

BEST AGRICULTURAL PRACTICE IN THE DANUBE BASIN

Introduction of the Concept and Use in the Danube Regional Project Fact sheet

I. The Emerging Concept of “Good Agricultural Practice” in the Implementation of EU Policy and Legislation

Environmental baselines in agriculture are gaining increasing importance *as minimum standards for agricultural support payments, entry conditions for participation in agri-environment schemes, or as part of quality assurance schemes*. The main aim of this fact sheet is to provide some essential background on the current EU policy context regarding agricultural pollution and the concept of “good agricultural practice” (GAP). Particular emphasis is put upon the way that the concept of GAP has emerged, its role in the overall context of EU policy and legislation, and the present situation.

Good Agricultural Practice (GAP) currently represents a baseline (a “red line”) of environmental standards that apply to all farmers in the EU. Farmers are expected to comply with this GAP without any expectation of financial reward. However, above this baseline of GAP farmers become eligible for incentives (voluntary measures) or compensation (obligatory measures) in return for meeting society’s preference for higher standards.

This principle is defined in the text of the **EC Rural Development Regulation (No. 1257/1999)** and is elaborated further in the associated implementing regulation No. 445/2000. All EU Member States (and those countries preparing for accession to the EU) are required to establish “**verifiable standards of usual good agricultural practice**” - where *usual good agricultural practice* is the standard of farming, which a reasonable farmer would follow in the region concerned. In order to be eligible to receive support from agri-environment schemes and less-favoured area schemes, farmers must follow these verifiable standards across the whole of their farm. Competent national authorities must be able to check compliance with these verifiable standards.

The EU concept of GAP allows for some flexibility in order to match local conditions (varying natural/physical conditions) and to allow for development over time (technological change). In any one region/country it may comprise:

- mandatory environmental legislation (EU, national and regional/local)
- other binding or semi-obligatory measures (such as formal “Codes of Good Agricultural Practice” established in accordance with the EC Nitrate Directive)
- further elements (e.g. standards promoted by extension services and relevant technical standards)

II. The Water Framework Directive and Agricultural Pollution Control in the Danube River Basin

The EC Water Framework Directive (No. 2000/60) – the WFD - is an ambitious piece of legislation that provides a “blueprint” for water management in Europe (and elsewhere) for the next 20 years. The WFD obliges European countries to **prevent further deterioration of all ground and surface water resources, and to further protect, enhance and restore all waters with the aim of**

achieving "good ecological and chemical status" by 2015. Preparation for application of the WFD is mandatory in all EU Member States and the 12 countries preparing for accession to the EU. There is also a non-mandatory commitment to the application of the principles of the WFD in Switzerland, Norway, parts of Russia, all ICPDR member countries, etc.

The Water Framework Directive (WFD) is an important tool to a) ensure rational, more "eco-efficient" use of water and wetlands across Europe and b) to conserve and restore the functions and integrity of freshwater ecosystems - both in terms of its "result" ("good status") and "process" obligations (IRBM – **integrated river basin management**).

IRBM is the framework within which measures for achieving 'good status' are to be implemented. The countries must ensure that the necessary technical and institutional infrastructure is in place (including spatial definition of pressures and impacts, e.g. agricultural). Where necessary, IRBM bodies take account of trans-boundary basins requiring joint management between two or more countries.

The precise measures to be taken within a given river basin will vary widely according to natural, socio-economic and cultural factors. The Directive foresees that the choice of measures will be taken according to what is most appropriate at the basin level (in turn reflecting what is appropriate for a given region or country).

Central elements of the WFD also include:

- Water pricing – to act as an incentive for the sustainable use of water resources and thereby contributing to achieving environmental objectives and helping to reduce unnecessary consumption (over-use of water for irrigation), and
- Public participation – in recognition that solutions to current water problems need to be 'bottom-up' as well as 'top-down' (incl. farmer's associations, water users associations, etc.).

Regarding **agricultural pollution** – there is considerable potential to utilize various instruments available in the Common Agricultural Policy (and to some extent Structural/Cohesion Funds) in order to promote better management practices by farmers and reduce the pressure upon water resources from agriculture.

III. Problems Associated with Fertiliser Use in the DRB

Mineral fertilisers and animal manures are traditionally applied to agricultural land to improve the supply of crop nutrients and enhance crop growth. However, when surplus crop nutrients (N & P) "leak" from agricultural land into the wider environment they are a potential environmental pollutant. Mineral fertilisers and animal manures therefore need to be carefully managed (quantity and time of application) by farmers in order to reduce the risk of surplus nutrients accumulating and "leakage" occurring.

The rapid decline (40-50 kg N/ha) in the N balance of agricultural land in central and lower DRB countries since the late 1980s suggests that there has been a significant reduction in the risk of diffuse N pollution from agriculture – this is associated both with the significant reduction in N fertiliser use by farmers in the region and the 50% decline in livestock numbers.

There are now indications that fertiliser use by farmers in the region is increasing again with an 18% increase in total fertiliser N consumption (thousands tonnes/year) by all central and lower DRB countries during the period from 1997–2002. Not surprisingly, the increase in fertilizer N use

is greatest (up to 30%) in those that recently joined the EU and there are concerns that this trend will continue with the implementation of the CAP in these countries.

Despite the relatively low levels of fertiliser use and manure production in most central and lower DRB countries, the risk of significant nutrient loss to waters is increased greatly by a number of “**bad practices**” by farmers that are consistently reported in all countries, including:

- bad timing of fertiliser application
- spreading fertiliser and manure on frozen and snow covered ground, sloping land and too close to surface waters
- not considering the nutrient requirements of the crops to which fertilisers (and manures) are applied e.g. over-application of fertiliser N at the time of sowing
- treating manure as a “waste” product rather than a valuable source of nutrients – this commonly leads to the over-application manure and slurry to small areas of land
- in the poorest rural areas, manure is often dumped in village waste heaps, streams, ponds etc.
- manure storage facilities are often poor - without adequate storage facilities, manures are often applied to land at inappropriate times when there is high risk of leaching or run-off

The promotion of even the most basic “**good practices**” for farmers should be a high priority for national governments and will benefit both farmers (through improved efficiency, productivity and profit) and the environment.

IV. The Current State of Agricultural Pollution Control Policies in the DRB

In order to be effective at **improving the management practices of farmers**, policies for reducing agricultural pollution should include three effective components - a policy strategy (or number of strategies), policy instruments and an implementation structure. The purpose of this review is to give an understanding of the existing policy context regarding agricultural pollution control in the 11 central and lower DRB countries - in particular, to classify, describe and analyze 4 key issues:

1. The current policy objectives and strategies of the different Danube River Basin (DRB) countries regarding the control of water pollution caused by agriculture
2. The various policy instruments and practical measures that are currently used to promote the control of agricultural water pollution – including a) regulatory, b) economic, c) advisory/informative and d) project-based instruments/measures
3. The overall effectiveness of the “policy mix” used to control agricultural water pollution
4. The effectiveness of the institutional arrangements that are operating to implement the various policy instrument and measures

Strategies - all DRB countries report some goals for water protection, although there is a general lack of clear and targeted strategies for water protection that integrate different policy measures and show the necessary path to the achievement of indicated goals. Most progress towards the development of comprehensive water protection strategies is made in those countries that have joined the EU or are preparing for accession.

Regulatory Instruments – many of the main agricultural pollution issues (nutrients, pesticides, farm waste and erosion) are addressed by existing regulatory instruments in the DRB countries, with the most extensive coverage of issues in those countries joining the EU. In most other countries, existing regulatory instruments tend to be rather general with relatively few specific regulatory instruments in place. Consequently there is much potential to prepare more targeted

instruments to prevent water pollution through the control of specific farming practices, also to improve compliance and enforcement.

Economic Instruments - economic instruments may be incentives or disincentives and can be an important tool for modifying the management practices of farmers and reducing agricultural pollution. However, effective measures (or mixes of measures) need to be well-designed and balanced – as well as successfully implemented. Not surprisingly, the economic instruments used in the DRB countries are mainly disincentives due to the lack of financial resources to introduce incentive schemes. Where economic instruments are in place they do not currently address all pollution issues in all countries. The number of incentive measures in the four acceding countries (CZ, SK, SI, HU) is expected to increase with EU accession and the availability of EU co-financing for rural development measures, such as agri-environment programmes.

Advisory/Information Instruments - the transfer of knowledge and information to farmers via advisory/informative instruments can play a key role in changing the management practices of farmers and reducing agricultural pollution. However, the most frequent limitation upon this type of instrument for controlling agricultural pollution in the DRB is that the actions taken are too small with insufficient staff and financial resources. There is large potential to further develop advisory/information instruments in all countries.

Project Based – there are various types and sizes of projects targeting the prevention of agricultural water pollution with a tendency towards research and policy implementation in those countries working towards EU accession.

Based upon the results of the policy review, the following **general recommendations** were made for all central and lower DRB countries:

- to design more targeted and integrated strategies for the control of agricultural pollution
- to improve the control and enforcement of regulatory instruments for agricultural pollution control
- to put more emphasis upon the design and implementation of advice/information measures for agricultural pollution control
- to develop within available resources financial incentives as appropriate economic instruments for promoting agricultural pollution control
- to promote organic farming and integrated crop management techniques as viable alternatives to the use of agrochemicals
- to design and implement standards of Good Farming Practice
- to increase farmer and advisor awareness of the importance of agricultural pollution control
- to support capacity building amongst relevant stakeholders for the implementation of agricultural pollution control policies

V. Policy Recommendations for Fertiliser Use

Despite the relatively low levels (compared to many EU Member States) of mineral fertiliser and manure currently applied to agricultural land in the central and lower DRB region, national governments should take seriously the risk of diffuse pollution arising from fertiliser and manure application.

The following objectives relating to fertiliser and manure application were recommended for all national strategies aiming to control nutrient pollution from agriculture:

1. Develop greater understanding at a national/regional level of the relationship between agricultural practice (fertiliser, manure and land management) and the risk of diffuse nutrient pollution – notably through the establishment of progressive and well-funded research programmes
2. Develop appropriate policy instruments and institutional arrangements for promoting better management of fertilisers and manures – including:
 - Raise farmer awareness of good practice for better management of fertilisers and manures
 - Develop and promote national codes of good practice
 - Use appropriate economic instruments to promote good practice
 - Develop appropriate extension capacity (including the link to progressive and well-funded research programmes as above)
3. Promote certified organic farming and other low input farming systems as viable alternatives to the conventional use of fertilisers, including:
 - Raise farmer awareness of the potential of alternative farming systems, such as organic farming
 - Develop relevant legislation for the certification and inspection of organic farming systems in compliance with internationally recognised standards
 - Develop appropriate extension capacity for the re-orientation of farmers towards alternative production systems
 - Use appropriate economic instruments to promote organic farming

VI. The Concept for Best Agricultural Practice (BAP) in the DRB

The objective of developing a **concept of “best agricultural practice”** (BAP) is to support the design of new agricultural pollution control policies for the central and lower DRB countries – as well as encouraging compliance with existing and emerging national legislation (including that driven in many countries by the process of EU accession) – that will promote the greater integration of pollution control considerations into the day-to-day management of crops, animals and agricultural land by farmers in the central and lower DRB.

For the purposes of the DRP, the term “best agricultural practice” (BAP) is only applied to **farm management practices that reduce the risk of pollution occurring from agricultural non-point sources in the DRB** – this includes classical diffuse pollution and “small point source” pollution arising from multiple, small-scale (and often accidental) discharges that occur from different farming activities.

There are **no concrete and universal definitions** available for what is or is not best agricultural practice (BAP). A strict or prescriptive definition of BAP has therefore been avoided – instead project experts have proceeded with the understanding that BAP actually encompasses a broad spectrum or hierarchy of activities that must be interpreted according to local agronomic, environmental, social and economic context. Not all elements of this hierarchy are relevant in all countries of the central and lower DRB – instead Best Agricultural Practice is defined as:

“...the highest level of pollution control practice that any farmer can reasonably be expected to adopt when working within their own national, regional and/or local context in the Danube River Basin”

With this BAP can be applied as a **uniform concept** across the whole DRB, but the level of environmental management/performance that we can expect from farmers in different regions/countries will vary significantly according to:

- a) the agronomic, environmental and socio-economic context in which they are operating
- b) the availability of appropriate policy instruments for encouraging farmers to “move up” the hierarchy and adopt more demanding pollution control practices
- c) the availability of appropriate knowledge and other technical resources for supporting farmers to “move up” the hierarchy and adopt more demanding pollution control practices

The objective of policy strategies for agricultural pollution control in the different DRB countries should therefore be to **encourage farmers to “move up”** the BAP hierarchy as far as possible in the context in which they operate and deliver the highest level of pollution control that it is feasible for them to do. The function of available policy instruments and measures for achieving this “shift” can be summarised as follows:

- a) Disincentives for dropping below the minimum level of environmental management practice that is acceptable
- b) Appropriate interventions for promoting and sustaining the minimum level of environmental management practice on as many farms as possible, and
- c) Incentives to go beyond the minimum level of environmental management practice and deliver a higher level of environmental performance

Obviously the pursuit of such strategies will require a combination of policy instruments – the so-called “policy mix” - to achieve optimal pollution control and a number of additional factors will influence the selection of these instruments, including environmental effectiveness, economic efficiency, equity and accessibility to farmers, administrative feasibility and cost, and political acceptability.