## Study on the Economic value of groundwater and biodiversity in European forests

for the European Commission, Directorate General Environment

by

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## **Executive summary**

National and international attention for the vulnerability of water systems is increasing, as in more and more regions across the globe, drought conditions have been exacerbated if not created by increased population density and land development, which, in turn, may have been made even worse by global warming, resulting in record-setting droughts.

From a European perspective, over the past thirty years, droughts have dramatically increased in number and intensity in the EU. Recent trends show a significant extension of water scarcity across Europe. In a context where changes in climate are foreseen, this trend is expected to continue and even worsen and the EU states that a number of challenges have to be addressed: full implementation of the Water Framework Directive (WFD), ineffective water pricing policies in EU member states, water saving strategies and initiatives, integration of water-related concerns into water-related sectoral policies, as well as collecting information and creating knowledge.

Ecosystems provide a wealth of services that are fundamental for proper environmental functioning and economic and social development. While the demand for these services, including provision of clean freshwater is continually increasing, the capacity of ecosystems to provide such services is hampered by their ever-growing degradation.

The availability and quality of water in many regions of the world are more and more threatened by overuse, misuse and pollution and it is increasingly recognised that this is strongly influenced by

- is likely to be sustainable, as it depends on the mutual self-interest of service users and providers and not on the whims of government or donor funding; and
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However, in order to tap the full potential of the WFD for the development of such PES schemes, it has to be clarified that:

• Forest ecosystem services should be used for the

• To protect watershed areas and to enhance the water quality to achieve a good ecological status, a strong link can be made between the Water Framework Directive and LIFE+, as the LIFE+ offers funding opportunities to invest in improvement of environmental protection.

Various EU policy and instruments have to be combined to create complementary and cross-cutting methods for establishing payment for ecosystem services in relation to groundwater and forests.

There are two complementary types of PES schemes, which are: 1) investments, such as the transformation of forests and reforestation and 2) those that are related to maintenance and management of the existing ecosystems.

Under the current EU regulations, integration of environmental priorities in their spending programmes is not an obligation for individual member states. Therefore it is highly important that efforts are made to raise awareness with all parties involved, for the opportunities of PES schemes at a member state level. Rather than creating legal rights and obligations for compensation of forest owners for delivering the service of clean water, one should be offering voluntary schemes of incentives. EU Member States should be encouraged to follow this advice, taking into account that there are major differences among member states with regards to groundwater ownership, internalization of management costs of water protection forests into water pricing and the sharing of income generated by water use.

To conclude the analysis of opportunities for the development of PES based on existing EU policy and funding instruments leads to three options:

1. Use existing policies and regulations to introduce PES schemes.

2. Introduce changes to existing policies and regulations, to be adopted by Council, in order to better reflect the opportunities for PES with cross-linking the different policy areas. This also includes reviews of existing regulations, such as the CAP Health check.

3. Design a comprehensive scheme or new Directive for PES.