

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES

THE DRP, AGRICULTURE AND WATER POLLUTION

Reducing nutrient and toxic (e.g. pesticide) pollution from agriculture to Danube water bodies is a key objective of the UNDP-GEF Danube Regional Project (DRP). In response, the DRP has developed a number of products and activities of use and value for various stakeholders in the Danube River Basin (DRB). DRP agriculture-related activities are also geared to assist the International Commission for the Protection of the Danube River (ICPDR) in their efforts to implement the Danube River Protection Convention and EU Water Framework Directive.

WHO CAN BENEFIT FROM THE DRP PRODUCTS?

Does your work in the agricultural sector contribute to nutrient and pesticide pollution in the DRB? Or is your work committed to reducing agricultural nutrient and pesticide pollution in the DRB? Then we can help, especially:

- > Farmers
- > Farmer advisory or extension services
- > National government employees involved in:
 - Agricultural policy development and implementation
 - Meeting EU legislation related to water quality
- > Environmental NGOs

WHAT ARE THE PRODUCTS AND ACTIVITIES?

1. REPORTS

The DRP has developed a number of reports aimed at assessing agricultural activities and products that contribute to nutrient and toxic pollution in the DRB. The reports also provide recommendations for pollution reduction. Nutrient fertilizer and pesticide products and manure are the main sources of agricultural pollution that have been assessed in the reports. Future reports are also currently under preparation.

A report now exists for each of the following themes:

- > Nutrient Fertilizer and Manure Use
- > Pesticide Use
- > Total Nutrient Emissions from Agriculture
- > National Policies for Reducing Agricultural Pollution
- > Introducing BAP through Policy Reforms and Pilot Projects
- > Guidelines for Manure Management

2. GRANTS FOR DANUBE NGOS

Awarding financial grants to Danube country NGOs (See 'Project Information Sheet: NGO Grants')

3. DISSEMINATION AND TRAINING WORKSHOPS

Between April 25-26, 2006, the ICPDR and DRP organized a workshop in Malinska, Croatia. Its main goals were to: identify tools to support the implementation of the EU Water Framework Directive in the Danube Basin, especially the rural development measures available under Pillar II of the EU Common Agricultural Policy; create a better understanding and coordination between government water managers and agriculture managers in the Danube Basin; and share experiences between countries, international organizations and consultants.

4. BACKGROUND STORY

'Danube farmers are friends, not foes' provides a background and context to agriculture and environment in the DRB.

5. WEBSITE

'Agriculture' section on DRP website with full downloadable reports: http://www.undp-drp.org/drp/activities_1-2_-3_agriculture.html

6. DEMONSTRATION SITES

Testing best agricultural practices at specific geographical locations in the DRB.

7. MEDIA OUTREACH

Includes press releases, press trips and story submissions to media.



AGRICULTURE &
DANUBE WATER
POLLUTION

BACKGROUND STORY

DANUBE FARMERS ARE FRIENDS, NOT FOES

Ever talk to people whose work involved killing animals? People in a slaughterhouse or in shops selling meat or fish? The butcher sawing the slab of beef, blood on his apron, said to me: “City people look down on folks like me but I do their dirty work.”

He was right. Many urban consumers love picking out fresh-cut steaks packaged in colourful wrapping (with singing cows illustrated on the package?) in clean supermarkets. They might even visit a farm and get their feet dirty. But they won't kill the cow. They're consumers, not producers. That's the farmer's thankless job. Farmers actually do hundreds of jobs most of us would rather avoid. Some of us even call farmers enemies of the environment – from animal killers to soil spoilers to flood promoters. Take irrigation for example – it's been known to spoil the soil with too much salt, or to affect drinking water sources if too much water is taken out. Farmers have also been blamed for replacing floodplains that protect villages from floods with unproductive artificial wheat or corn fields.

In the Danube River Basin (DRB), farmers were recently charged as a main water polluter. Is that fair?

TOXIC GROWTH

Hundreds of toxic chemicals are released into DRB waters with serious threats to the environment. And many toxins come from agriculture. This news was recently reported in the 'Danube River Basin Analysis', the first ever comprehensive analysis of the Danube environment and pressures impacting it. The Analysis was coordinated by the International Commission for the Protection of the Danube River (ICPDR), the body mandated with implementing the Danube River Protection Convention.



"Farmers need agro-chemicals such as pesticides and fertilizers to sustain yields and produce good quality crops", says Dirk Ahner, Deputy Director General for the European Commission's (EC) Directorate General for Agriculture and Rural Development. "Yet the excessive or inappropriate use of these substances can contribute to water pollution through the leaching or run-off of nutrients and pesticides, and through the emission of contaminants from agricultural by-products and waste."

'Pesticides' generally refer to insecticides, herbicides and fungicides. These substances are usually diluted with water and then sprayed on soil or crops. The equipment used for spraying has generally improved allowing for better control. But farmers still decide when and where the spraying happens, and how much, and they don't always do it right. Too much spraying can lead to high soil toxicity, the death of important soil organisms or contaminated drinking water. Another problem is with the disposal of unused spray material and the washing of used equipment, often near or directly into water bodies.

In DRB waters, pesticides generally increase downstream. "Alarming concentrations" can be found in the lower Danube and in some tributaries, says the Danube Analysis. The DRB is home to 29 of the EU's list of 33 'hazardous priority substances', eleven of which are agricultural pesticides. Many are used in producing cereals, rapeseed, sunflower, maize, orchard fruits and grapes. Only three are authorized in all countries. A shocking seven are not authorized in any country, many having been left in old stockpiles, some in flood-prone areas.

A big threat is from 'DDT', a pesticide banned in Europe known to reduce the ability of both birds and fish to reproduce – in Danube samples taken, 71% exceeded permissible levels. Another is the herbicide 'atrazine' which was banned in the EU from 2006 because of its damaging impacts on the environment.

NON-NUTRITIOUS NUTRIENTS

Few are aware of nutrient pollution from agriculture to the water – for example, from nitrogen. Nitrogen is the most important mineral nutrient for plants, playing a crucial role in plant growth and photosynthesis. In soluble form, nitrogen becomes ‘nitrate’ – easily leached from soil into water. And too much of it means pollution.

One main source is the inappropriate or over-use of nitrogen fertilizers for crops like wheat. Many farmers apply them at the wrong time of year or in the wrong areas – for example, on frozen areas, on slopes or close to surface waters. That means nitrogen is more prone to enter the water. Some farmers don't consider the crops being fertilized – after a certain amount, further benefits from fertilizers stop and even reverse. Some fertilizers never even reach the crops they're targeted for.

Another nutrient source is the over-production and poor handling of solid manure and liquid waste from raising livestock. Manure can be a good natural fertilizer for crops. But the usable amount is limited by the area of cropland available. One pig and its piglets, for example, make one truckload of manure annually. That would need 1.2 ha of fields for spreading, which means 60,000 ha are needed for a mid-sized farm of 50,000 pigs. That kind of space is rarely available. So, on many farms, nearly half of all livestock waste becomes pollution. Some farmers try to store it properly. Others pile it on the grass. Others just dump it into streams. In any case, a lot eventually gets into the water, especially in times of heavy rains and floods - and lower Danube countries have had their share of major flooding lately.

Another concern is that manure should only be spread at certain times of the year. But since storing facilities are usually inadequate, spreading happens all year. This includes winter when it is not necessary, and when the loss of nitrates is highest.

The result is that, for decades, too much nitrogen from agriculture has been getting into DRB waters. The same is true for too much coming from poorly treated or untreated wastewater from industry and from municipalities. All combined, the excesses meant that nitrogen use doubled from the 1950s to the mid-1980s. Nitrogen levels are still too high. Agriculture is now the biggest source of nitrogen in the DRB with a 39% share.



Farming is also the second biggest source for phosphorus emissions in the DRB with a 32% share. Phosphorus, like nitrogen, is an essential nutrient for plant growth and maturity. But again, if too much is added through fertilizers, water pollution can result.

The biggest impact from nutrient pollution is ‘eutrophication’ which reduces oxygen in the water, decreases plant and animal species and worsens water quality. Danube nutrient pollution has helped create a severe ecological imbalance in the Black Sea – in fact, most of the world's major coastal ecosystems are now seriously affected by eutrophication, from China to the Gulf of Mexico. Nutrients are actually one of the world's biggest pollution problems, notes the World Watch Institute, blamed in part for species loss, acid rain and even climate change. And nitrates in drinking water have been linked to infant poisoning.

The Danube Analysis also found groundwater in the DRB at high risk of pollution from agricultural fertilizers and chemicals. That's a big problem because groundwater is the source of 95% of the public water supply in some Danube countries. Many people get water from their own private wells – as high as 43% in some countries. Overall, 48 million people in the DRB depend on groundwater sources for drinking water.

EU TOO INTENSE

Whether farming is 'intensive' or 'extensive' has a major bearing on pollution. Intensive farming usually means high numbers for pesticides, fertilizers, animal density and equipment. It often means getting the most out of the land in the shortest amount of time as cheaply as possible. Endless corn fields or factory farms slaughtering thousands of chickens daily come to mind here.

"Intensifying agriculture and the connected development and draining are the most important causes of nature and landscape destruction in 20th century Europe," says Stroming.

Not surprisingly, early EU members Germany and Austria are still quite high in intensive production methods and inputting nitrogen pollution to the Danube.



Extensive farming tends to be more traditional using more land area, less fertilizers and pesticides, and growing less animals and crops. It uses more human labour, time and environmentally-friendly techniques. Picture shepherds in the hills grazing cattle in natural grasslands or meadows.

In a competitive free-trade world demanding high production and low costs, intensive farming has well-suited large western agro-companies intent on big profits. This is especially true for the EU's original 15 members which depended heavily on the EU's Common Agricultural Policy (CAP) for decades to subsidize intensive practices.

Results from the CAP included reductions in small farms and the size of the EU's agricultural workforce. It also led to the growth of large agro-companies and degraded natural environments. According to a report by Dutch consultant Stroming for WWF's 'One Europe More Nature' project, only the largest and most advanced companies survived with 80% of CAP funds going to 20% of the farmers. From 1992 to 2002, 200,000 farmers stopped their businesses in the EU every year while the CAP continued to spend 40 billion euros yearly on farming support from the EU's total budget of 75 billion euros.

DANUBE INTENSITY ON THE RISE

In the former communist countries within the DRB, extensive farming was preserved in many areas, especially in remote hills and mountains such as Romania's Carpathians. Small farms survived through strong local demand, limited foreign competition and state support. Agriculture remained a key employer for people.

That situation has drastically changed. The end of communism meant major reductions in state support and access to markets. Free trade meant competition with powerful western agro-companies and their cheaper products. Many large state-owned farms and smaller family farms closed shop. Cities and other types of work lured young farmers away. Vukovar, Croatia, for example, was a thriving farming area during communism. Today, 70% of the workforce is unemployed as young people flock to the new local Benetton factory, the capital Zagreb, the Adriatic coast or to Canada.

MEETING THE LAW

Farming losses did have one positive feature – a big drop in nutrient pollution and fertilizer use in the central and lower Danube countries. Pesticide use declined by 40% while there was a 50% drop in livestock numbers.

Nonetheless, farming is still important business. A 2003 study showed that, in six central and lower Danube countries, agriculture uses a near average of 60% (Hungary led with 71.5%) of the total land surface, with 37% under direct cultivation.

Smaller eastern farmers new to the EU hoped that EU accession would improve their lot. They expected to receive CAP support as did their neighbours to the west. But now the CAP is also changing, for everyone. A recent CAP reform process is intent on reducing subsidies for farming, especially for intensive production. This could still mean that, without enough subsidies from either the state or the CAP, eastern production methods won't be able to compete with larger more established companies – especially those now buying up large tracts of nearby lands given lower costs and taxes.

If that happens, intensive farming and pollution into DRB waters could rise again.

Stroming further warns that, within a few years, some 60 to 90 million ha of land in Europe will be disposed of from the viewpoint of food production. If the right policies are not implemented soon, the result could be that large areas of land will either become completely forested or degenerate, while increasing intensive farming will continue on the remaining farmlands. This could create 'digital landscapes' where large-scale open agricultural areas and closed forests dominate Europe's landscape.

One of the best tools to ensure Danube waters stay clean is the EU's Water Framework Directive (WFD), its main body of legislation for protecting water. EU countries are obliged by law to meet WFD objectives including achieving 'good environmental status in all water bodies' by 2015. It also requires the complete phase-out of all 33 hazardous substances, including pesticides, within 20 years.

An early milestone was each country's assessment of the water bodies within their boundaries, including whether they risked failing to meet the WFD. This was done in relation to four 'risk categories' including hazardous substances and nutrients. Some river basins, often crossing many countries, also did this – hence the Danube River Basin Analysis for the Danube countries. In this respect, it was great news when all the DRB countries not in, or acceding to, the EU also agreed to abide by the WFD and cooperate with the ICPDR in producing the Danube Analysis. These included Bosnia and Herzegovina, Moldova, Serbia and Montenegro and Ukraine.

EU-wide, the assessments show that many water bodies may not meet the WFD and that one of the main reasons is pollution from farming, especially from nitrogen and phosphorus. Results from the Danube Analysis, specific to the DRB, aren't much better. In total, percentages of the entire DRB 'at risk' or 'possibly at risk' are 55% from nutrient pollution and 73% from hazardous substances. The Danube Delta is 'at risk' from hazardous substances and nutrient pollution. All Black Sea coastal waters are 'at risk' from nutrient pollution and 'possibly at risk' from hazardous substances.



The pesticides DDT and Lindane are 'at risk' of failing to meet the WFD. And agriculture is a main cause.

Danube countries now need to develop a 'Danube River Basin Management Plan' by 2009 on how to meet the WFD by 2015. This will include actions to reduce the impacts from agriculture.

Another tool is the EU's 1991 'Nitrates Directive', designed to protect waters against pollution caused by nitrates from agricultural sources, including pollution caused by the application and storage of fertilizer and manure on farmland.

It requires EU Members States to monitor surface waters and groundwater for nitrate pollution. If pollution levels are or could be high, States must then designate such areas as 'nitrate vulnerable zones' and apply agricultural 'action programme measures'.



LINKING THE CAP AND WFD

In late September 2005, the 'Conference on the Water Framework Directive and Agriculture' was held in London to raise awareness of the WFD and agriculture agenda, especially the challenges to achieving WFD objectives caused by agriculture's impacts on water. The conference was held by the EU Strategic Steering Group (SSG), set up jointly by the EC and UK government.

"The CAP of today is very different from what it was 15 years ago," said Ahner at the conference. "The integration of environmental concerns into agricultural policy has been one of the main priorities in the last decade of reforms of the CAP."

Reforms started in the 1990s. The 2003-2004 reforms and the new Rural Development Regulation are the latest steps. As a result, many now even see the CAP as an important tool for water policy.

Reform of the CAP's 'first pillar' should help reduce income support for production and "is expected to reduce incentives for intensive production." This pillar includes mandatory 'cross-compliance' which has made the granting of payments to farmers conditional on their respecting environmental laws including the EU's Nitrates and Groundwater directives. The WFD is not yet linked, but may be in the future. The first pillar also includes requirements for farmers to set some of their lands aside for environmental benefits.

Reform of the CAP's second pillar, rural development programmes, made implementation of the WFD one of its three environmental priorities for 2007-2013. Included is the 'meeting standards' measure which provides farmers with temporary support for compliance with demanding new standards such as the WFD. And new training measures for making farmers more aware of less polluting production techniques were introduced.

Interestingly, rural development 'agri-environmental schemes' now encourage farmers to work beyond conventional farming practices such as raising crops and animals to 'farming services' naturally provided by the environment. For example, this could mean a switch from growing corn to improving the flood protection capacity of a specific area of land.

It could mean creating new wetlands on former cropland to help reduce nutrient pollution and improve water quality. It could even be increased cattle grazing in grasslands and meadows to help preserve endangered animals dependent on semi-natural habitat. WWF's 'One Europe, More Nature' programme is leading the way here with local demonstration projects across the continent such as in Romania and Estonia.

During the conference, while it was agreed that a reformed CAP was likely to have significant positive impacts in the future, much depends on the rigour with which Member States implement new legislation and define and implement good agricultural and environmental practices.

Stavros Dimas, the EC Commissioner for the Environment, added that active cooperation is needed at the river basin level between water, agriculture and rural development planners. That's already a big achievement for DRB countries, coordinated by the Vienna-based ICPDR.

As a follow-up to the London conference, a second conference entitled 'WFD meets CAP – Opportunities for the future' will be held March 2-3 2006 in Vienna, Austria. In April, the ICPDR will host a special event to discuss agriculture and water pollution in the DRB.

THE FUTURE OF FARM SUBSIDIES

Soon after the London conference, an EU leaders' summit in mid-December agreed on a final EU budget for the period 2007-2013. The vast majority, or 46%, of the EU budget will be spent on aid to farmers and rural development, at 49 billion euros. The UK tried to reduce the CAP but France refused, so CAP overall spending will remain about the same, although farm spending could still possibly change before 2014.

Farmers from the 10 states that joined the EU in 2004 (many of them Danube countries) began by receiving subsidies at 25% of the rate paid to farmers in the other 15 EU countries. That rate rose to 30% in 2005 and equal levels should be reached by 2013. As a result, money paid to farmers in the older EU states will begin to decline after 2007 with an overall 5% cut from 2007-2013. Also, there will be no new money to pay farm subsidies to Romania and Bulgaria when they join the EU in 2007 or 2008, which could mean further cuts of 8-9% from overall CAP subsidies. At the same time, rural development funding now currently accounts for 13% of the total agriculture budget and this will increase to 25% before 2010.

Is this good news for Danube farmers from the new EU states? Perhaps in the short-term, as subsidies rise until 2013. After that, however, pressure will continue to increase to reduce EU farm subsidies. One sure sign of this was the deal reached on December 18, 2005 at the World Trade Organization, with EU backing, to globally end agricultural export subsidies by 2013 through its 'Hong Kong Declaration'. It will also eliminate almost all tariffs and quotas on farm exports from the world's poorest countries, thereby increasing agricultural competition worldwide.



One must remember that the CAP exists primarily to assist farmers and agriculture. "When looking for the final combination of measures, a balance will need to be struck between objectives as diverse as water protection, safeguarding and enhancing other environmental resources and the landscape, maintaining and improving the competitiveness of our agriculture, and creating new opportunities for growth and jobs in rural areas," says the EC's Ahner.

Dimas adds that the EC must be "sufficiently flexible to take account of any socio-economic problems caused in trying to meet" environmental directives. He adds that EU countries can get exemptions to the directives, such as the extension of deadlines beyond 2015, if they can show that major negative impacts will hit their agricultural sector. "But the real political discussion will be on how to share out both the burdens and the benefits. We need to find win-win solutions that have benefits for farmers and the environment alike."

Subsidizing farmers has always been controversial, be it for intensive or extensive production. Many farmers would rather be self-sufficient and not require government payments. But without, many know they just will not survive. According to the BBC, between 2002 and 2003, falls of more than 8% in the number of farmers leaving the industry were registered in the Czech Republic, Hungary, Poland, Slovenia, Slovakia and the UK.

FRIENDS, NOT FOES

As the 2nd millennium came to a close, the question was farming 'OR' environment. Many now realize that neither will function properly without mutual respect and understanding.



Farmers can, and most would actually choose to be, friends of the environment, through providing us with food or even key environmental services such as protecting us from floods or purifying our drinking water. But only if they benefit themselves.

"The Austrian farmers I've worked with, want a good relationship with the land," says Johannes Wolf of NGO 'Distelverein'. "Sometimes they need to do jobs they know may hurt the environment. But if they can be convinced that a change will be economically and ecologically beneficial, they will do it."

"Farmers need to be involved," said the Chairman at the end of the London conference. "They need to be communicated with effectively and also need to have access to the necessary training and advice."

So in the end, the answer is that farmers shouldn't be seen as enemies of the environment. Most farmers aren't really all that 'bad' after all. The truth is that many farmers are neither aware of the environmental problems they cause, nor of how to solve them. With more thanks, more help and more secure incomes, they can become true friends of the Danube and its people.

FOR MORE INFORMATION ABOUT
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REGIONAL
PROJECT**

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES REPORTS

The DRP has developed a number of reports aimed at assessing agricultural activities and products that contribute to nutrient and toxic pollution in the DRB. The reports also provide recommendations for pollution reduction. Nutrient fertilizer and pesticide products and manure are the main sources of agricultural pollution that have been assessed in the reports. A number of reports are also currently under preparation.

A REPORT EXISTS FOR EACH OF THE FOLLOWING THEMES:

1. Nutrient Fertilizer and Manure Use
2. Pesticide Use
3. Total Nutrient Emissions from Agriculture
4. National Policies for Reducing Agricultural Pollution
5. Introducing BAP through Policy Reforms and Pilot Projects
6. Guidelines for Manure Management

OVERALL HIGHLIGHTS FROM THE REPORTS INCLUDE:

CURRENT CONSUMPTION AND USE OF FERTILIZERS, PESTICIDES AND NUTRIENTS

- > Historical overviews of consumption
- > Total consumption DRB-wide and country-specific
- > Most commonly used agricultural products
- > Lists of bad and good agricultural practices
- > Human and environmental impacts from use
- > EU and international legislation affecting use

AGRICULTURAL POLICIES

- > 'Policy-making' defined
- > Overview of the DRB policy context and the impacts of EU accession
- > Country-specific lists for four key instruments currently used by DRB countries to reduce pollution: regulatory, economic, advisory-informational and project-based

- Assessment of adequacy of above instruments and overall 'policy' mix in each country, and DRB-wide summary
- > List of EU legislation with opportunities for reforming policy
- > Recommendations and potential mechanisms for improving policy reform

BEST AGRICULTURAL PRACTICES (BAP)

- > Concept and definition
- > Suggested strategies and policy objectives to guide policy reform to encourage BAP
- > Advice on how to develop the right national 'policy mix'
- > Necessary next steps including demonstration pilot projects

GOOD MANURE MANAGEMENT

- > Main benefits and principles
- > 4 sets of guidelines
 - 3 for collection and storage of animal manures divided in three groups: households and small farms, communal stores, and larger livestock units
 - 1 for application of manures to agricultural land
- > Available in 6 languages

To learn more about each report including report title, date, highlights and summary, please see the DRP Info Sheets/DRP Products and Tools/Reports.

All reports can be found on the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

1. NUTRIENT FERTILIZER AND MANURE USE IN THE DANUBE RIVER BASIN

REPORT TITLE

Inventory of Fertilizer and Manure Use in the DRB Countries with Reference to Land Management Practices (February 2004)

REPORT HIGHLIGHTS

- > Historical overview of fertilizer and manure use in the DRB
- > List of most commonly marketed and used fertilizers in the basin
- > List of problems in use and 'bad agricultural practices'
- > Potential for reducing environmental impacts through reforming national agricultural policies in the EU context
 - Adopting EU legislation
 - Financial incentives
 - Cross-compliance measures
- > List of good agricultural practices
- > Three overall recommendations for policy reform for DRB national governments
- > National reports from 11 Danube countries

REPORT SUMMARY

It begins with an overview of fertilizer and manure use in the DRB, including how historical factors have led to recent use decreases, and a list of most commonly marketed and used fertilizers in the basin. A list of problems and 'bad agricultural practices' follows, for example, improper storage of manure or an agricultural workforce uneducated in good agricultural practices.

The potential for reducing environmental impacts through reforming national agricultural policies in the EU context is then examined. This includes a look at adopting EU legislation such as the Water Framework Directive, Nitrates Directive and Groundwater Directive as well as their obligations and shortcomings. Financial incentives for pollution control, such as from the EU's

Rural Development Programme and SAPARD, are suggested. It also promotes cross-compliance measures – in other words, the imposition of environmental conditions on farmers to receive governmental assistance.

A list of good agricultural practices are offered such as avoiding the run-off of applied fertilizers to surface waters, or sowing winter crops in early autumn.

The report concludes with three overall recommendations for policy reform for DRB national governments. The first is to establish well-funded research programmes. The second is to develop appropriate policy instruments and institutional arrangements for promoting better fertilizer and manure management, such as raising farmer awareness and promoting national codes of good practice. Finally, certified organic farming is promoted as an alternative to conventional farming.

This report is based on an assessment of responses made by national governments in 11 Danube countries to a questionnaire. It asked about the most commonly used nitrogen (N) and phosphorus (P) fertilizers nationally, as well as their total consumption and the characteristics of their use (e.g. amounts typically applied and when used during the year), including known bad practices. All national reports are included in annexes.

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

2. PESTICIDE USE IN THE DANUBE RIVER BASIN

REPORT TITLE

Inventory of Agricultural Pesticide Use in the Danube River Countries (February 2004)

REPORT HIGHLIGHTS

- > Historical overview of pesticide use in the DRB
- > Overall DRB pesticide consumption from 1989-1997, and in 11 countries
- > List of EU and international laws affecting pesticide use
- > List of authorized and unauthorized pesticides in DRB
- > List of problems in use and 'bad agricultural practices'
- > Impacts on human health and environment, including an extensive list of Chemical Fact Sheets
- > List of possible mechanisms for controlling pesticide pollution
- > Suggestions for policy reform for pesticide pollution control
 - EU context: EU policy, EAP, financial incentives, 'Quality Assurance Schemes'
 - Wider DRB context
- > List of proposed practical actions for pesticide pollution control
- > Four overall recommendations for policy reform for DRB national governments

REPORT SUMMARY

This report is based on national assessments of pesticide use in 11 Danube countries. It begins with an overview of pesticide use in the DRB, including how historical factors have led to recent use decreases and new pressures pushing for increased use. Overall consumption from 1989 to 1997 is described, followed by a list of EU and international laws affecting pesticide use, and which pesticides are authorized in the EU. Here it is noted that the availability of data is poor.

The overall consumption of specific pesticides in each country is provided with information on the characteristics of use. A number of problems and bad practices in use are then listed including the illegal trade of banned substances, poor storage, over-application, the drifting of pesticides into adjacent areas and poor timing for application.

The environmental and human impact of specific pesticides were studied, using national experts as well as existing literature on the subject. An extensive list of 'Chemical Fact Sheets' were added as annexes to show the environmental and human toxicity of a number of pesticides.

The potential for controlling pesticide pollution is then presented including a lengthy list of possible mechanisms such as training, taxes and permits.

Suggestions for potential policy reform for pesticide pollution control are divided between those within an EU context and those in a wider DRB context. Within the EU, stress is laid on the adoption of EU policies regulating pesticide use, especially the Water Framework Directive (EAP) and EU Rural Development Regulation. The EU's Environmental Action Programme pushes for progressive reforms in pesticide use. Financial incentives for pollution control follow such as EU agri-environmental schemes, and SAPARD funding for countries approaching EU accession.

Significant attention is put on EU 'on-farm Quality Assurance Schemes', an increasingly attractive incentive for farmers. These offer consumers assurance of the level of pesticides used in food production, especially through organic farming. One example is the 'Euro-Retailer Produce Working Group (EUREP)' which has developed a set of standards and procedures for inspecting and certifying farmers who follow so-called 'good agricultural practice' (GAP). A table in the reports summarises the mandatory requirements relating to pesticides for farmers and growers complying with the EUREP-GAP Fresh Produce Protocol – for example, in choosing chemicals, training, chemical storage and disposal.

In the wider DRB context, potential for policy reform includes encouraging national governments to implement Integrated Crop Management (ICM) and Integrated Pest Management Standards, the compulsory training and licensing of farmers and farm advisers, performance standards, eco-audits and behavioural change efforts.

A section on proposed practical actions for pesticide pollution control follows, with 12 sets of suggestions such as choosing sites for optimal plant growth, hygienic measures, training in recognizing pests, using non-chemical measures, and using safe plant protection equipment. The report ends with four overall recommendations for policy reform: reducing harmful substances and the most dangerous pesticides, better control of the use and distribution of pesticides, encouraging proper use and promoting organic farming.

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

3. TOTAL NUTRIENT EMISSIONS FROM AGRICULTURE TO THE DANUBE RIVER BASIN

REPORT TITLE

Inventory of Agricultural Non-Point Source Pollution by Nitrogen and Phosphorus in the Danube River Catchment (January 2004)

REPORT HIGHLIGHTS

- > Total volumes of nitrogen and phosphorus nutrient emissions from agriculture into the Danube River, by country from 13 Danube countries

REPORT SUMMARY

This inventory presents new information about total volumes of nutrient emissions from agriculture into the Danube River, by country in 13 countries. It includes the two main types of 'diffuse' nutrients from agriculture – nitrogen and phosphorus. The four main 'pathways' for the pollution are groundwater, tile drainage (through underground perforate pipes), soil erosion and surface run-off. A key factor examined was the 'nutrient balance' of agricultural topsoil – for example, if tests found a surplus of nutrients in the soil, this meant that the nutrient optimal level needed by crops was exceeded, resulting in a positive balance. The period of study was 1998 to 2000.

Overall, the inventory found Germany and Romania to be the top emitters of nitrogen in the basin, and Moldova and Bosnia and Herzegovina the lowest. For phosphorus, Romania and Austria were highest, with Slovenia and Moldova the lowest.

The report was prepared using data supplied by the Berlin-based Institute of Freshwater Ecology and Inland Fisheries (IGB).

USED IN MONERIS

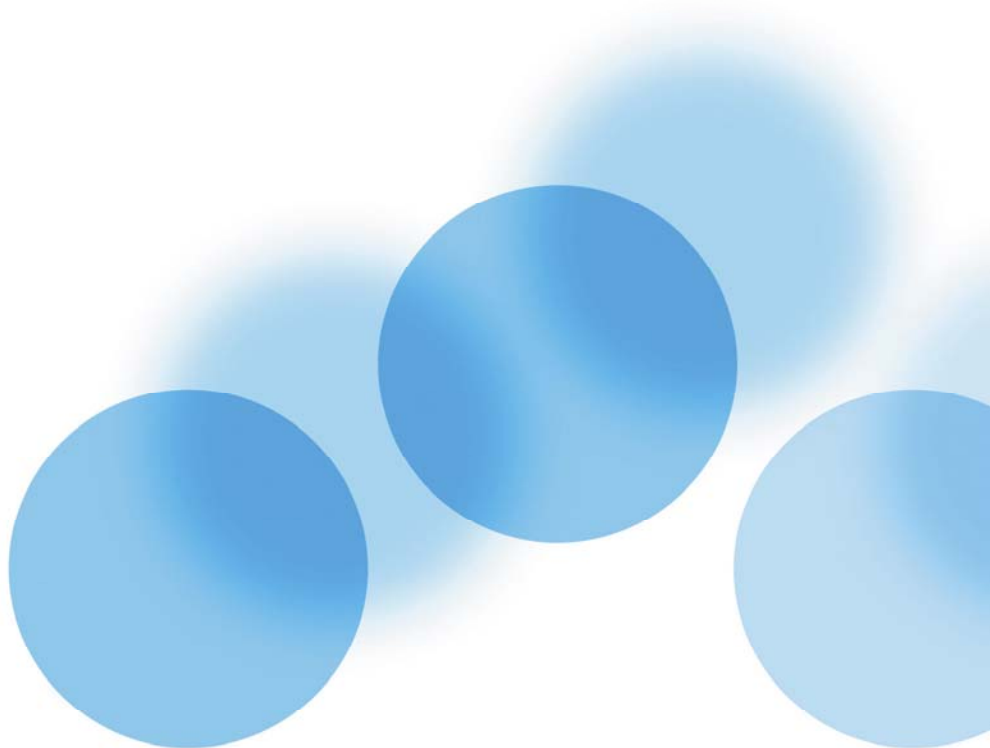
Data from this inventory was fed into 'MONERIS', a mathematical model for 'Modelling Nutrient Emissions in River Systems' developed by IGB. MONERIS is used by the International Commission for the Protection of the Danube River (ICPDR) and Danube governments to assess nutrient emissions into 388 sub-basins in the Danube River Basin. As a result, the new data

helped support the ICPDR's 'Emission Expert Group' in assessing water pollution sources, the results of which were included in its 'Danube River Basin Analysis 2004'.

Given the model's excellent reviews, the EU European Environment Agency (EEA) is now considering using MONERIS Europe-wide as part of its 'LARA' program, 'Linkages Between Agriculture and Water Quality'.

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html



PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

4. NATIONAL POLICIES FOR REDUCING AGRICULTURAL POLLUTION

REPORT TITLE

Inventory of Policies for Control of Water Pollution by Agriculture in the DRB Countries
(March 2004)

REPORT HIGHLIGHTS

- > Defines 'policy-making' including objectives, strategies, instruments and institutional arrangements
- > Overview of the DRB policy context and the impacts of EU accession
- > List of EU legislation with opportunities for reforming policy
- > Extensive country-specific lists for four key instruments used by each country to reduce pollution: regulatory, economic, advisory-informational and project-based
- > Comments on adequacy of existing instruments including overall effectiveness of the 'policy mix' in each country in reducing pollution
- > Summaries compiling information for four main instruments and for the development and implementation of BAP
- > Overall recommendations and conclusions

REPORT SUMMARY

This report assesses the current policy context for reducing agricultural pollution to water in 11 Danube countries. Four main issues are addressed: current national policy objectives and strategies, current policy instruments and measures, and the effectiveness of the 'policy mix' and of the institutional arrangements for implementing policies and measures. It is based on national policy assessments with information presented in three country groupings: 'EU acceding countries', 'EU candidate countries' and 'other DRB countries'.

It begins with explaining 'policy-making' including objectives, strategies, instruments and institutional arrangements. Four categories of instruments are noted: regulatory (e.g. laws, regulations, acts), economic (e.g. penalties, rewards), advisory and informational (e.g. education, demonstration farms, publications), and project-based (e.g. those promoting best-agricultural practices or BAP).

A description of the dynamic DRB policy context follows emphasizing the changes that EU accession and laws have brought to policy reform. A comprehensive list of related EU legislation is presented along with opportunities for reform related to integrating the EU Water Framework Directive with the CAP, SAPARD, agri-environment measures and cross-compliance.

Results are then presented for each country grouping. This includes extensive country-specific lists for regulatory, economic, advisory-informational and project-based strategies and instruments used by each country to reduce pollution. Comments by national experts are added on the adequacy of the strategies to reduce pollution. Each country grouping chapter ends with assessing the overall effectiveness of the policy mix in each country in reducing pollution, with specific gaps in policy development and implementation added.

Next is a 'Summary of the Current Status of Agricultural Pollution Control Policies in the Central and Lower DRB'. These compile information related to the four main types of instruments assessed above as well as for the development and implementation of BAP. The report ends with a short list of overall recommendations and conclusions.

This report was used to further develop the separate DRP report: 'Recommendations for Policy Reforms and for the Introduction of Best Agricultural Practices in the Central and Lower Danube River Basin countries' (See DRP Info Sheets/DRP Products and Tools/Report 5).

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

5. INTRODUCING BAP THROUGH POLICY REFORMS AND PILOT PROJECTS

REPORT TITLE

Recommendations for Policy Reforms and for the Introduction of Best Agricultural Practices in the Central and Lower Danube River Basin countries (February 2004)

REPORT HIGHLIGHTS

- > Introduces the concept and definition of 'Best Agricultural Practices' (BAP)
- > Summarizes earlier DRP reports related to the use of policy instruments and EU legislation that can be used to promote BAP
- > Presents six Strategic Aims and 11 Policy Objectives to guide policy reform to encourage BAP
- > Advice on how to develop the right 'policy mix' in each DRB country
- > Necessary next steps including demonstration pilot projects

REPORT SUMMARY

This report is based on the findings of earlier DRP reports, as well as from a DRP workshop held in Zagreb for policy-makers in agriculture and water management from 11 DRB countries. It is in part a collection of summaries of these earlier reports. It also aims to introduce the concept of 'Best Agricultural Practices' (BAP) and opportunities for promoting it through policy reform and select demonstration pilot projects.

It begins with an overview of BAP and the earlier development of a BAP concept for the DRB. This is not a strict definition but rather a 'hierarchy of activities'.

Getting the proper 'mix' of policy instruments that can be achieved to promote BAP follows. Regulatory, advisory/informative and economic instruments are examined with an assessment of their current status in DRB countries.

Opportunities for policy reform in relation to EU enlargement include harmonizing national legislation with EU regulatory instruments such as the Water Framework Directive and other listed EU directives. It also includes implementation and reform of the CAP and further developing the concept of 'environmental cross-compliance'.

The report presents six 'Strategic Aims', each with its own 'Policy Objectives', with 11 Objectives in all. The Six Aims are to:

1. Reduce pollution from mineral fertilisers and manure
2. Reduce pollution from pesticides
3. Improve compliance and enforcement of regulatory instruments for agricultural pollution control
4. Develop appropriate economic instruments for agricultural pollution control
5. Develop the capacities of agricultural extension services for agricultural pollution control
6. Promote organic farming and other low input farming systems

Examples of Objectives include improving national research into the relationship between agriculture and pollution, and encouraging proper pesticide use. The Aims and Objectives are designed to encourage farmers to 'move up' the BAP hierarchy and adopt more demanding pollution control practices.

Formulated on a basin-wide context, the above are meant to guide policy reform and the introduction of BAP in the central and lower DRB countries. But these should be adapted to national contexts. Suggestions on how to select recommendations and in developing the right 'policy mix' follow for countries, depending on their relationship with the EU.

The report ends with steps necessary for implementation of the proposed policy reforms and for the introduction of BAP measures at the national level, including demonstrating BAP through pilot projects. Annexes for each of the 11 countries provide country-by-country reviews of current policy objectives and strategies, policy instruments and practical measures, existing programmes and projects promoting BAP, and the overall effectiveness of the 'policy mix'.

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES: REPORTS

6. GUIDELINES FOR MANURE MANAGEMENT

REPORT TITLE

Technical Guidelines for Manure Management in the Central and Lower DRB Countries
(March 2004)

REPORT HIGHLIGHTS

- > Definition of BAP concept and need to suit local conditions
- > Main benefits and principles of good manure management
- > 4 sets of guidelines
 - 3 for collection and storage of animal manures divided in three groups: households and small farms, communal stores, and larger livestock units
 - 1 for application of manures to agricultural land
- > Available in English, Croatian, Moldovan, Bulgarian, Serbian and Ukrainian

REPORT SUMMARY

The purpose of this report is to provide guidelines for 'Best Agricultural Practices (BAP)' related to manure (solid and slurry/liquid) management. It begins with defining BAP as a 'hierarchy of activities' that needs to be selected to suit national and local context. The main benefits and most important principles of good manure management follow.

Most of the guidelines relate to collection and storage of animal manures. These are divided into three main categories: households and small farms, communal stores and larger livestock units. Examples of guidelines for the first two include locating waste stores away from watercourses, assessing the slope of concrete flooring for stores, separating household waste from manure, and preventing rainfall from reaching stored manure.

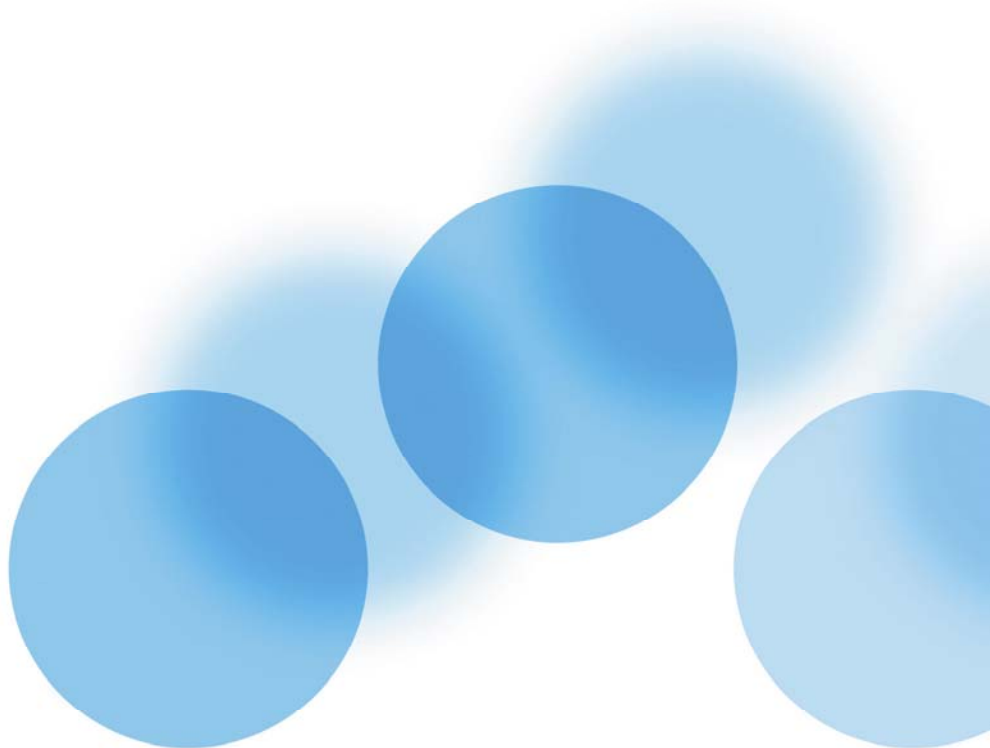
For larger livestock units which can be a serious source of water pollution, guidelines fall in three more groups. The first relate to solid manure, for example regular inspection of stores. The second relate to slurry, for example creating a deep basin lined with clay or plastic. The third relate to 'dirty water' produced by rainwater falling on dirty yards or water used for washing equipment, for example applications onto soil.

A final set of guidelines relate to application of manures to agricultural land. These cover when, where and how to apply manures. Examples include applying slurry early in the growing season, avoiding application in flood-prone areas, and obtaining nutrient analyses of soils before application.

The report is available in the following languages: English, Croatian, Moldovan, Bulgarian, Serbian and Ukrainian.

To view or download the report, visit the DRP website at:

http://www.undp-drp.org/drp/en/activities_1-2_-3_agriculture_fr_phase1.html



PROJECT INFORMATION SHEET AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES 'WFD AND AGRICULTURE WORKSHOP' 25-26 APRIL 2006, MALINSKA, CROATIA

GOALS

Between April 25-26, 2006, the International Commission for the Protection of the Danube River (ICPDR), together with the UNDP-GEF Danube Regional Project (DRP), organized a workshop in Malinska, Croatia. Its main goals were to:

- > Identify tools that can be used to support the implementation of the Water Framework Directive (WFD) in the Danube River Basin (DRB), especially the rural development (RD) measures available under the so-called Pillar II of the EU Common Agricultural Policy (CAP).
- > Create a better understanding and coordination between government water managers and agriculture managers in the DRB.
- > Share experiences between countries, international organizations and consultants.

KEY CONCLUSIONS

NEED FOR MEASURES

The agricultural sector is a key polluter of DRB waters. DRB countries need to incorporate measures into their river basin management plans (RBMPs) that reduce and prevent negative agricultural impacts to successfully implement the EU WFD objectives by 2015.

Many national governmental managers of water and agriculture need help in identifying what these measures should be. One of their main difficulties is to get farmers to make changes in ways that protect water resources. Currently, many DRB farmers are neither aware of their contributions to pollution nor of how to reduce them.

The following is a list of possible measures that could be taken at the national and international levels in the DRB. Ideally, the best measures are those where farmers and the government are in agreement, as opposed to penalties for farmers. A mix of measures is best, each mix tailored to the specific needs and realities of specific geographical areas.

The main types of measure available are regulatory, financial, and information and communication.

REGULATORY MEASURES

The main goal here is not to create new laws. Rather, farmer awareness of and compliance with existing legislation should be top priority, be that with national or international laws (e.g. EU Nitrates Directive, Water Framework Directive).

Compliance with existing legislation should be promoted to farmers as the 'baseline' for good practice. This principle is established within the recent reforms of the CAP which now includes mandatory 'cross-compliance' and makes the granting of payments to farmers conditional on their respecting environmental laws including the EU Nitrates and Groundwater directives.

FINANCIAL MEASURES

The most important opportunity for EU Member States and Candidate Countries to use financial measures to assist WFD implementation is the rural development (RD) measures available under Pillar II of the EU Common Agricultural Policy (CAP). Water protection (including support for WFD implementation) is one of three priorities for rural development measures targeting sustainable land management¹ during the coming period 2007-2013. A diversity of options and 'windows of opportunity' are now available for those lower Danube countries preparing to join the EU to better apply funds to water and environmental protection. However, many national water and agricultural managers are not taking full advantage of these.

Managers are encouraged to take account of a report produced by the CIS-Strategic Steering Group on "Agriculture and the WFD"² that reviews the 24 rural development measures eligible for EU co-financing during 2007-2013 that are relevant to WFD implementation. This includes agri-environment support payments for farmers that are obligatory for all Member States to implement and which can be used to encourage organic farming, reduce agro-chemical use and improve wetland management. Other potentially useful RD measures include grants for manure storage facilities, WFD and Natura 2000 compensatory payments and support for vocational training and agricultural advisory services.

Regarding windows of opportunity, there are different timelines for the WFD and CAP. The CAP will be reviewed between 2007-08. RD programmes will start being implemented in EU Member States in 2007 with the possibility for review from 2008 onwards. RBMPs required under the WFD need to be finalized by 2009.

It is crucial that national water and agriculture authorities at all levels start to cooperate and develop a common approach and efforts to provide maximum benefits for water protection. While the current CAP already has positive opportunities for assisting water protection, it also risks leading to more negative impacts – for example, decoupling payments to farmers from production might lead to more intensive agricultural practices in certain areas. Cooperation between water and agriculture managers could help to reduce such risks, particularly in sensitive catchments.

For example, it's important to avoid repeating recent experiences with CAP funding in the former EU 15 countries. According to a new European Environment Agency study³ related to this subject, most recent agri-environment funding under the CAP was allocated to intensive farming, much to the north of the continent.

¹ Priority Axis II of EC Regulation No. 1698/2005 establishing the European Agricultural Fund for Rural Development (EAFRD)

² This report was produced within the FP6 Research Project SSPE-CT-2005-006618-CAP-WFD: Water Framework Directive meets Common Agricultural Policy - Opportunities for the Future.

³ EEA Report 2/2006: [Integration of environment into EU agriculture policy - the IRENA indicator-based assessment report](#)

While it seems there is a current trend that RD funds spent on water protection are increasing, the overall budget is still small relative to the costs of agriculture to water. Given that agriculture is the biggest consumer of water in many areas, water pricing can do much to reduce water use.

INFORMATION AND COMMUNICATION MEASURES

Much more can be done in terms of making farmers more aware of the links between their activities, water pollution and solutions. Training and advisory services need to be improved to make farmers more aware of existing legislation, their obligations, penalties, funds and who they can turn to for help. If messages to farmers only include environmental benefits without financial gains, it is unlikely they will be interested to make changes to help reduce water pollution. 'Water Advisory Services' for farmers should not be linked to sanctions or inspections.

In many DRB countries, national water and agricultural managers have not yet created positive relationships nor begun to develop a common understanding or strategies for protecting water while keeping farmers happy. Inter-ministerial and –institutional dialogue needs improvement. Resolving this gap is a crucial next step. A common plan is needed before advising farmers in their countries. Agricultural managers generally appear to have a greater understanding of water protection needs than do water managers of agricultural needs, most probably because of the CAP's inherent references to water protection.

Information (especially quantitative) about the impacts of positive agricultural measures for water protection, ecologically and economically, are generally scarce despite a high demand for information from many stakeholders including the ICPDR. This problem was also highlighted in the IRENA report mentioned above.

BEST AGRICULTURAL PRACTICES (BAP)

Farmers need to know more about 'Best Agricultural Practices (BAP)' and how they can get BAP efforts supported. Farmers are encouraged to learn more about BAPs through demonstration projects in the DRB – dissemination of results from the DRP pilot BAP projects being implemented in north Serbia will be valuable here. More demonstration projects should be funded.

In general, farmers also need more funding to be able to invest in physically implementing BAP efforts (e.g. equipment, storage facilities) and this message should be communicated both to governments and donors. DRB national governments should introduce policies and laws that encourage or demand the use and application of BAPs by farmers. Organic agriculture is seen as a major opportunity both ecologically and economically in many lower Danube countries.

INTERNATIONAL SUPPORT

Workshop participants were advised to get more support and information from international organizations. This includes the DRP and the European Commission's Strategic Steering Group. Having more DRB international workshops geared to sharing experiences, such as the Malinska workshop, is recommended. For example, in the Autumn of 2006, a workshop will be held by DRP to disseminate findings from its BAP pilot projects. More can also be learned from the 53 NGO projects across the DRB that received DRP grant funding, especially at a national/regional level where many projects are working directly with farmers to encourage good/best agricultural practice as well as producing a useful range of outputs (e.g. demonstration farms, training programmes and information materials).

An inventory of such projects should be drawn up to serve as a basis for information and experience exchange between countries (building on work already done in Phase 1 of the DRP).

A comparison of the action programmes developed for Nitrate Vulnerable Zones in accordance with the Nitrate Directive would also be useful.

ICPDR

The ICPDR is currently involved with these issues and more involvement is encouraged. Nutrient pollution (especially from agriculture) was identified as one of the Danube's key water management issues through the 'Danube River Basin Analysis'. The ICPDR 'Pressures and Measures Group' is now working on a related Issue Paper.

The ICPDR has also produced a number of related products for DRB countries including:

- > Report: 'Recommendation on Best Available Techniques at Agro-Industrial Units'
- > Agriculture included as one of five sectors assessed in report: 'Policies and legal reforms and implementation of investment projects related to the ICPDR Joint Action Programme 2001-2005'
- > 'Emission Inventory Database' which includes emissions from agriculture

More needs to be done in terms of better informing the ICPDR of national plans and programmes geared to addressing the negative impacts from agriculture on water pollution. This will inform the development of the 'programme of measures' for the Danube River Basin Management Plan being prepared for 2009 – as obliged by the EU WFD – the ICPDR's highest current priority. This could also help improve the quality of inputs to the MONERIS system for modeling Danube nutrient pollution and for developing future scenarios.

Increased commitments toward this end could be sought at the next ICPDR Steering Group Meeting in June 2006. The ICPDR could also consider getting more involved in acting as an information broker, advising on political measures and participating in the mid-term review of the CAP – including through its membership on the EC's Strategic Group on CAP.

RELATED WEBSITE LINKS:

- > Danube Regional Project (DRP)
 - Agriculture and Water Pollution: www.undp-drp.org/drp/themes_agriculture.html
 - Full Reports: www.undp-drp.org/drp/en/activities_1-2_-_3_agriculture_fr_phase1.html
 - Project on BAPs: www.carlbrodrp.org.yu/page1
 - NGO Grants for agriculture-related work: www.undp-drp.org/drp/themes_agriculture_NGO-grants.html
- > ICPDR: www.icpdr.org/icpdr-pages/agriculture
- > EC Strategic Steering Group: www.defra.gov.uk/environment/water/wfd/0509-conference/index
- > EEA IRENA study: http://org.eea.eu.int/documents/newsreleases/irena_06-en
- > Ecologic: www.ecologic.de/modules.php?name=News&file=article&sid=1369
- > European Commission:
 - Water Framework Directive: http://ec.europa.eu/environment/water/water-framework/index_en.html
 - Nitrates Directive: http://ec.europa.eu/environment/water/water-nitrates/index_en.html

PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES

DEMONSTRATION SITES

ABOUT THE FARMS

To help reduce pollution, a demonstration project financed by the UNDP-GEF Danube Regional Project (DRP), and implemented by Danish company Carl Bro, trained farmers in rural Vojvodina, Serbia in applying best agricultural practices (BAPs).

Eight demonstration farms in Vojvodina, located north of Belgrade near the city of Zrenjanin, were selected. Intensive agriculture is the main occupation here, the local economy suffers and improved farming practices are needed. Severe floods, including recent floods which submerged houses and waste dumps, further threaten residents living near the Romanian border.

The farms operate livestock production including pigs, cows and chickens, and crop production such as maize, sunflower and barley. One Vojvodina factory in Zitiste village employs 3,000 people and daily slaughters 30,000 chickens (12 million chickens yearly). Wastewater and manure are poorly managed and pollution enters the adjacent Begej River and Danube-Tisza-Danube (DTD) Canal. Another factory in Zlatica village has 600 milking cows. Manure storage is a big problem and significant liquid waste pollution from the cows runs directly into the DTD canal.

In general, bad farming practices are a main source of nutrient and toxic pollution seeping into local water bodies that lead to the Danube River and Black Sea. Bad practices include the poor storage of manure and slurry (liquids with high solid concentrations) from livestock, manure and slurry distribution onto farm fields, the poor protection of chemical storage facilities and faulty application of pesticides.

PROJECT SUCCESSES

Project successes include the training of farmers and farming extension services in fertilizer planning, and designing and constructing manure storage and slurry tanks.

The project tried to raise finances from the state and private sectors to construct manure stores and slurry tanks and purchase equipment. A campaign has informed local and national Serbian media at seminars and demonstration sites. Farmers and journalists participated in an international farming fair in Denmark to learn about the latest advances in BAPs.

Besides providing environmental advantages, farmers also benefit economically from BAPs through reduced expenditures on fertilizers and pesticides, more cost-effective farming practices and the improved quality of their products.

RESULTS REPLICATION IN THE DANUBE BASIN

The final results from the Vojvodina demonstration sites will be used to assist farmers throughout the Danube River Basin, especially in Bosnia and Herzegovina, Bulgaria, Croatia, Moldova, Montenegro, Romania, Serbia and Ukraine. The Vojvodina farms are representative of farming practices in these countries participating in the project where agriculture is both a key economic sector and pollution source.

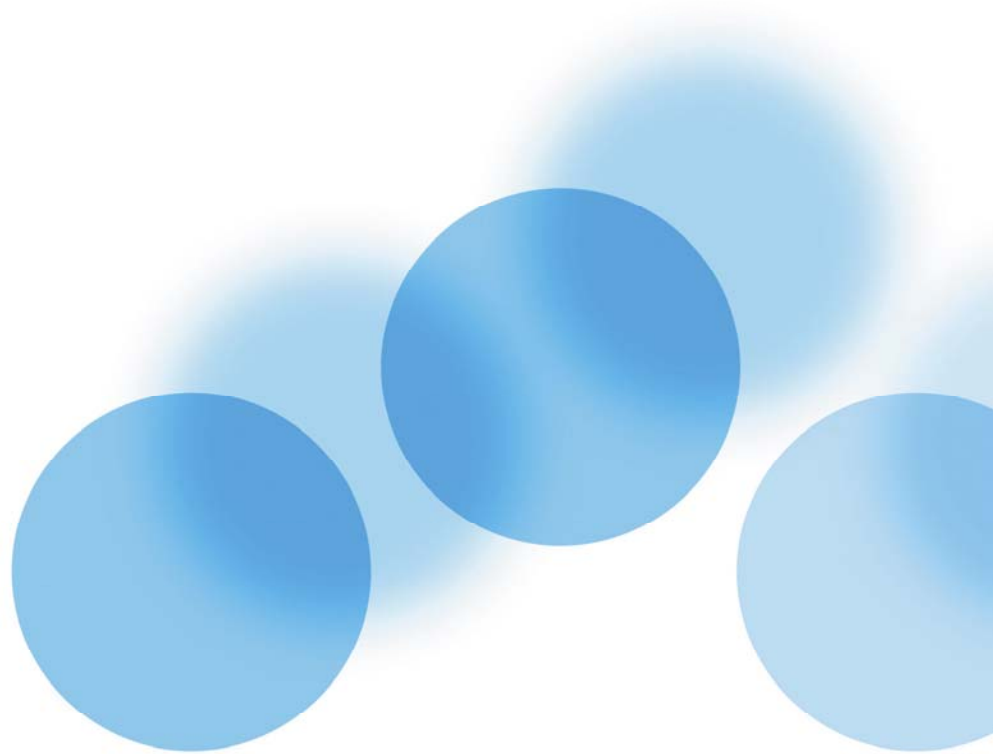
Project partner organizations in each country developed national plans for disseminating results and transferring know-how from the Vojvodina farms to farmers, farming advisory services and local authorities through trainings, publications and media relations.

To find out more about the demonstration sites, visit:

www.carlbrodrp.org.yu

and

www.undp-drp.org/drp/themes_agriculture.html



PROJECT INFORMATION SHEET

AGRICULTURE AND DANUBE WATER POLLUTION

PRODUCTS AND ACTIVITIES NGO GRANTS

The following is a list of Small Grants that were provided through the UNDP-GEF Danube Regional Project (DRP) Small Grants Programme (SGP) to non-governmental organizations (NGOs) in the Danube River Basin. The grants were used to promote the reduction of water pollution from agriculture in the Danube Basin.

Grants were distributed in **two rounds**, each with their own set of **Regional** (multi-country and multi-NGO) Grants and **National** (one country, one NGO) Grants. The first round had two Regional Grants and 25 National Grants related to agriculture and Danube water pollution. The second round had two Regional Grants and 24 National Grants.

GRANT NAME	LEAD NGO
1ST ROUND	
REGIONAL GRANTS	
Addressing Nutrient and Toxic Pollution in the Sub-basins of the Morava, Mura and Ogosta rivers. (Slovakia, Bulgaria, Slovenia)	Daphne
Support and Promotion of Ecological Agriculture in the Production Areas Located in the Danube Basin. (Czech, Serbia and Montenegro, Slovakia)	Pro Bio
NATIONAL GRANTS	
BOSNIA	
Knowing pesticides and their use	Green Vrbas, Srbac
Nutrient Source Reduction on Area of Municipalities of Visoko and Kladanj	Fondeko-Association for Sustainable Development Stimulation and Quality of Life
Building a Partnership in Local Community against Nutrient Pollution	COOR Centre for Environmentally Sustainable Development, Sarajevo
BULGARIA	
Care and Responsibility for Our River	Ecomission 21 Century, Lovech
Eco-accent – Plant Growing in Dobrudzha	Black Sea NGO Network, Varna
Development of Partnership for Reduction of Pollution of the Yantra River Basin	NM Ecoglasnost

GRANT NAME	LEAD NGO
CROATIA	
Promoting Methods of Eco- and Organic Agriculture	Europe House Vukovar
What Has to Be Known about Nutrients and Toxic Ingredients in Danube Environment	Franjo Koscec Society for the Protection and Improvement of Human Environment, Varazdin
Agriculture for Life: Agriculture as a Friend to Animals – One Step in the Danube Basin Pollution Reduction	Eleonora Society for Nature and Environment Protection
CZECH REPUBLIC	
Public Participation on Improving Water Quality in Horni Olsava Basin	CSOP Veronica, Brno
Eco-farming Campaign in Morava River Basin	EPOS Eco-Farming Advisors Association
HUNGARY	
Water Quality Protection in South Great Plane Region	Csemete
Chemical-Free Agriculture on Floodplains	WWF Hungary
Bio-agriculture in Bodrog-Koz Floodplains	MAKK
Toxic and Nutrient Reduction in Sajo River Valley	Green Action Association
MOLDOVA	
Developing Capacities to Promote Organic Farming to Reduce Nutrient Pollution in the Danube River Basin (Project covers Falesti District Area)	Cutezatorul
ROMANIA	
Promoting Measures to be Undertaken for the Reduction of Agricultural-Originated Nutrient Pollutants in the Mehedinti County Danube Basin	Speo-Alpin MH Mountain Tourism and Ecology Association
Promoting and Implementing Organic Farming Practices for the Reduction of Chemical-Farming Substances in the Low Danube Basin	BIOTECH Foundation
SERBIA AND MONTENEGRO	
Organic Agriculture: The Step Towards Danube River Basin Preservation	Terra's
The Environmental Value of Moravica Watershed and Pollutants Identification	Experts Network Citizen Association, Aleksinac
Tara – Welfare and Obligation	Society of River Tara Friends
Towards Pollution Reduction of Upper Stream	Green Network of Vojvodina
SLOVENIA	
Promotion of Organic Farming, Environmental Farming Standards	Slovenian Union of Organic Farmers
UKRAINE	
Carpathians without Pesticides – Clean Danube	WETI Journalist Environmental Public Org.

GRANT NAME	LEAD NGO
School of Environmental Leadership	New Generation All-Ukrainian Public Association
2ND ROUND	
REGIONAL GRANTS	
Cross-sectoral Cooperation for Good Water Quality Management on Lower Danube Farms (Bulgaria, Romania)	Association for Integrated Rural Development, Bulgaria
Best Agricultural Practice in my Farm (Bulgaria, Romania, Moldova)	Black Sea NGO Network, Bulgaria
NATIONAL GRANTS	
BOSNIA AND HERZEGOVINA	
Improvement of Water Protection for Farms and Slaughter Houses in the Sava River Basin	Local Initiative for Development LIR, Banja Luka
Save the Spreca River (Sava River Basin)	Development Association NERDA/Ekopot/Radio Kameleon, Tuzla
Let Clean Water Flow Down the Ukrina, Sava and Danube Rivers in to the Black Sea	Ecological Society Ekologika/NGOs Forum Derventa
BULGARIA	
To Stop Danube River Nutrient Pollution	World for Everyone Association, Silistra
Establishment of Informational and Educational Centre in Town of Vidin	Bulgaria in Europe Association, Vidin
CROATIA	
Promoting Methods of Eco and Organic Agriculture - 2nd phase	Europe House Vukovar, Vukovar
CZECH REPUBLIC	
Meadow Society - Nutrient Indicators in the River Basin	Daphne
Moravian Carst - A Model Site of Protected Surface and Underground Carstic Waters in the Danube Basin	Renesance of Country Association
Organic Agriculture for Water Protection - Instructional Presentation and its Use for Moravia River Basin	Bioinstitute o.p.s., Olomouc
HUNGARY	
Chemicals-Free Zone along the Átalér	Center for Environmental Studies (CES)
Chemical Reduction and Pollution Prevention Campaign	Clean Air Working Group
MOLDOVA	
Public Involvement in the Process of Nutrient Reduction in the Lower Prut Basin and Nutrient Pollution Prevention through Complex Monitoring of the Quality of the Environment	Cahul Ecologic Consultations Centre

GRANT NAME	LEAD NGO
The Reduction of Nutrient Pollution in the Danube Hydrographical Basin through the Promotion and Use of Good Agriculture Practices	Public Association "Cutezatorul"
SERBIA AND MONTENEGRO	
Organic Agriculture – A step forward to protect the Danube basin	Terra's
Promotion of Best Available Techniques with Alternative Industrial Wastewater Treatment Methods which Enable Efficient Elimination of Nutrients and Toxic Matters from Intensive Farming and Food Production Sectors	Initiative for Democratic Transition (DTI), Belgrade
SLOVENIA	
Effective Water Protection in Rural Areas, Podonavje, Using Eco-remediation	Institute for Environmental Protection Promotion
Underground Water and Farmers	Society "Krnica"
Individual Waste Water Cleaning Systems for Households and Farms in the Areas of Dispersed Settlements	ICRO, Institute for Integral Development and Environment
ROMANIA	
Preventing and Reducing Nutrient Pollution from Agro-Zoo Technical Sources in the Olt River Basin	Association for Sustainable Development Slatina
Cooperation to Reduce Nutrient Pollution from Agricultural Sources in Ilfov County	Ecological Club UNESCO Pro Natura
Clean Land, Rich Man!	Alma-Ro Association
Action Plan to Reduce Nutrient and Pesticide Pollution in Maramures	GREEN VALLEY Association
Clean Waters, Without Nutrients, Through Natural Fertilisers	Association for Ecology and Sustainable Development Iasi

Detailed 'stories' will be written about some of the most successful individual projects above.

DRP WEBSITE:

'Agriculture and Water Pollution' theme: www.undp-drp.org/drp/themes_public-participation.html

'Public Participation and Communications' theme: www.undp-drp.org/drp/themes_public-participation.html



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DANUBE
REGIONAL
PROJECT

AGRICULTURE AND DANUBE WATER POLLUTION



Photo: Victor Mello

NGO Grant Story

PUSHING ORGANIC FARMING THE CZECH WAY

Today in the Czech Republic, organic farming is no longer an exotic activity. There are now over 830 organic farmers in the country, with 30% of them owning from 100 to 500 ha of land. To further promote this practice, a grant was provided by the UNDP/GEF Danube Regional Project (DRP) to 'Bioinstitut', a research centre for organic farming located in the city of Olomouc, Czech Republic.

Bioinstitut was founded in 2004 by the Czech-based Pro-Bio Association of Eco-Farmers (winner of an earlier DRP regional grant), the Olomouc University and the Swiss Research Institute for Organic Farming (FiBL). Among its educational and research activities, the Bioinstitut organises the 'Bioacademy' on organic farming, an international experience-sharing event of the eco-farming community.

The grant focused on reducing agricultural pollution by encouraging organic farming in the Morava River Basin. To better train local farmers, Bioinstitut prepared a number of education tools to be used by target audiences such as farmer unions, new information centres, farm advisors, agrarian chambers and governments.

Tools included 12 different Powerpoint presentations on pollution prevention and reduction, legal frameworks, plant nutrition and protection, animal breeding, farm conversion and eco-farm management planning. Short films and animations were produced to present environment-friendly technologies for water protection and good practises in grassland management. A seminar for agricultural schools was held and the new specialized publication 'Organic Farming in Practice' was released for distribution in January 2007 to help advisors train new organic farmers across the country. Excursions were also made to the Beskydy Mountains and Munich, Germany where a large project using organic farming for water protection was visited.

A big success was that 50 new farms started to practice organic farming in 2006 in the Morava Basin due to the quality advisory services of PRO-BIO and its partners.

"My farm is on the junction of two rivers, the Morava and Desná," said Přemysl Čech Postřelmov, a farmer who recently converted to organic. "I learned about the project in the PRO-BIO information centre in Šumperk. I organically manage grasslands and wanted to convert arable land but I needed special information. In the workshop, presentations about the organic management of arable land in relation to water protection were shown. I will also use the advisory service from the Bioinstitut in Olomouc in the future."



Photo: Victor Mello

"Regarding plant cultivation, our teacher showed us new presentations about organic farming and water protection," said Jaromír Chvojka, a student at the secondary agricultural and life science school in Rožnov pod Radhoštěm. "We knew about this issue already from earlier lectures and we have the handbook on organic farming. But the teaching in this form with photos and graphs was much nicer, because it was catching and illustrative."

The outputs of the project are being used by the two networks of agro-environmental information and advisory centres of the PRO-BIO Association in Pardubice, Olomouc, Moravia-Silesia and Zlín region, and of the EPOS Association of advisors in South Moravia and Vysočina region.

Finally, the DRP-funded presentations will be broadly promoted through local and regional newspapers, on NGO websites (www.pro-bio.cz, www.bioinstitut.cz), Bioinstitut publications, secondary agricultural schools in the region, KIS (Regional Information Centres for Agriculture), the international Bioacademy 2007 in Lednice n. Moravě, three Bioinstitut workshops about organic farming and agro-environmental programmes in Olomouc and Jihlava which include workshops for farmers, teachers and professionals.



Photo: Victor Mello