
Addressing Flooding in the Danube Regions

icpdr **iksd**

International
Commission
for the Protection
of the Danube River

Internationale
Kommission
zum Schutz
der Donau

The ICPDR Flood Action Plans for the Sub-basins

Flood events are a feature of all river systems but, as has occurred over recent years in the Danube Basin, they can often have disastrous consequences for the people living there. Flooding and its impacts have been worsened by past decisions on how to use and manage the river system. Future climate change is expected to increase the magnitude and incidence of flood events and the coming decades are likely to see a higher flood risk in Europe and greater economic damage. While flooding cannot be prevented, returning rivers to a more natural state and undertaking other sustainable measures across the Basin can greatly reduce their frequency and the damage they cause. As part of this process, planning at the sub-basin level is essential. **In 2009, the International Commission for the Protection of the Danube River (ICPDR) published 17 sub-basin flood action plans covering the entire Danube catchment.**



Tackling Flooding at the European, Danube Basin and Sub-basin Scale

In 2004, the ICPDR adopted the ‘Action Programme for Sustainable Flood Prevention in the Danube River Basin.’ The goal of the Programme is to form a long term and sustainable approach to managing flood risk in order to protect human life and property while encouraging conservation and improvement of water related ecosystems. Whilst the Action Programme provides the overall strategic framework, given the region’s size, complexity and internal variations, detailed planning on the ground is required at a more convenient scale: the sub-basin. A sub-basin can be defined as a portion of a river basin drained by a single river or group of minor rivers. Examples of Danube sub-basins include the river basins of the Tisza, Sava, Drava and Morava tributaries.

“The disastrous flood events of the past 15 years have caused untold human misery and material damage on a massive scale in the Danube Basin.”

In addition, the European Floods Directive (EFD) which aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity, came into force in 2007. As the ICPDR’s Action Programme has been designed in full coherence with the EFD, sub-basin flood action plans are an important step towards implementation of the EFD in the Danube River Basin.

“We have had to re-think the way we deal with flooding – changing fundamental attitudes from those of dominating nature to acceptance that we must learn to live with floods and concentrate on reducing and mitigating their impacts.”

Principles of the ICPDR Action Programme for Sustainable Flood Prevention

- **A shift from defensive action against hazards to proactive management of risk**, as well as the belief that people will need to accept flooding as part of their lives.
- **The river basin approach**, taking into account the EU Water Framework Directive.
- **Joint actions** by governments, municipalities and stakeholders geared to flood risk management and awareness raising.
- **Reducing flood risks** via natural retention, structural flood protection and hazard reduction.
- **Solidarity**: the belief that one region should not pass on water management problems to another. The appropriate strategy consists of a three-step approach of retaining, storing and draining: regions should make every effort to firstly retain rainfall in situ; store excess water locally and, only after this has been attempted, allow the water to be discharged to the watercourse.

The 17 sub-basin action plans cover the entire basin, consisting of the following sections:

1. **Upper Danube** (Germany and Austria)
2. **Inn** (Germany and Austria)
3. **Austrian Danube** (Austria)
4. **Morava** (Czech Republic, Austria and Slovakia)
5. **Vah, Hron and Ipeľ** (Slovakia, Czech Republic and Hungary)
6. **Pannonian Central Danube** (Austria, Slovakia, Hungary, Serbia and Croatia)
7. **Drava and Mura** (Austria, Slovenia, Croatia and Hungary)
8. **Sava** (Slovenia, Croatia, Bosnia-Herzegovina and Serbia)
9. **Tisza** (Slovakia, Ukraine, Romania, Hungary and Serbia)
10. **Pannonian Southern Danube** (Croatia, Serbia and Romania)
11. **Banat** (Serbia and Romania)
12. **Velika Morava** (Serbia and Bulgaria)
13. **Bulgarian tributaries** (Bulgaria)
14. **South-central Romanian tributaries** (Romania)
15. **Lower Danube Corridor** (Romania and Bulgaria)
16. **Prut and Siret** (Ukraine, Moldova and Romania)
17. **Danube Delta - Liman** (Ukraine and Romania)

Designing Flood Protection at the Sub-basin Level

2009 saw the ICPDR publication of 17 sub-basin flood action plans, based on 45 national planning documents, and covering the entire Basin. They provide the first ever comprehensive overview of actions to reduce flood risk in the Danube Basin. In drawing up the plans, measures were first elaborated at the national level in 13 of the ICPDR states. Joint discussions between countries sharing particular sub-basins then took place to create a harmonized plan for the entire area of each sub-basin.

The finalised action plans review the current situation and set targets and respective measures for reducing adverse impacts and the likelihood of floods, increasing awareness and level of preparedness and improving flood forecasting. The targets and measures are based on the regulation of land use and spatial planning; increase of retention and detention capacities; technical flood defences; preventive actions (e.g. flood forecasting and flood warning systems); capacity building; awareness and preparedness raising and prevention and mitigation of water pollution due to floods.

European Floods Directive (2007/60/EC)

The EU Directive on the assessment and management of flood risks requires Member States to carry out a preliminary flood risk assessment of all water courses and associated coastal areas by 2011 to identify areas at risk of flooding. For such areas, flood risk maps should be drawn up by 2013 and flood risk management plans established by 2015, focused on prevention, protection and preparedness. Each country must take adequate and coordinated measures to reduce flood risk. Member States must coordinate their flood risk management practices in shared river basins and not undertake measures that would increase the flood risk in neighbouring countries. They should also take into consideration climate change and sustainable land use practises. The Directive also reinforces the rights of the public to access this information and to have a say in the planning process, and shall be carried out in coordination with the EU Water Framework Directive.

Sub-basins for Flood Action Plans

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Action at the Sub-basin Level

The sub-basin action plans detail comprehensive information on hundreds of concrete actions to reduce flooding throughout the region, including re-naturalisation of water bodies, creation of flood polders, upgrading of dykes and improvement of alarm and forecasting systems. As a follow up to the action plans, the development of flood hazard and flood risk maps is crucial. Decisions related to the implementation of the action plans are a task and responsibility of the individual countries, according to their national legislation and bilateral and multilateral agreements.

“The sub-basin action plans provide the first ever comprehensive overview of actions to reduce flood risk in the Danube Basin and once implemented will go a long way to addressing many of the challenges that lie ahead of us.”

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“The impact of major floods in Europe is likely to increase considerably in the future, since society is becoming more vulnerable to the disruption caused by floods, and because floods may become more serious and more frequent due to climatic changes.”

Collectively, execution of the planned measures will increase protection for the people living in the Basin, their property and livelihoods. The set of 17 plans represents a unique technical planning document that provides, for the first time, a broad overview of the measures all Danube countries will be taking to keep their citizens safe against the danger of floods. They are a major contribution to the finalising of flood risk management plans by 2015 as required by the EFD and signify the excellent basin-wide cooperation that exists in flood protection, prevention and mitigation.

Danube Floodrisk: Mapping Flood Hazard and Vulnerability throughout the Basin

Within the EU Transboundary Cooperation programme, the Danube Flood Risk Mapping Project, “Floodrisk”, has been approved. This € 6.5 million project to develop uniform flood risk maps that define flood hazards and vulnerability will form the basis for targeting measures and reducing flood damage in the Danube Basin. Begun as an initiative of the Romanian ICPDR Presidency in 2007, the project will meet requirements of the European Floods Directive to draw up flood risk maps for areas at risk by 2013. The Floodrisk project will be completed by the end of 2012 under the leadership of the Romanian Environment Ministry, with the involvement of all Danube countries. For further details, please contact the Environment Ministry of Romania at: mj.adler@mmediu.ro.

