

## WFD and agriculture activity of the EU: first linkages between the CAP and the WFD at EU Level

V. Mohaupt\*, G. Crosnier\*\*, R. Todd\*\*\*, P. Petersen\*\*\* and T. Dworak\*\*\*\*

\*German Federal Environmental Agency, P.O.Box 1406, D-06813 Dessau (E-mail: [volker.mohaupt@uba.de](mailto:volker.mohaupt@uba.de))

\*\*European Commission, Environment Directorate, Avenue de Beaulieu 9, B-1160 Brussels, Belgium (E-mail: [gilles.crosnier@cec.eu.int](mailto:gilles.crosnier@cec.eu.int))

\*\*\*Department for Environment, Food & Rural Affairs (DEFRA), Water Quality Division, 55 Whitehall, C/O 3-8 Whitehall Place, SW1A 2HH London, UK (E-mail: [russell.todd](mailto:russell.todd); [poul.petersen@defra.gsi.gov.uk](mailto:poul.petersen@defra.gsi.gov.uk))

\*\*\*\*Ecologic - Institute for International and European Environmental Policy, Pfalzburger Strasse 43/44, D - 10717 Berlin, Germany (E-mail: [dworak@ecologic.de](mailto:dworak@ecologic.de))

**Abstract** Within the “WFD and agriculture activity” both communities agreed to co-operate during implementation of the Water Framework Directive (WFD) and further development of the Common Agricultural Policy (CAP) at EU, Commission and the Member States levels. In intensive discussions including two congresses and biannual working group meetings, seven information reports were produced. Rural Development programmes are unanimously considered to be very powerful instrument to support WFD implementation. However, limited budgets, combined with the large extent of agricultural pressures will considerably restrain the results this instrument might deliver. Limited effects are also expected from the cross-compliance standards, mainly because: the standards do not cover all WFD aspects, and the existing legislation is not implemented with the same rigour in all the Member States. WFD provides additional powerful tools (River Basin Management Planning and Water Pricing discussion) to improve the situation, but the timetables of WFD and CAP do not fit each other. The activity should be continued with an intensive discussion on case and success stories in all the mentioned tools informing both policy areas for the planned evaluation of cross-compliance in 2007, and a mid-term evaluation on rural development in 2009.

**Keywords** Agriculture; Common Agricultural Policy; Europe; rural development; Water Framework Directive

### Introduction

Many surface and groundwater bodies in Europe are at risk of not meeting the environmental objectives of the Water Framework Directive (WFD). Agriculture is one of the main causes of this by polluting water with nitrates, phosphates and pesticides and changing morphology for water regulation. Other important reasons are morphological alterations and remaining pressures from domestic and industrial point sources. Agriculture and morphology are addressed by two new activities within the Common Implementation Strategy of the Water Framework Directive.

The WFD and agriculture activity of the EU focuses on how the reforms of the Common Agricultural Policy (CAP) can contribute to the achievements of the WFD objectives, how the authorities working on CAP and WFD can co-operate more closely, and how the farming community can achieve its objectives with a more water protecting production and in a co-operative manner. The activity has been led by the EU Commission, UK and in the future additionally by France. A steering group with representatives of water and agricultural administrations of all the Member States and stakeholders meets twice a year. Congresses under the EU presidencies of UK and Austria gave audiences for approximately 200 people each to increase awareness in both communities (WFD and Agriculture Conferences, 2005 and 2006).

### Agricultural pressures and impacts

Besides the industrial and household sectors, the agricultural sector poses a significant pressure on both surface and groundwater in terms of quality and quantity. Nitrate leaching *via* groundwater as well as phosphorous and pesticide inputs from run-off, soil erosion and drainage are the main pressure on water bodies leading to a potentially significant risk of failing to meet the WFD objectives. Extensive abstraction of water for agricultural purposes, especially in the southern EU Member States, increases the risk of over-exploitation of the available water resources. In addition, hydro-morphological changes due to agricultural activities such as drainage and land reclamation pose significant pressures on surface water bodies (EEA 2005a,b; Herbke *et al.*, 2005; JRC 2005 WRc 2005;).

These pressures can have manifold effects, among which are (Strosser *et al.*, 1999):

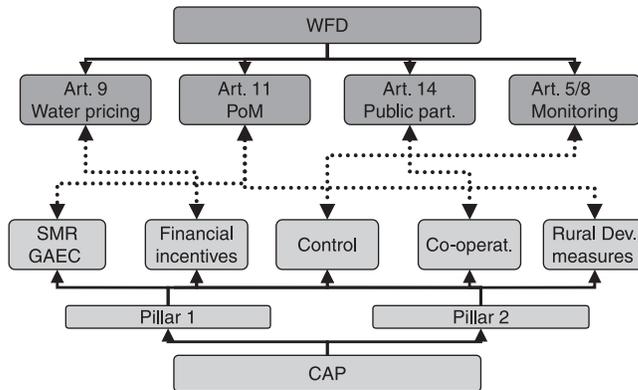
- increased pollution of ground and surface waters,
- eutrophication of rivers, lakes, transitional waters and coastal waters mostly due to increased phosphate and of the sea mostly due to increased nitrogen levels,
- problems related to water treatment and risks of adverse effects on human health,
- reduction of groundwater and river flow levels as a direct result of water abstractions,
- increased negative impacts on natural resources resulting from the construction of dams and the diversion of watercourses for irrigation purposes,
- secondary effects such as risks of erosion, the disappearance of wetlands, oxygen deficits in rivers leading to the possible extinction of species of flora or fauna or the gradual salinisation of groundwater in coastal areas, and
- increased risks of flooding due to deforestation, drainage and installation of polders for agricultural purposes.

These pressures need to be addressed by future measures for protecting the water quality and resources in order to meet the environmental objectives of the WFD. The long-term protection of water resources makes sense not only environmentally but also economically. The agricultural sector has an additional strong incentive to reduce the pressures on water bodies, as a clean and ready source of water is essential for agricultural production.

### Overview of the linkages between CAP and WFD

In Europe, both water and agricultural policies have faced challenging developments during the last few years, following different objectives, which sometimes support each other and sometimes conflict. Nevertheless, both policies remain in the implementation stages and are still being elaborated and reviewed, offering potential for integration and harmonisation. Figure 1 outlines current possibilities to link CAP and WFD instruments and mechanism; further details have been given by Herbke *et al.* (2006).

However, the CAP and WFD policies follow specific timetables that are not currently integrated with each other. There are mismatches, but also windows of opportunities to better link both processes (Table 1). While CAP is going to start its next Rural Development (RD) Plans in 2007, the River Basin Management Plans have to be ready at the end of 2009. Therefore, actual RD planning has to be done with the help of the results of the characterization, risk and economic analysis reports prepared in 2004. The 2007 and 2008 developments offer a next large window of opportunity to better link both policies. This allows for the establishment of continuous and tailor-made solutions in the near future. But even when CAP is going to carry out its mid-term review and change its plans during 2009, WFD planning will be in its last phase. Therefore, further close contact is needed between both communities in the next years.



Source: Dworak et al., 2006.

**Figure 1** Possible links between the CAP and the WFD instruments and mechanisms. PoM = Programme of Measures, SMR = Statutory Management Requirements; GAEC = Good Agricultural and Environmental Conditions)

**Opportunities of the Common Agricultural Policy**

One of the major elements of the last CAP reform was “decoupling”. The *decoupling of payments* to farmers from production levels and the coupling on land reduces incentives for intensive production as there is no longer a direct link between production and the amount of payments per hectare. Farmers will produce goods more according to market

**Table 1** Timetables of the CAP and the WFD: Windows of opportunities to better linkages

Year	CAP	WFD
2000	<b>Agenda 2000:</b> Approval of Rural Development Programmes	<b>Adoption</b> and coming into force of the WFD
2003	<b>CAP Reform:</b> decoupling, cross-compliance, modulation, strengthened rural development policy	
2004		Characterisation, <b>pressures and impacts</b> analysis (Art. 5)
2005	<b>Cross-compliance</b> compulsory, including Good Agricultural and Environmental Condition (GAEC)	
2006	End of 2000–2006 Rural Development programming period Final approval of <b>EU strategic guidelines RD national strategies and measures:</b> Drawing up and submission to Commission of	<b>Monitoring</b> network must be established (Art. 8 WFD) Dec 2006: Publication of <b>timetable and working programme</b> for river basin management plans (Art. 14)
2007	Start of new Rural Development Programmes Report on cross compliance	Dec. 2007: Interim report of <b>significant water management issues</b> (Art. 14)
2008	<b>Review of 2003 CAP Reform</b> (Art. 8, 1782/2003/EC)	Dec. 2008: Public consultation on the <b>river basin management plans</b> (according to Art. 14 WFD)
2009		Dec. 2009: River basin management plans (Art. 13)
2013	End of 2007–2013 Rural Development programming period	
2015		Dec. 2015: First check, if <b>good status</b> is achieved (Art. 4)

Source: Dworak et al., 2005 (changed),

demand and production decisions on a farm level will be based on profit margins achieved on the market. Other factors such as prices for fertiliser, water or seeds will have a more prominent impact than they have had until now. This could result in lower or higher environmental impacts, depending on the local conditions, the incentives from the market and the type of business itself (e.g. small–large scale farmers, organic farming). As some products are still coupled (e.g. rice) and the Member States have the possibility for partial decoupling, there is still a distortion on production decisions, keeping an incentive for water-consuming crops even if it is lower than the “old” CAP. Decoupling started in 2003 and will be fully implemented in 2013.

Further, mandatory cross-compliance requirements regarding water-related EU directives (nitrates, groundwater and pesticide licensing (Nitrates Directive (Articles 4 and 5), Groundwater Directive (Article 3); other water relevant directives included in cross-compliance are: the Sewage Sludge Directive (Article 3), the Conservation of Wild Birds (Articles 3, 4 (1), (2), (4), 5, 7 and 8), and the Conservation of Natural Habitats, Wild Flora and Fauna (Articles 6, 13, 15, and 22(b))).) are likely to add further positive effects. The second part of cross-compliance includes the requirement that all agricultural land for farmers claiming payment should be kept in *Good Agricultural and Environmental* condition. These soil protection demands have a positive side-effect on the reduction of diffuse pollution. However, these directives and demands do not cover all aspects of the WFD and the Member States do not implement the legislation involved with the same effort. Therefore, farm advisory systems should be extended, as they help to deliver a better acceptance and implementation of environmental legislation. One of the major challenges regarding cross-compliance is that “certain elements are objectively difficult to check (e.g. prohibition of the substances of Annex I of the Directive 80/68/EEC “groundwater”, slope rate, etc.)”. Further, “checks are long and cover many elements: visits of numerous plots, checking of documentation, etc. This is burdensome for” the administration and “the farmer who has to be involved closely” (European Commission, 2006). In order to better support the WFD, a stepwise improvement should be discussed, starting with a review of the present system. Further details are given in Muessner et al. (2006).

#### Rural Development (RD) programmes

The WFD implementation will be supported in the next programming period for rural development 2007–2013, especially within the agro-environmental programmes under Art. 39 in Axis 2 (of four) on “Environment and Land Management”. Many items of earlier programmes have already been related to water protection and most of the effective technical measures (see Figure 2) were supported in some Member States. A minimum of 25% of the national envelopes has to be spent on Axis 2. The EU co-financing rate is a maximum of 55% (80% in convergence regions).

The EU stressed its wish to support WFD implementation with RD programmes by introducing the directive into the compensatory payments for mandatory obligations (Article 38 of the regulation on the European Agricultural Fund for Rural Development). Unfortunately, a questionnaire analysis (Marsden et al., 2006) showed that none of the Member States have considered using Art. 38 in the first programmes of the new period 2007–2013. Probably water and farming authorities need more time to select sites where this measure should be prescribed in order to meet the WFD objectives and to define appropriate measures. Water protection issues could also be tackled with support under several other Articles, e.g. Art. 20 b (vi) (natural disaster and prevention actions), Art. 21 (vocational training and information actions), Art. 24 and 25 (advisory services), Art. 26 (modernisation of agricultural holdings), Art. 31 (meeting standards based on community legislation), Art. 43–45 and 47 (afforestation) and Art. 57 (conservation and upgrading

EFFECTIVE TECHNICAL MEASURES IN AGRICULTURE (based on: IWA DiffPoI Dublin-Resolution, 2003)
<p>Effective measures to reduce local and regional nutrient and pesticide problems including:</p> <ul style="list-style-type: none"> <li>◦ Optimised nutrient management especially of animal manure by           <ul style="list-style-type: none"> <li>• nutrient management plans supported by certified experts based on soil tests and crop requirements with due recognition to site vulnerability,</li> <li>• establishment of appropriate livestock density limits oriented on fertilization necessities,</li> <li>• livestock diets adapted to avoid luxury consumption so that excretion nutrient content can be reduced,</li> <li>• improved manure management systems on farms (environmental sound storage and application according to crop requirements).</li> </ul> </li> <li>◦ Soil coverage to protect against leaching and erosion aiming crop or mulch cover at all seasons by           <ul style="list-style-type: none"> <li>• reduced tillage schemes protecting against erosion including where possible no tillage in autumn to reduce nitrate mobilisation before winter,</li> <li>• green plants winter cover on arable land using excess nitrogen or at least mulch cover,</li> <li>• early development of leaf cover in root crops,</li> <li>• intercrops and under sown crops.</li> </ul> </li> <li>◦ Integrated landscape water management strategies to reduce emissions to water (e.g. buffer zones, wetlands, ponds)</li> <li>◦ Reduction of pesticide emissions by           <ul style="list-style-type: none"> <li>• correct pesticide application rates and methods,</li> <li>• disposal of spray mixture residues on arable land, and return of empty containers to the pesticide supplier.</li> </ul> </li> </ul> <p>Ecological farming combines most of these technical measures and is therefore the most preferable farming system.</p>

**Figure 2** Effective technical measures in agriculture

of rural heritage). Under the latter morphological restoration projects might be possible which often require buffer strips to give the river room for development and restoration. Further details are given in Dworak *et al.* (2005).

National strategy plans (Arts. 11 and 12) are negotiated at the moment with the EU and regional individual programmes (Art. 15) within the Member States. Water protection aims to compete there with a long list of other goals within Axis 2 (e.g. with Natura 2000 and climate protection mentioned in the same Art. 38; with all other environmental items under Art. 39) and also with the objectives of Axis 1 (improving competitiveness of farming and forestry), Axis 3 (improving quality of life and diversification) and the LEADER Axis (Streamlining local development strategies, Arts. 61 and 62). A European (Art. 67) and national networks (Art. 68) shall make RD programmes more transparent and annual summary progress reports (Art. 13 (2a) and Art. 82) will form the basis of next reviews.

There is a high potential for RD programmes to support WFD implementation due to the wide set of measures provided, the positive response from farmers and the possibility of tailor-made approaches on the local level. However, partial assessments and qualitative interpretations show that the current (2000–2006) and next, even lower (2007–2013) RD budgets are insufficient to provide the necessary funds to meet the WFD objectives at a broader scale. Thus, it is important to consider territorial priorities and synergies between the measures, as well as funding outside the CAP (e.g. water pricing, voluntary modulation).

*CAP reviews.* The review of cross-compliance in 2007 will provide an opportunity for further reflection of WFD needs and possibilities to implement and control some of them as part of statutory mandatory requirements, or as part of the good agricultural and environmental conditions. A mid-term review of rural development programmes before 2009 could be used for further refinement of water-related payments according to most cost-effective combinations of measures selected within the WFD River Basin Management Plans.

## Opportunities under the WFD

### River Basin Management Planning

With the steps “characterisation, pressures and impacts, risk and economic analysis” (Art. 5, fulfilled in 2004), “monitoring” (Art. 8, to be designed 2006) and “planning with

public participation” (2007–2009) the WFD provides a very powerful planning scheme aiming at searching the “most cost-effective solutions” to meet the directives objectives in 2015 or later (if necessary). More than a dozen guideline documents regarding single steps and items of this process were produced within the Common Implementation Strategy (CIS) of the EU. The strategy formed a network of water managers and specialists and supported a common understanding about the WFD around Europe.

#### **Water pricing**

WFD urges the Member States to charge prices for water uses including their environmental costs. In the case of agriculture water usage includes water abstractions that can cause pollution of waters by nutrients and pesticides, drainage and stream maintenance, and even soil compaction. These uses introduce costs for other water users by pollution, destruction of habitats or raising of floods.

Water pricing incentives represent a way to address these pressures on water. The current CAP sets incentives on production, even if they are less than before the 2003 reform and the WFD will hopefully set incentives for the sustainable use of water. In order to develop appropriate pricing policies, it is important to have a better understanding of the specific role CAP payments have and how they influence farmers’ decisions. Some of the main incentives from the CAP (e.g. payments covering parts of the financial costs of water services, incentive CAP payments reducing the environmental costs related to a water use, payments increasing the potential added value of producing a certain crop and thus potentially increasing the resource costs of a water use) have to be discussed in this context (Interwies *et al.*, 2006).

As current instruments provided under the CAP will not alone be sufficient, it will be necessary to consider instruments outside the CAP (e.g. co-operative agreements, water pricing) and/or additional funds to tackle with the current pressures from agriculture. Regarding additional funding, in general there are two main options either to make use of polluter-related financial instruments (e.g. water pricing or polluter-related taxes, further modulation from direct payments to rural development) as part of the WFD program of measures or to use funds not directly related to the polluter (e.g. funds charged by the general tax payer, funds charged by the user, such as co-operative agreements with other sectors).

Applying the first option the revenues generated could specifically support adaptation measures in the agricultural sector. This can be envisaged in two ways (Interwies *et al.*, 2006): (i) earmarking revenues for agriculture-related measures as part of the “programme of measures” of the WFD such as water efficiency investments for farmers, (ii) additional financing of rural development measures under the CAP. While the first option is in line with the polluter pays principle of the WFD, the second option should be prioritised before applying for exemptions.

#### **Make the link work: the issue of co-operation**

Effective measures in agriculture are manifold and related to agri-environment, regulation, voluntary agreements, control of water demand, advice and education, co-operative models and local initiatives. In humid climates most effective technical measures can be summarised under the headlines “soil coverage”, “reduced soil cultivation”, “optimized application of animal manure”, and “buffer strips”. The CAP and WFD provide a wide set of possibilities for co-operation and participation between the water and agricultural sectors. These possibilities are of a technical nature (e.g. monitoring for control purposes, farm advisory systems) but also of an organisational nature (e.g. LEADER + , National and EU RD networks) and cover all different levels of action. Co-operation and networking between different authorities and stakeholders, as well as the involvement of

local actors, is vital to ensure successful implementation of the WFD and sustainable agriculture at the same time.

Under the 2005/2006 mandate of the “WFD and agriculture activity” options were explored to bridge gaps between the CAP and the WFD with the detailed assessment of rural development programmes opportunities, the question of cross-compliance standards or the importance of water pricing. This first round also showed its limits as it took place during the negotiation of the national rural development plans, but before the finalisation of the river basin management plans and their associated programmes of measures. When drafting Rural Development national strategies and programmes, the results of the WFD Art. 5 reports were often used to target territories (e.g. sandy soils = leaching risk, pending areas and/or cohesive soils = erosion risk, areas of high nutrient pollution, flood plain areas), objectives and measures. River Basin Management Plans can also have huge impacts on rural development as their measures will deliver economic, social and environmental costs and benefits amongst different actors and territories. Only after checking all possibilities of implementation, the appropriate use of exemptions (firstly postponing of deadlines) should be decided within the River Basin Management Plans.

Indeed, the current window of opportunity for linking both policy areas and for a harmonisation between the CAP and WFD implementation processes is significant. In order to make the best use of this window, co-ordination between the different authorities involved is a key element for the appropriate implementation of the WFD and the future development of CAP towards sustainable agriculture and adequate water protection. The establishment of such a co-ordinated approach requires a capacity building process at all levels. To understand the different traditions of both policies will be a key for a successful implementation in the next few years.

### Open questions

In spite of two years intensive work of the “WFD and agriculture activity” and two congresses several key questions still need to be addressed for 2007–2009, such as the further development of cross-compliance, the detailed “design” of Art. 38 RD, and an assessment of the impacts of new technologies and practices. In particular, the continuation of the exchange of information, in order to identify best practice or “success stories” more will be needed in this period when the first river basin management plans will be drafted. The role of retailers and customers should be discussed with their stakeholders in order to better match their incentives with water protection.

During preparation of the WFD programmes of measures information should be exchanged on the:

- forms of co-operation between the competent authorities and stakeholders at different levels,
- technical measures selected by the Member States,
- territorial targets and criteria for their selection,
- forms of advisory and training systems, demonstration, education, etc.
- results of studies for costs, benefits and effectiveness of the measures,
- sources of funding,
- policy instruments discussed (regulations, voluntary approaches, incentive water pricing, polluter pays principle etc.),
- use of Rural Development Programmes, incl. Art. 38 (payments for WFD mandatory measures)
- effect of cross-compliance,
- WFD exemptions discussed and their justification,

- views about some prospective issues, like new farming systems (e.g. organic and integrated farming) new techniques and technologies (e.g. bio-fuels).

This exchange should provide feedback to DG AGRI and DG ENV for enhanced linkages between the EU CAP and water policies e.g. during the evaluation of cross-compliance in 2007 and a mid-term evaluation on rural development in 2009.

### Acknowledgements

The views expressed in this publication are the sole responsibility of the authors and may not in any circumstances be regarded as stating an official position of the European Commission or individual Member States. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of the information contained herein. The information compiled in this paper is subject to rapid change. The information presented is the status as of June 2006.

### References

- Dworak, T., Karaczun, Z., Herbke, N., Schlegel, S. and Landgrebe, R. (2005). WFD and Agriculture – Linkages at the EU level. Final report about Rural Development Programmes. December 2005.
- Dworak, T., Kranz, N. and Karaczun, Z. (2006). WFD and Agricultural Linkages at the EU Level. Final Report about co-operation and participation at the interface of EU Agricultural and Water Policies. May 2006.
- EEA, European Environment Agency (2005a). Source apportionment of nitrogen and phosphorus inputs into the aquatic environment. Final report, prepared by J. Boegstrand, P. Kristensen and B. Kronvang, National Environmental Research Institute Denmark. Copenhagen: EEA.
- EEA, European Environment Agency (2005b). Agriculture and environment in EU-15 – the IRENA indicator report. Copenhagen: EEA.
- European Commission. (2006). First year of implementation of the cross-compliance, Summary of the answers of the Member States to the questionnaire of the Commission. Brussels, 18.01.2006.
- Herbke, N., Dworak, T. and Karaczun, Z. (2005). WFD and Agriculture – Linkages at the EU Level. Pressures and Impacts, Broaden the Problem’s Scope. Background Paper, Version 3, 12 Oct. 2005.
- Herbke, N., Dworak, T. and Karaczun, Z. (2006). WFD and Agriculture – Linkages at the EU Level, Analysis of the policy and legal linkages between CAP and WFD. Final Paper.
- Interwies, E., Dworak, T., Görlach, B. and Best A. (2006). WFD and Agricultural Linkages at the EU Level. Final Report about Incentive water pricing and cost recovery in the WFD: Elements for linking EU Agricultural and Water Policies. May 2006.
- IWA DiffPol Dublin-Resolution (2003). Resolution from the IWA Congress on Diffuse Water Pollution on “Water Pollution Control in European Agricultural Policy”. 7th International Conference on Diffuse Pollution and Basin Management (DIPCON), International Water Association (IWA), Dublin, 17th – 22nd August 2003. [http://72.14.221.104/search?q=cache:vufpddKF4IoJ:www.iawq.org.uk/pdf/DP\\_resolution.pdf+IWA+Dublin-Resolution&hl=de&gl=de&ct=clnk&cd=5](http://72.14.221.104/search?q=cache:vufpddKF4IoJ:www.iawq.org.uk/pdf/DP_resolution.pdf+IWA+Dublin-Resolution&hl=de&gl=de&ct=clnk&cd=5).
- JRC, Joint Research Centre of the European Commission (2005). FATE research project, preliminary results, personal communication, July 2005.
- Marsden, K., Dworak, T. and Herbke, N. (2006). WFD and Agriculture Linkages at the EU Level, The Development of WFD – Programmes of Measures under the Light of Agriculture, Results of a Questionnaire addressed to the Water Directors and the Pilot River Basins. Final report.
- Muessner, R., Karaczun, Z., Dworak, T. and Marsden, K. (2006). WFD and Agriculture Linkages at the EU Level. Final report about Cross Compliance and the WFD. May 2006.
- Strosser, P., Pau Vall, M. and Plötscher, E. (1999). Water and agriculture: contribution to an analysis of a critical but difficult relationship. [http://europa.eu.int/comm/agriculture/envir/report/en/eau\\_en/report.htm](http://europa.eu.int/comm/agriculture/envir/report/en/eau_en/report.htm).
- WRC, Water Research Centre (2005). Review of the Article 5 Report for agricultural pressures, MS summary report, on behalf of the Environment Directorate General of the European Commission, draft report, April 2005.
- WFD and Agriculture Conferences: UK Presidency (London, 21/22 Sept 2005) (<http://www.defra.gov.uk/environment/water/wfd/0509-conference/index.htm>) Austrian Presidency (Vienna, 2/3 March 2006) ([www.ecologic-events.de/cap-wfd/](http://www.ecologic-events.de/cap-wfd/)).