



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

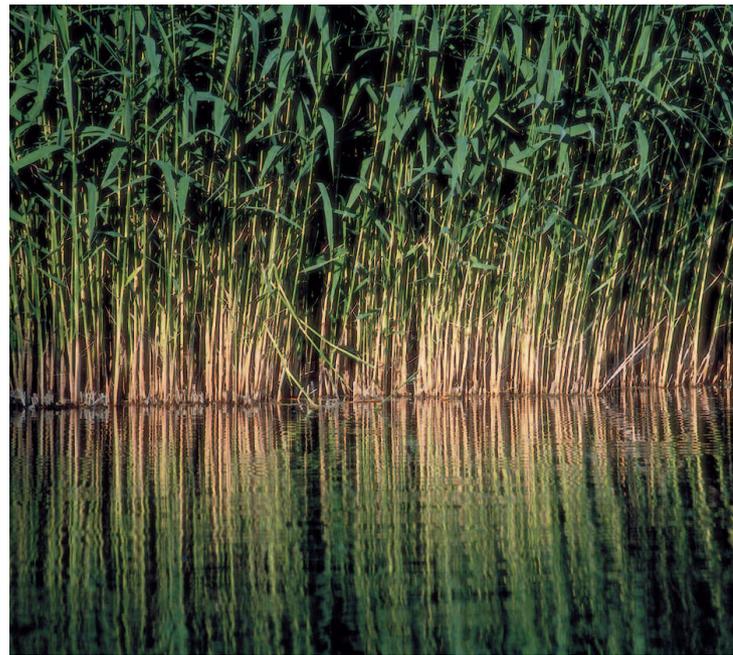
Few are aware of nutrient pollution from agriculture to the water – for example, from nitrogen. Nitrogen is the most important mineral nutrient for plants, playing a crucial role in plant growth and photosynthesis. In soluble form, nitrogen becomes ‘nitrate’ – easily leached from soil into water. And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

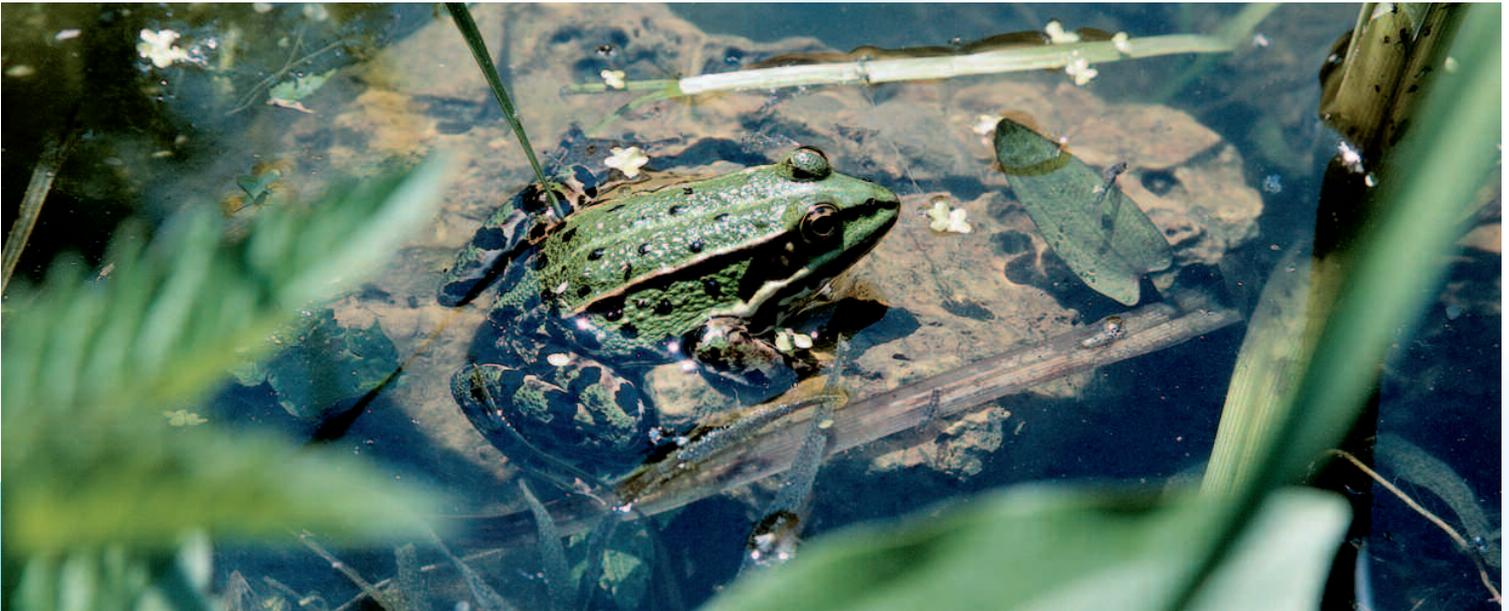
The Danube Analysis also found groundwater in the DRB at high risk of pollution from agricultural fertilizers and chemicals. That's a big problem because groundwater is the source of 95% of the public water supply in some Danube countries. Many people get water from their own private wells – as high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

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.

MEETING THE LAW

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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