Global Soils: EU

Links between the Water Framework Directive, the Thematic Strategy on Soil Protection and Research Trends with Focus on Pollution Issues

Philippe Quevauviller and Claudia Olazabal

European Commission, DG Environment (BU-9 3/121), rue de la Loi 200, B-1049 Brussels, Belgium
E-mails: philippe.quevauviller@cec.eu.int (WFD) and claudia.olazabal@cec.eu.int (Soil Strategy)

Introduction

Soil and terrestrial water are two closely interrelated resources, which should be approached together in an integrated fashion. In this respect, the 6th Environment Action Programme (2002–2012)[1] sets clear environmental objectives that are built up on scientifically sound-based action plans, which are promoting integration of scientific disciplines, policies, and stakeholder consultations for a better environmental protection through a series of thematic strategies. One of these, the Thematic Strategy on Soil protection[2], is presented in the paper by Winfried E.H. Blum on p. 242. A legislative framework related to water policies has been developed within the last five years, i.e. the Water Framework Directive (Directive 2000/60/ED)[3]. Both the WFD implementation and the development of the Soil Thematic Strategy require close interactions with all interested stakeholders, including the scientific community. This short paper gives some comments on a number of pollution issues that will be faced within the forthcoming years in both areas.

The Water Framework Directive

The EU Water Framework Directive (2000/60/EC) results of more than 12 years of consultations among EU Member States and stakeholders (including the scientific community). It has been conceived as an integrated water management framework that considers water as it flows through river basins to the sea. In other words, WFD provisions apply to all waters – inland surface waters, ground waters, transitional (estuarine) and coastal waters. An integrated approach was introduced for water quality and water quantity matters, and the Directive introduced a framework for water management based on river basin districts. The overriding objective of the policy is the achievement of 'good status' of all waters by the end of 2015. This objective is closely related to strategies to protect waters against pollution. The WFD implementation follows a stepwise approach, which will start by a transposition of the directive into national laws (end of 2003), the identification of river basin district, the delineation and characterisation of water bodies the intercalibration of ecological status for surface waters and an analysis of pressures and impacts (end of 2004), the start of the monitoring programme (end of 2006), the first river basin management plan (2009) and the operational start of the programme of measures (2012). This implementation is supported by the establishment of expert working groups within the so called 'Common Implementation Strategy' (CIS). This CIS has enabled the development of a series of ten guidance documents in 2002–2003 that have been recently been published and are publicly available. In the new CIS organisational set-up (2003–2004), working groups are currently discussing issues related to the ecological status of surface waters (Working Group 2A); integrated river basin management (Working Group 2B), including economic issues and a pilot river basin exercise aiming to test the above mentioned guidance documents; groundwater (Working Group 2C); and reporting (Working Group 2D). This set-up is completed by an Expert Advisory Forum (EAF) which discusses policy development related to priority substances. These working groups and EAF will meet at regular intervals in the frame of expert meetings or workshops in 2004, with the aim to exchange expertise and good practices and reach a common understanding on WFD implementation issues. Further information on the implementation progress of the WFD, including the guidance documents, is available through Internet at http://europa.eu.int/comm/environment/water.

The Soil Strategy

The purpose of the Soil Thematic Strategy is to build on the political commitment to protect soil to the same extent as other environmental media such as water or air and to promote soil sustainable use. This will be done by developing a framework which will allow preserving the multifunctionality of soil as stipulated in the 6th Environment Action Programme. Owing to the complexity of the soil-related issues, the development of an EU soil protection policy will take time and involves a wide range of consultations and integration of soil protection aims into several policies, including water policies and EU research programmes. On the short term, a legislative basis for soil monitoring will be developed so that a knowledge-based approach can be further developed, aimed at delivering soil protection and sustainable use. In this respect, the first communication (COM(2002)179 final) of the Soil Thematic Strategy identified eight major

[1] Official Journal of the European Communities, OJ L 242, 10 September 2002, p.81
[2] Communication on Towards a Thematic Strategy for Soil Protection, COM(2002)179 final
[3] Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy, OJ L 327, 22 December 2000, p.72

threats for the soils in the EU: erosion, decline in organic matter, contamination, salinisation, compaction, loss of biodiversity, sealing and landslides and flooding. To support the Commission in the development of the soil policy, a structure of five expert Working Groups has been created. These groups are addressing contamination; organic matter (and biodiversity), erosion (including salinisation, compaction, floods and landslides), and monitoring. In addition, a working group examines what are the research needs in support of these four areas. The working groups have been operational since April–May 2003 and a state of progress has been discussed, on the basis of interim reports on each theme, at the 2nd meeting of the Advisory Forum on the Soil Thematic Strategy which was held in Brussels on 11th November 2003. The aim of these consultations and drafting activities is to support the development of a soil strategy for Europe (covering aspects of contamination, erosion and organic matter) and a proposal for a soil monitoring directive by the end of 2004. This package of proposals will also include two other on-going policy developments, namely the initiatives on the sewage sludge directive and a new directive on biological treatment of biodegradable waste (also known as the compost directive). As discussed below, these developments are closely connected to the WFD requirements.

Links between the WFD and the Soil Strategy

It is obvious that soil is not solely 'a potential source of pollution' to water. As it also acts as a filter and a buffer for some water bodies, it represents a non-renewable resource as such, which performs a large variety of essential functions and which must be protected as explicated in the Communication on the Soil Thematic Strategy. Nevertheless, the links between both policies discussed in this article are mostly concerning point and diffuse pollution sources which may affect the aquatic ecosystems. Those pollution sources may endanger the status of surface and ground waters through pressures from activities on or in the soil. As mentioned above, the WFD requires that Members States perform an analysis of pressures and impacts and proceed with a delineation and characterisation of all water bodies before the end of 2004. This first operational step of the WFD will be based on existing knowledge and on-going studies which will enable to characterise water bodies on the basis of their morphology, hydrodynamics, physicochemistry, geology, biological conditions (for surface waters) and to identify major pressures (pollution sources) and impacts. The evaluation of interactions between groundwater and directly dependent surface water ecosystems or terrestrial ecosystems will have also to be carried out. In this respect, the knowledge of water body's neighbouring soils will of key importance for both the characterisation process and the analysis of pressures and impacts. It is certainly where interactions with the Soil Thematic Strategy will be essential, i.e. knowledge of soil functionalities, contamination, organic matter, erosion, forms the backbone of some of the major aspects of water body characterisation (e.g. interactions with soils are clearly mentioned as a key feature of groundwater body characterisation). Worth mentioning is the fact that sediments are fully integrated into the soil strategy, which also represents a clear link with the WFD. Contaminated sediments represent a pollutant sink which may endanger the ecological and chemical status of surface waters and, in addition, polluted sediments may be returned to land due to floods and disrupt soil functions. This stresses again the need to consider water-soil interactions as a closely linked system. Finally, other obvious links will exist among the design of the WFD monitoring programme (which will have to take soil issues into account) and the development of the soil monitoring directive proposal. In the future, these two policies will be closely interlinked, making sure that various aspects are fully integrated. One of the issues concern scientific findings and research, which is discussed below.

Links with Research Trends

Research activities represent a key element of policy development. This is clearly outlined in the 6th Environment Action Programme which states that "sound scientific knowledge and economic assessments, reliable and up-to-date environmental data and information and the use of indicators will underpin the drawing-up, implementation and evaluation of environmental policy". In this view, one of the seven thematic priorities of the 6th Framework Programme for Research and Technological Development (Priority 6: Global change and ecosystems) includes a section on 'Water cycle, including soil-related aspects', the objective of which is to understand the mechanisms and assess the impact of global change and in particular climate change on the water cycle, water quality and availability, as well as soil functions and quality. Besides projects previously funded under the 5th FWP, newly funded projects under the first call of the 6th FWP should enable to generate a high scientific output in support of water and soil policy development. This is complemented by projects selected under the first call of the so-called Priority 8 (research in support of Community policies) in which dedicated topics have been identified by the DG Environment in support, in particular, of the WFD implementation. The list of projects which might contribute directly to the policy process would be too long in the context of this short paper (information on specific EU-funded projects may be obtained through the Europa Website: http://europa.eu.int/comm/research/ and/or via CORDIS). As a final remark, one should note that, whereas the link between research and policy does exist, the communication among policy makers and the scientific community is far from being satisfactory, and there is room for improvements in this respect. In other words, research results are often not taken up in the policy development or implementation process because either they are not timely (incompatibility between the policy and research agendas) or because they are not sufficiently 'digested' by the scientific community and presented in a tailor-made fashion to be directly usable by policy makers. The situation is improving but additional efforts are needed to ensure that research planning, coordination and dissemination of results and information will systematically respond to policy needs in the areas concerned.

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