
CLIMATE CHANGE

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adaptation process in the Danube River Basin and its sub basin

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Geneva, 11 May 2010

ICPDR/ www.icpdr.org

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Danube River Basin District: Overview

MAP 1



This ICPDR product is based on national information provided by the Contracting Parties to the ICPDR (AT, BA, BG, CZ, DE, HR, HU, MD, RO, RS, SI, SK, UA) and CH, except for the following: EuroGlobalMap v2.1 from EuroGeographics was used for national borders of AT, CZ, DE, HR, HU, MD, RO, SI, SK and UA; ESRI data was used for national borders of AL, ME, MK; Shuttle Radar Topography Mission (SRTM) from USGS Seamless Data Distribution System was used as topographic layer; data from the European Commission (Joint Research Center) was used for the outer border of the DRBD of AL, IT, ME and PL.

Vienna, December 2009

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The basis of cooperation



**Übereinkommen
über die Zusammenarbeit zum Schutz
und zur verträglichen Nutzung der Donau
(Donauschutzübereinkommen)**

**Convention
on Cooperation for the Protection
and Sustainable use of the Danube River
(Danube River Protection Convention)**

Convention on Cooperation for
the Protection and Sustainable
use of the Danube River Basin

Signed in Sofia in 1994

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INTERNATIONALE KOMMISSION
ZUM SCHUTZ DER DONAU

Contracting Parties

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■ Germany



■ Austria



■ Czech Republic



■ Slovakia



■ Hungary



■ Slovenia



■ Croatia



■ Bosnia & Herzegovina



■ Serbia



■ Montenegro



■ Romania



■ Bulgaria



■ Ukraine



■ Rep. of Moldova



■ European Union

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ICPDR – International Commission for the Protection of the Danube River



The ICPDR, established by the DRPC:

- ➔ has the mandate to ensure conservation, improvement and rational use of surface waters and ground water
- ➔ reduce inputs of nutrients and hazardous substances
- ➔ control floods and ice hazards
- ➔ reduce pollution loads to the Black Sea

Since 2000 the ICPDR is the coordinating body for implementing the EU Water Framework Directive in DRB

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Extreme Climate events in the Danube River Basin

Extremization

Drought



Hungary – serious drought events: During the last century on average in 3-4 years

Flash floods



The population of the Danube River Basin suffered from massive floods in 2002, 2005 and 2006.

Process towards Climate Change adaptation

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Climate Change – is recognised

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Events of the ICPDR recognizing Climate changes:

- December 2007 - Conference on Adaptation of Water Management to Effects of Climate Change in the Danube River Basin
- December 2009 – Endorsement of the DRBM Plan
- February 2010 – ICPDR Ministerial meeting
- (December 2010 – ITRBM Plan)

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Conference on Adaptation of Water Management to Effects of Climate Change in the Danube River Basin – Vienna 2007



Conference Conclusions - Scientific Background

- *Climate change signals* for the DRB are sufficient to act beyond existing scientific uncertainties;
- Follow the ongoing DRB related scientific projects and its outcomes;
- Existing DRB scientific activities (i.e. EU FP 6 & 7 projects, Ensembles, GLOWA Danube) are the basis for the further developments of measures;

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Conference on Adaptation of Water Management to Effects of Climate Change in the Danube River Basin – Vienna 2007

Conference Conclusions

Climate change

- is an issue of Danube basin wide significance
- will be addressed by a stepwise approach
- will be addressed respecting all SWMIs for the DRB
- will take into account the issues of flood protection, low water discharge and land use

Future infrastructure project have to be ‘*climate proof*’

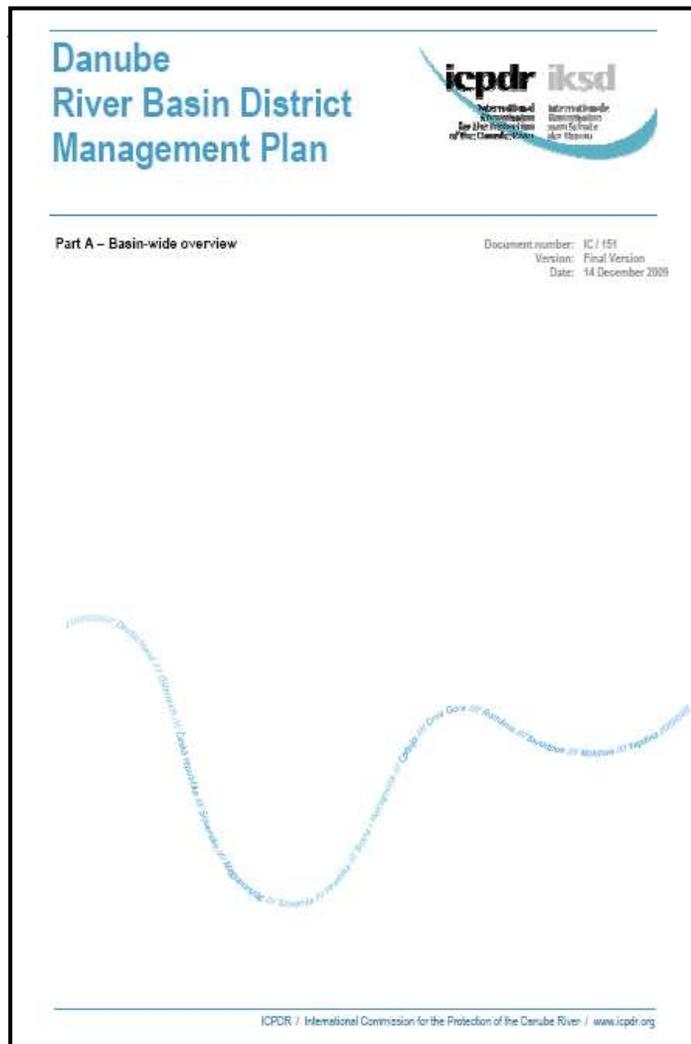
Holistic and coherent approach

- combination of all relevant sectors

Flexible management tools and no regret measures

The Danube River Basin Management Plan will include a chapter on climate change

Danube River Basin Management Plan - 2009



Finalised in December 2009

Reflects

- ⇒ Water status of the DRB waters
- ⇒ Significant Water Management Issues

Includes

- ⇒ Joint Programme of Measures
- ⇒ Evaluation on measures implementation
- ⇒ **Chapter on Climate change**

Enables

- ⇒ **Conclusions on investment and funding**

Ministerial Declaration Vienna 16 February 2010



Impacts of Climate Change and Climate Adaptation

(29) *emphasize* that the impacts of climate change will increase and develop into a significant threat in the Danube River Basin if the reduction of greenhouse gases is not complemented by adaptation measures. *We appreciate* that the DRBM Plan draws some first conclusions and identifies future tasks in this regard.

(30) *ask* the ICPDR to develop until 2012 a Climate Adaptation Strategy in the Danube River Basin. This strategy should be based on a step-by-step approach and encompass an overview of relevant research and data collection, a vulnerability assessment, ensure that measures and projects are climate proof respectively “no regret measures” and ensure that climate adaptation issues are fully integrated in the second DRBM Plan in 2015.

The Integrated Tisza River Basin Management Plan

Summary Document



Towards an Integrated Tisza River Basin Management Plan

Date: November 2008

Specific water quantity aspects

- Flood and excess water
- Water scarcity, drought
- **Extreme climate conditions – climate change ?**

Integration: WHAT and WHY

Integrated water resources management a process that:

" promotes the co-ordinated development and management of **water, land and related resources**, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems " (GWP TAC, 2000).

Measures to adapt to Climate Change



Climate Change and Variability:
Impact on Central and Eastern
Europe



Global Change and Hydrological
Cycle



Ensembles-Based Predictions of
Climate Changes and Their
Impacts (ENSEMBLES)

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Horizontal measures

Since there are common elements, which are relevant for measures related to extreme climate conditions (floods and water excess, droughts and water scarcity), and climate change, the following horizontal measures were identified relevant to the three water quantity issues:

- International Co-ordination
- Communication and consultation (including education and awareness raising)
- Incentives



Climate change specific measures (1)

In order to meet the goal of making the RBMPs “climate-proof/checked” by 2015 in the Danube as well as Tisza River Basin, the following steps proposed to be taken within this water management cycle:

- Ensure that monitoring systems used in the DRB and TRB have the ability to detect climate change impacts on ecological and chemical water status as well as the effects of climate change adaptation measures;
- Investigate on the effects of climate changes on ecoregions, typologies and reference sites as well as proposals for solutions;
- Implementation of pilot projects to define practical solutions at the local level for up-scaling to larger regions in the Danube and Tisza River Basin.
- Foster the improvement of models (climate and hydrological aspects) and of scenarios for the DRB and TRB as well as ensure the improvement regarding the presentation on climate fluctuations;



Climate change specific measures (2)

- Investigate on effects of climate change on the various sectors active in the DRB and TRB and the evaluation of indirect increases in impacts on water status;
- Conduct a climate vulnerability assessment of basin ecosystems;
- Promote and apply methodologies and standards for climate-proofing infrastructure projects and integrating climate considerations into EIA and SEA procedures,
- Enhance the sharing of research information on climate change in the DRB and TRB;
- Ensure that scientific information is ‘translated’ to water managers;
- Integrate all knowledge, results and lessons learnt related to climate change threats in the next RBM Plan;
- agreement on a sustainable Danube Basin Development Strategy that outlines climate resilient economic development options also highlighting the role of the ongoing activities in the TRB integrated measures outlined in the current plan
- Future management cycles will have to be based on the evaluation of activities and new knowledge gained during the coming five years.



Next steps

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Full implementation of the
Joint Programme of Measures

Development of a Climate Change
Adaption Strategy



The Plan should be reflected in
decisions at national and local
levels across all sectors

Magyarország

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Join in and celebrate
Danube solidarity on
Danube Day 2010:

Get active for the rivers!

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The logo for the International Commission for the Protection of the Danube River (icpdr) and the Internationale Kommission zum Schutz der Donau (iksd). It features the acronyms 'icpdr' and 'iksd' in a bold, sans-serif font. Below them, the full names are written in smaller text: 'International Commission for the Protection of the Danube River' and 'Internationale Kommission zum Schutz der Donau'. A blue curved line arches over the text from the left side.

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Thank you for your attention!