

Barriers and issues in providing integrated scientific support for EU policy



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Throughout the European Union (EU), high concentrations of nitrates and pesticides are among the major polluting components of drinking water and have potential long-term impacts on the environment and human health. Many research projects co-funded by the European Commission have been carried out, but the results often do not influence policy making and implementation to the extent that is duly justified. This paper assesses several issues and barriers that weaken the role of science in EU policy making and EU policy implementation in the case of agricultural impacts on drinking water quality. It then proposes improvements and solutions to strengthen the role of science in this process. The analysis is conceptual but supported empirically by a desk study, a workshop, and complementary individual interviews, mostly with representatives of organizations working at the EU level. The results indicate that perceived barriers are mostly observed on the national or regional level and are connected with a lack of political will, scarce instruction on the legislation implementation process, and a lack of funding opportunities for science to be included in policy making and further EU policy implementation. In response to that, we suggest translating scientific knowledge on technological, practical or environmental changes and using dissemination techniques for specific audiences and in local languages. Further, the relationship between data, information and decision making needs to change by implementing monitoring in real-time, which will allow for the quick adaptation of strategies. In addition, we suggest project clustering (science, policy, stakeholders, and citizens) to make science and research more connected to current policy challenges and stakeholder needs along with citizen involvement with an aim of establishing sustainable long-term relationships and communication flows.

The objective of this study is to analyse and discuss the role of science in EU policy making and implementation processes concerning the agricultural impact on drinking water quality. Broadly speaking this concerns the WFD, DWD, GWD, ND, and DSUP¹. Specifically, we want to identify barriers that hinder the science and research sector from having effective dialogue and cooperating in knowledge sharing from policy making to actual EU policies implementation on the member state or regional level. We argue that the science/research sector's role in policy making and implementation is vague and dispersed across different stages of the process. It also has different roles in the process, as an initiator of policy, a follower of policy or political strategies, or a participant in the public discussion. Our societal aim of this analysis is to suggest possible long-term system improvements and to encourage scientists and policymakers to develop new solutions for improving communication flow. The study, while conceptual, is based on empirical data collected by a desk study, a workshop with different stakeholders, and individual interviews with EU-level stakeholders.

¹ WFD - Water Framework Directive; DWG - Drinking Water Directive; GWD - Groundwater Directive; ND - Nitrates Directive; DSUP - Sustainable Use of Pesticides.



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A desk study was carried out as a basis for the workshop and interviews. The desk study focused on the following topics: (i) agriculture and water in the EU, (ii) evidence-based policy making in the EU, and (iii) implementation of the Water Framework Directive. A non-systematic review of relevant scientific literature was carried out using scientific databases such as Scopus, Web of Science, Science Direct and Google Scholar. Other information was obtained from websites of the EU and the internet.

A workshop on the “Evaluation of the issues and barriers around providing integrated scientific support for EU policy” was held in Brussels, Belgium, on 6 December 2017. The workshop was led by a FAIRWAY project partner, the University of Ljubljana. The workshop method was based on a World Café workshop type with a duration of 3 h. The primary objective of the workshop was to discuss with representative EU-level actor organizations the role of the science and research sector in EU policy making and EU policies implementation related to drinking water resource protection against diffuse pollution of nitrates and pesticides originating from agriculture.

The participants were asked about:

- the main issues on the EU level related to drinking water resource protection against diffuse pollution of nitrates and pesticides from agriculture in the EU,
- the main barriers,
- the Relationship between Science and Policy and its Reflection in EU Policy,
- Improvements and possible Solutions for Enhancing the Role of Integrated Scientific Support in EU Policy Decision Making.

The participants highlighted the following main issues (Figure 1):

- Lack of knowledge about agricultural impacts on water quality;
- Harmonization of legislation needed at the EU level, with water protection currently a very local issue;
- Lack of coherence between policies;
- Synergies and trade-offs between goals and pathways of pollution;
- Lack of balance between targets and objectives of EU policies;
- A time lag between taking measures and changes in water quality;
- Fragmented and not easily available data;
- Financial questions about available budgets and allocation of the costs.

Interviewees highlighted especially two main issues related to drinking water resource protection in the EU: (i) There is a general lack of knowledge about the relationship between agriculture and water quality, which calls for a stronger contribution from science, and (ii) drinking water protection is a local issue with local characteristics. They also indicated that a lack of communication between water authorities, people responsible for RBMPs, the farming community, and agricultural departments is an issue. All agreed that more bottom-up, inclusive processes should be stimulated in the field of water resource protection.

The main barriers that interviewees mentioned are the following (Figure 1):

- Lack of political will to impose costs on farmers, and limited financial means needed to apply specific measures;
- Lack of awareness of the required actions by farmers to achieve water quality targets and a need for capacity in advisory services;
- Lack of communication or synchronization of languages between scientists and policy makers;
- Site-specific aspects in taking effective measures, e.g., differences between member states and regions;
- A time lag between taking measures and subsequent changes in water quality;
- Not enough farmers involved.

In relation to the question on how the relationship between science and policy is reflected in EU legislation three statements were highlighted (Figure 1): 1) public participation could be dangerous because if something is scientifically correct, we cannot discuss it and change it to suit the popular sense (populism, nationalism, corporatism); 2) the formal relationship between science and policy in the EU directives is to be defined in the national transposition, but the policy text does not specify how this should be done. This is a decision of the member states. There is a clear link between science and policy in, for example, the ND and the WFD; 3) there should be more opportunities to enhance the role of scientific expertise in policy making.



Figure 1: Key points for Questions 1, 2, 3 and 4 on the role of science in EU policy making and implementation related to drinking water resource protection against diffuse pollution of nitrates and pesticides from agriculture in the EU.

Based on study results, we argue that establishing project clusters (science, policy, stakeholders, and citizens) for up-to-date policy challenges and stakeholder needs and with citizen involvement is a viable solution to enhance the role of science in the EU integrated policy making process. The aim is to establish longer-term relationships and communication flows between scientists and policy makers, which will contribute to achieving more sustainable management of ecosystem (water, food) services.