest Horizon 2020 to the national research projects in the European Community. Dissemination is crucial for Science, and also in the scientific arena the main aim of any scientific Journal is to strengthen communication via several tools: open access tools, Facebook and other social media, and of course the web. At the end of the AQUALIFE PROJECT in August 30th 2018, the communication process was carried out with different activities and different tools, most of them will be used in the After-LIFE Communication Plan. Communication needs of course a face-to-face communication, but also a spread of information via Internet and printed products such as open access publications with free access to scientists and citizens, also by means of communications in newspapers.

The main objectives of the AQUALIFE post-LIFE communication action plan are:

- to communicate to the public the AQUALIFE main output: the urgent need to protect the groundwater dependent ecosystems (acronym GDEs) that are under threat across the whole European Community and across the Planet;
- to disseminate the objectives and aims of the project using a simple language for citizens, young people especially, who represent the future generations;
- to inform citizens about biodiversity status in GDEs and its role not only under a conservation perspective but also under an ecological perspective, as biodiversity may serve as early warning system for groundwater abstraction, pollution and also alteration of surface GDEs as springs, streams and rivers depending in all or in part on groundwater;

- to develop a general consensus toward the urgent need of a correct management of GDEs and the true groundwater bodies;
- to increase and enlarge at different levels of dissemination the public awareness on the relevance of the GDEs and their biodiversity.

## 2. THE STAKEHOLDERS

The main stakeholders are represented by all the public and private entities working on freshwater. Freshwater bodies, just to simplify the legislative framework on the matter (Directive 60/2000/CE, Directive 118/2006/CE) are divided in surface freshwater bodies (lakes and streams) and groundwater bodies. Even if the tight connection and interdependence between them is known since decades, the two compartments are regulated in a quite different way: for surface water bodies the biomonitoring is mandatory, for groundwater bodies it is not. This is the main regulation gap the AQUALIFE PROJECT will disseminate. For surface freshwater GDEs (**groundwater excluded**) something is going on the right way, even slowly, according to the Report 9/2015 published under the European Communities (2015), where the need for biomonitoring is claimed, even if standardized methods or methodological approaches are not listed neither addressed in some way.

Given that, the potential stakeholders may be listed as follows:

- The Ministry for the Environment, Land and Sea in Italy;
- Provinces and municipalities for the environmental councillors;
- IUCN (International Union for Conservation of Nature);
- EEA (European Environmental Agency);
- Universities and research centres in the fields of freshwater monitoring, groundwater quality assessment, risk assessment, ecotoxicology, geology, and so on;
- Environmental Organisations (WWF, Legambiente, FAI);
- Local environmental associations;
- National, regional and natural parks;

- Citizens, students, professionals in the environmental field, ecologists, biogeographers, experts of Conservation of Nature;
- Professionals in the environmental field;
- Other projects LIFE and non-LIFE dealing with related topics of the AQUALIFE PROJECT.

### **3. LESSONS LEARNED: THE SCIENTIFIC AND PRACTICAL BACKGROUND OF THE AQUALIFE PROJECT**

The main objective of the AQUALIFE project was to develop an innovative and user-friendly system for assessing biodiversity conservation priorities in groundwater dependent ecosystems (GDEs) and for measuring the risk of biodiversity loss under different pressures of anthropic origin that may generate impacts to the GDE communities of invertebrates in both groundwater and surface GDEs depending on groundwater. This goal has been achieved successfully, indeed the project website (<http://www.aqualifeproject.eu/index.php/it/sistema-esperto/richiedi-credenziali>) hosts the AQUALIFE package, perfectly and easily working, that can be freely used by people interested in measuring the level of biodiversity in GDEs and true groundwater bodies. Actually the project AQUALIFE used different strategies (sampling methods) for entering the GDEs, especially the groundwater bodies that are not easily accessible to a sampler or to a technician. Consequently, the strategy was to make also the sampling of the GDEs the easiest possible through what we call “the open windows to the Styx”: wells, springs, streams and rivers fed directly by groundwater.

The project has had an important innovation value, which resides in the following aspects: a) the studied environments are still largely unknown; b) the value of the biodiversity of these environments has so far been neglected; c) there are no applicative tools for the analysis of the conservation value and the degree of threat of the invertebrate communities of these environments.

The innovative value of the project requires that the results obtained must be disseminated as much as possible towards potential users, but also towards the

authorities responsible for the management of aquatic environments, both at national and international levels. Furthermore, it is important that the maintenance and updating of the AQUALIFE package is ensured, so as to make it an effective tool in the long term and thus to guarantee the sustainability of the entire project.

In order to achieve this objective, a maintenance and communication strategy has been developed, articulated in the following points:

1. Maintenance of the AQUALIFE package
2. Disclosure through the media
3. Dissemination in the technical / scientific world
4. Training of potential users
5. Support to interested authorities, citizens, students and so on.

### **1. Maintenance of the AQUALIFE package**

The maintenance of the AQUALIFE package is guaranteed by the maintenance of the AQUALIFE PROJECT website and by the post-LIFE support offered by the Stygobiology group of the University of L'Aquila (Italy).

### **2. Disclosure through the media**

This communication action may be carried out by using the website of the beneficiary of the project (The Gran Sasso-Laga National Park) and eventually by recall or newsletters announcing new publications as outputs of the AQUALIFE project, thus giving the opportunity to advanced technicians or stakeholders (ARTA, APPA, Distretto dell'Appennino Centrale, other National Parks and in general protected areas) to know new information coming from the activities of the project and/or via dissemination of the results, the Facebook site of the project, newspapers, etc.

### **3. Dissemination in the technical / scientific world**

A relevant tool for dissemination, as mentioned before, is the face-to-face Communication. Dissemination will be done by means of seminars, congresses, and of

course, written tools, as, for example, scientific publications after – LIFE. Several publications are planned for describing the rationale of the software, the articulation of the conservation priority index, etc. Each publication will be published by expressly mentioning the LIFE code AQUALIFE as done during the project. Seminars will be done when required, and full-day deep immersion stages for interested users at the University of L'Aquila will be organized. Students will be continuously involved in *lessons learned* of the several steps of the AQUALIFE project. As post-LIFE dissemination action plan, the Scientific Responsible of the project has already assigned 1 bachelor thesis (presentation planned for 16 December 2018) and 3 experimental theses for going inside in the Theoretical Ecological Risk, for refining or validating the methodology and the conceptual frame adopted.

A new project has been submitted by UNIVAQ under the PRIN call following the large and consistent bases offered by the AQUALIFE project. The Majella National Park is proposing a joint collaboration for studying the GDEs in their area for which nothing is known about the GDE biodiversity and its conservation status.

#### **4. Training of potential users**

The UNIVAQ staff is already preparing a publication dealing with the Biodiversity Conservation Concern Index applied to a dataset of the target area, the Abruzzo region. Recently, the scientific responsible has been contacted by the international Journal WATER as Guest Editor of a special issue dealing with risk assessment in several kind of freshwater bodies. On this occasion, the staff decided to publish also the rationale of the Software AQUALIFE, and other contributions in collaboration with the ISE-CNR of Florence on the ecotoxicological effects of some pollutants found in groundwater and GDEs for refining or validating the theoretical ecological risk. The LIFE project SILIFFE is interested in networking (post-networking) with the AQUALIFE project, and as post-LIFE dissemination a communication of the AQUALIFE project will be presented by a member of the AQUALIFE team (together with the CNR) on 16 November 2018; and the same is for the LIFE project

RISORGIVE and both teams went to say that they are interested in a meeting with the UNIVAQ staff for a correct use of the AQUALIFE software. The same request has already been submitted by the Distretto dell'Appennino Centrale, asking for a meeting with the UNIVAQ working group. A recall to the EEA will be also done, as it was done during the project but this contact needs further reinforcement. The University of Torino (Prof. Barbara Leone) is planning with UNIVAQ an "AQUALIFE approach" for a large set of wells in the alluvial aquifer of a sub-basin of the Po River (northern Italy).

#### **5. Supporting information to interested authorities, citizens, students.**

An email address has been created to assist with the use of the AQUALIFE package: the e-mail address for the use of the software was provided in the project website: [dianamariapaola.galassi@univaq.it](mailto:dianamariapaola.galassi@univaq.it) to the link in the home page of the project website: "SOFTWARE CONSULTATION ASSISTANCE". Short addressed meeting will be organized with the support of the Beneficiary of the project, the University of L'Aquila, and also in occasion of the Orientation of students coming from primary and secondary schools for showing the transferability of the AQUALIFE SOFTWARE and its main implication in protecting habitats and species. Basically these students are quite unaware of the existence of the groundwater ecosystems and of the surface GDEs and how much and unique invertebrate fauna they host across Europe and outside the European Community. In the University of L'Aquila, the description of the project in frontal teaching and on the field will continue over at least 4 years.