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INTEGRATED WATER RESOURCE MANAGEMENT IN THE BLACK SEA BASIN

Background

This policy brief is developed in the framework of the enviroGRIDS @ Black Sea catchment project that is particularly targeting the needs for observational data to answer the objectives of the Commission on the Protection of the Black Sea Against Pollution (BSC) and the International Commission for the Protection of the Danube River (ICPDR).

EnviroGRIDS main objective is to build capacity in the Black Sea Basin to construct, maintain and use modern Earth observation systems in order to contribute to the Global Earth Observation System of Systems (GEOSS). EnviroGRIDS is particularly targeting the Water Societal Benefit Area by building the first full hydrological model for the Black Sea catchment that will allow to explore the outcomes of integrated scenarios of change (climate, land cover and demography) on the water quality and quantity of all rivers basins in a comparative way.

Introduction

Integrated Water Resource Management (IWRM) translates essentially in the European context into the Water Framework Directive (WFD), which was adopted by the European Parliament in 2000. The WFD meant an important step forward in water related policy making in Europe. The overall idea of the WFD was to reduce and avoid pollution of all kinds of water, clean what was polluted and protect what was still clean, while getting the citizens involved in doing so. Before 2000 water regulations were mainly bound to administrative boundaries rather than to water-relevant boundaries such as river basins. Regulations were defined to protect water quality per sector and measures were limited to the scope of ones authority. The WFD introduced some new principles that were already finding their way in policy making of several member states.

Main principles WFD

First of all the WFD encompasses all types of water, from rivers and lakes, to beaches, shorelines and groundwater bodies. Secondly, in traditional water management, these various types of water are often regulated by different legislations and fall under the authority of different institutes. In order to further pull the line of water-relatedness, the working unit of the WFD becomes the river basin, moving away from administrative boundaries as communes, provinces, districts or countries that more often than not cross across water-related boundaries. This requires the installation of a regulating body for the

whole river basin. For many transboundary rivers, these bodies unite representatives of different countries. One extreme case is the river Danube, which is now regulated by the ICPDR (International Commission for the Protection of the Danube River). The ICPDR is driven by the interests of 19 riparian countries and of the European Union (EU).

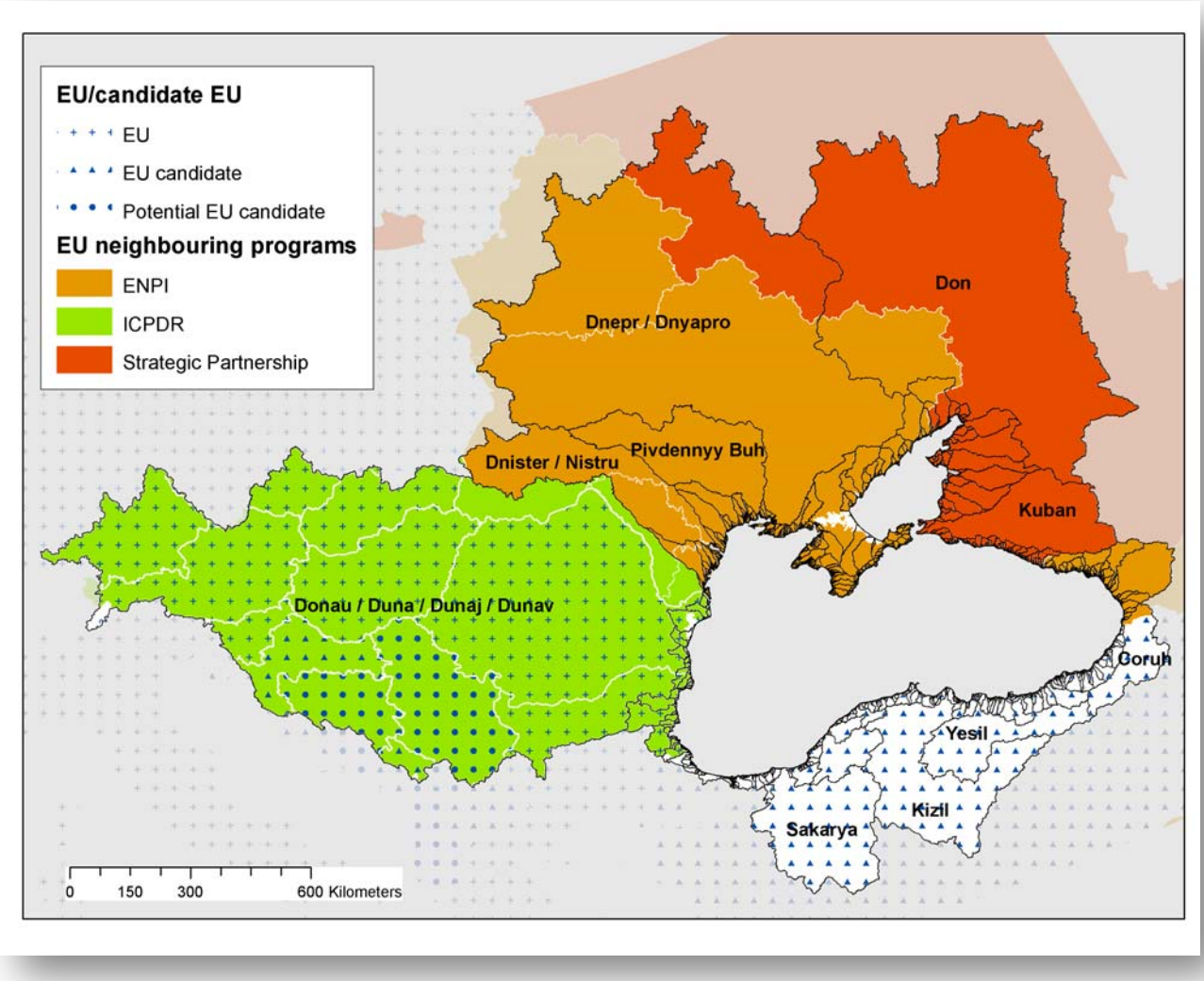
The WFD also requires that all surface water has "good status" by a set deadline. At the moment this deadline is 2027 (after three management cycles). For surface waters the "good status" compares to a situation of minimal anthropogenic impact. This refers to quality of the biological community, hydrological characteristics and chemical characteristics. The WFD also requires the delineation of zones with higher objectives for the protection of unique and valuable habitats, protection of drinking water resources and protection of bathing water. For groundwater bodies should not be polluted at all, meaning no direct discharges, and monitoring for indirect discharge. For nitrates, pesticides and biocides strict limits are set. Abstraction of water is limited to 'sustainable' amounts.

Key objectives for WFD:

- expanding the scope of water protection to all waters, surface waters and groundwater
- water management based on river basins
- achieving "good status" for all waters by a set deadline
- "combined approach" of emission limit values and quality standards
- getting the prices right
- getting the citizen involved more closely
- streamlining legislation

Influence WFD on Black Sea Basin

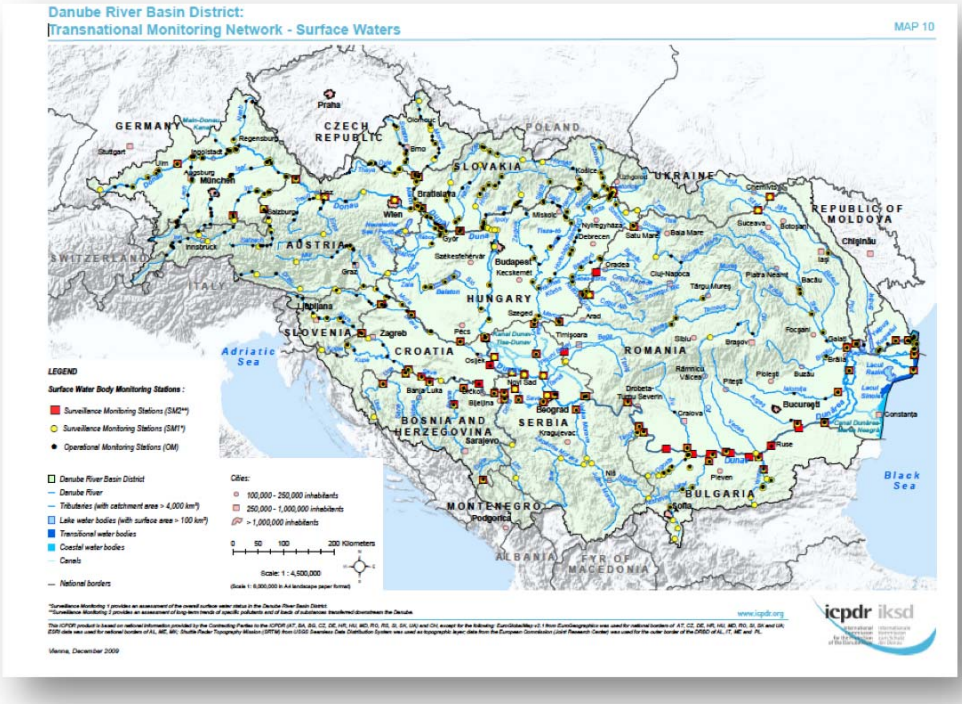
Given that the WFD is probably the most comprehensive and integrated water legislation worldwide, one can wonder how much it has influenced the water management policies in the countries around the Black Sea.



Danube basin

The Danube basin is the largest river catchment in the Black Sea Basin (BSB) and nineteen countries share this basin. Twelve countries are member of the EU, and thus have to comply with the WFD. Failing to comply with the EU legislation would end before the judges of the European Court of Justice. For the accession countries, additional deadlines are set in the accession negotiation. However, also the non-EU countries have agreed to apply WFD principles for the water management issues in the Danube.

Yet in 1994, the Danube River Protection Convention was signed forming the overall legal instrument for co-operation on water management in the Danube Basin. Its main objective is to



ensure that surface waters and groundwater within the basin are managed and used sustainable and equitable. This also includes reducing the pollution loads into the Black Sea. The convention is implemented by the **International Commission on the Protection of the Danube River (ICPDR)**.

In 2000 a new resolution made the implementation of the EU WFD the main priority of the ICPDR (the implementation body of the Danube Convention). At the same time a single, basin-wide Danube River Basin Management Plan would be developed, coordinated by the ICPDR. The resolution was backed by the political commitment from Ministers from all countries, including non-members, to make all efforts towards these objectives. Despite that there was no legal obligation for all countries, the first Danube RBMP was submitted in time end 2009.

The Joint Danube Survey, a boat cruise along the Danube held in 2001 and in 2007 proved that the overall water quality has improved significantly. The Danube basin is a flagship example of how the WFD successfully improves water management, even when non-EU countries are involved.

Turkey

Turkey is also bound to implement the WFD as a candidate EU-country. It is one of the major issues in Turkey's EU accession process. Since 2000, there have been continuous efforts for making a good progress in this area (the "Implementation of the Water Framework Directive in Turkey" project supported by the MATRA pre-accession program of the Netherlands, "Environmental Heavy-cost Investment Planning" project developed for the Ministry of Environment and Forestry (ENVEST)" and "Re-structuring of the Turkish Water Sector for the implementation of WFD" project).

So far Turkey has started to implement new legislations, and a river basin structure has been set up. The problems in establishing watershed management plans are mainly related to transboundary river basins shared with the Middle-east (Tigris-Euphrates), rather than to basins draining to the Black Sea.

Until now, an environmental infrastructure is lacking. The environment chapter has been opened on 21.12.2009 and Turkey has committed to implement the legislative revisions regarding the implementation of WFD within the period of 2009-2013.

The EU twinning project called "Capacity Building Support to the Water Sector in Turkey" is to assist Turkey in bringing its water management system in line with EU water and environment legislation to enable the full implementation of the EU water acquis by the date of Turkey's accession to the EU. The project focuses on the Water Framework Directive (WFD) and subsequent daughter directives, the Urban Wastewater Treatment Directive and the Dangerous Substances Directive (DSD).

However, according to a 2006 progress report, limited progress was observed on the implementation, and significant efforts are needed to achieve full compliance by accession. Hence the EU influence will remain the driving force for national water policy for the upcoming years as well.

EU programs with neighbouring countries

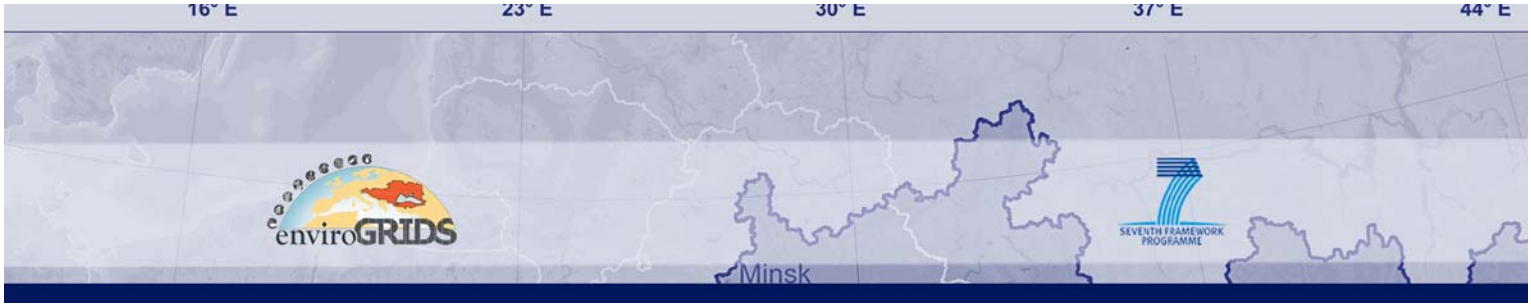
Since the adoption of the WFD, the EU started a number of programs for formal cooperation with its neighbours in Eastern Europe and the Caucasus. The five other countries in the Black Sea basin (not IDPDR, EU or EU candidate) fall to some extent under these programs: Russia, Belarus, Ukraine, Moldova and Georgia.

TACIS ('Technical Aid to the Commonwealth of Independent States', 2000-2006) aims to promote the transition to a market economy and to reinforce democracy and the rule of law in the partner states. Amongst the 6 target areas are assistance to institutional and legal reform, better environmental protection and sustainable management of natural resources.

In 2002 at the World Summit for Sustainable Development in Johannesburg, the EU launched the **Water Initiative (EUWI)**. The goal is to mobilise and coordinate all available EU resources to achieve the water-related Millennium Development Goals in partner countries. It focuses on the national policy dialogues through participative multi-stake holder approach. One of its objectives is more cooperation on river basins "to strengthen cooperation through promoting river basin approaches in national and transboundary waters".

From 2007 onwards TACIS evolved into the **ENP 'European Neighbourhood Policy'**, which aims at promoting good governance and social development in Europe's neighbours through closer political links, partial economic integration, support to meet EU standards and assistance with reforms. With each of the partner countries an Action plan with concrete measures has been defined. In return for progress on reforms, the EU offers enhanced market access and increased assistance and integration. **ENPI (The European Neighbourhood and Partnership Instrument)** covers four Black Sea Basin countries: Belarus, Ukraine, Georgia, Moldova. Except for Belarus, action plans have been negotiated. Russia is covered by a separate **strategic partnership** (established in 2003) consistent with the ENP. In the action plans a specific mentioning is made of the transboundary approach to water management and of active participation in EUWI.

One specific project under ENP is **"water governance in the Western Regions of EECCA"** to share the advanced practices of EU. The project has two dimensions. While one focuses on country-specific activities that promote good practice nationally, the other provides for regional measures that help ensure compatible and mutually comprehensible approaches to water management in all Partner Countries. It also contributes to the National Policy Dialogues set up under the EU Water Initiative to support individual countries. The accompanying equipment package helps to reinforce the permitting and control mechanisms and provides the necessary information on water quality for setting the appropriate quality standards. Technical assistance in the development of River Basin Management Plans is provided, and pilot projects are selected, four in Ukraine and two in the other countries.



UN regional commission for Europe

In parallel to EU efforts UNECE, the UN regional commission for Europe, has adopted a convention on the protection of transboundary watercourses and international lakes in Europe (UN/ECE Water Convention). It obliges parties to prevent, control and reduce water pollution from point and non-point sources. It also includes provisions for monitoring, research and development, consultations, warning and alarm systems, mutual assistance, institutional arrangements, and the exchange and protection of information, as well as public access to information. Under this convention a number of workshops have been organized and pilot cases started.

Under the UNECE, the Joint river management program runs pilot programs in eight transboundary rivers. The Pripyat (Belarus, Ukraine) was chosen to introduce the application of river basin management principles, with a focus on conservation of wetlands. In Ukraine the Watman project will try to demonstrate the synergy between Protocol on Water and Health and WFD on a pilot case to select.

Considerable leverage for the implementation of WFD principles

All these programs and partnerships are only the top pick of more than 100 bilateral and multilateral instruments that exist in the region. Together they give a **considerable leverage** for the implementation of WFD principles in neighbouring countries. And this leverage is starting to produce visible results.

All four countries under ENPI have now a system of Surface Water Quality standards, and a water quality classification system, similar to the systems under WFD. However national laws do not require the development of River Basin Management Plans, as conceived in the WFD.

In Ukraine the EU expertise was used to set up basin councils for most rivers. So far these councils have only advisory functions. The 'polluter pays' - principle could be stronger.

In Georgia water policies used to be very scattered and sector-based. Now there is a draft on the table for a new framework water law. The draft follows to large extent the outlines of the WFD, combining it with more detailed and specific regulations, needed at national level.

Also in Moldova a similar draft law is in the pipeline. Ukraine intends to adopt the EU WFD in parallel to the Protocol on Water & Health (by OECD).

The Black Sea used to suffer from pollution, bad water quality and eutrophication. With the economic recession in the former eastern-European countries, these problems started to reduce. **Could the WFD now give a new boost to this trend?**

How can enviroGRIDS contribute the WFD in the Black Sea Basin?

By building spatially-explicit integrated scenarios of scenarios of climate, land cover and demographic changes for the entire Black Sea catchment, enviroGRIDS brings some very valuable information to complement traditional river basin management plan, filling also a gap in the present WFD that is not taking into account climate change sofar. Demographic data is also essential to assess population vulnerability to water scarcity.

The Soil and Water Assessment Tool (SWAT) is used by enviroGRIDS to calibrate a full catchment hydrological model. This model will be very useful to bring evaluation of water quantity and quality where monitoring data is lacking. It will also allow comparing observed versus predicted data as in diagnostic tool. SWAT output will be by nature transboundary and standardized across the entire catchment. Any river basin authorities will be able to download the full dataset concerning its particular basin of interest to start using SWAT at a basin scale and improving it with local data. SWAT is also a very interesting tool for Integrated Water Resource Management as it is closely related with agricultural models, and can be linked for instance with ecological models, flood models or hydraulic energy production models.

EnviroGRIDS will help national water authorities to reach core international datasets that are

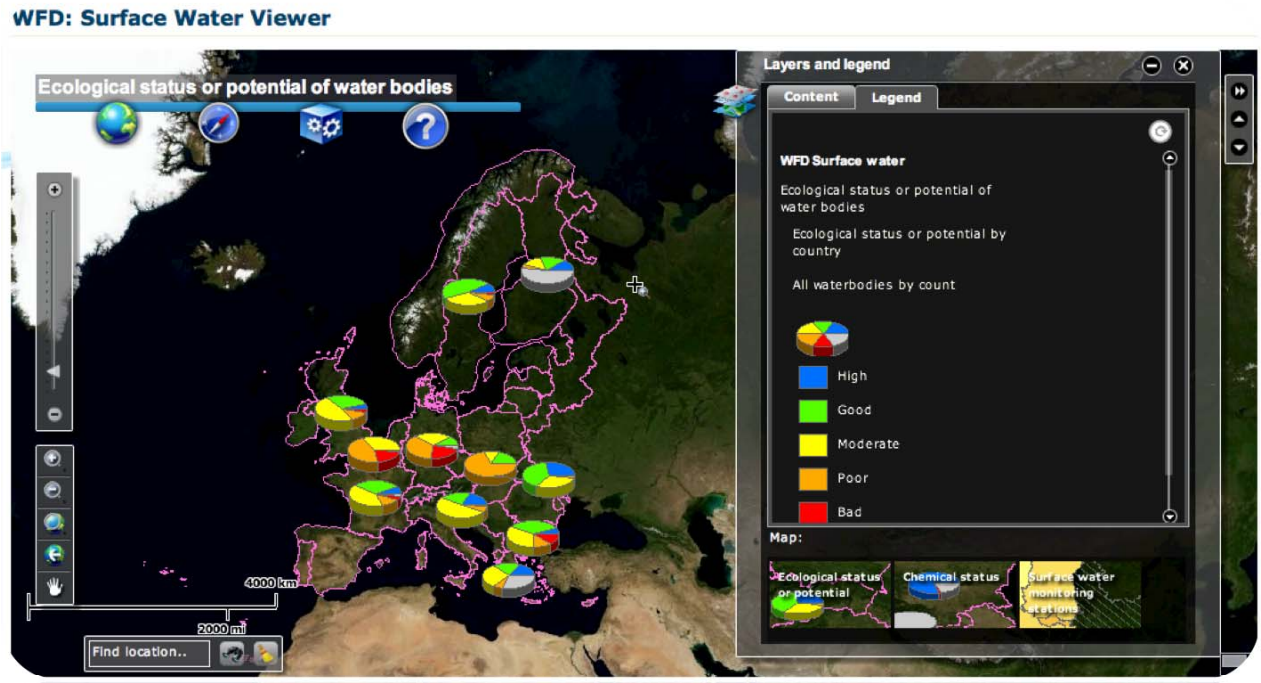
referenced into INSPIRE and/or GEOSS. EnviroGRIDS will also help regional databases specialised on water or biodiversity to make available their data so that they can reach the Water Information System for Europe (WISE) and the Biodiversity Information System for Europe (BISE).

WISE and BISE

The WFD needs a lot of observational data to assess the quality of the rivers based on water and biodiversity samples. The information collected by different water authorities across Europe should find its way to the Water Information System for Europe (WISE) and the Biodiversity Information System for Europe (BISE), which in turn will be able to present the water quality in all regions of Europe in a comparable way.

KEY WEBSITES

- **WFD**: http://ec.europa.eu/environment/water/water-framework/index_en.html
- **ICPDR**: http://www.icpdr.org/
- **TACIS**: http://europa.eu/legislation_summaries/external_relations/relations_with_third_countries/eastern_europe_and_central_asia/r17003_en.htm
- **ENPI**: http://www.enpi-info.eu/eastportal/content//361/EuroEast%20Projects
- **ENPI**: http://www.enpi-info.eu/maineast.php?id=209&id_type=10
- **EUWI-EECCA**: http://www.euwi.net/eecca-meetings
- **WISE**: http://www.wise.eu
- **WISE**: http://www.eea.europa.eu/themes/water/interactive/soe-wfd/wfd-surface
- **BISE**: http://www.bise.eu
- **enviroGRIDS**: http://www.envirogrids.net



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ENVIROGRIDS AND THE WFD

ENVIROGRIDS CONSORTIUM:

UNIGE/UNEP, Switzerland; AZBOS, Ukraine; ARXIT, Switzerland; BSC PS, Turkey; BSREC, Bulgaria; CCSS, Czech Republic; CERN, Switzerland (Int.); CEU/ACWC, Hungary; CRS4, Italy; DDNI, Romania; DHMO, Ukraine; EAWAG, Switzerland; Geographic, Georgia; ICPDR, International Organization; IGAR, Romania; IHE, The Netherlands (UN); INHGA, Romania; ITU, Turkey; IBSS, Ukraine; MEF, Turkey; NIMH, Bulgaria; ONU, Ukraine; ANTEA, Belgium; SPSU, Russian Federation; TNU, Ukraine; UAB, Spain; UMA, Spain; UTC, Romania; USRIEP, Ukraine; VITUKI, Hungary.

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