

WATER AND CLIMATE CHANGE

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SHUKALB
MINISTRY OF ENVIRONMENT AND PHYSICAL PLANNING OF ALBANIA



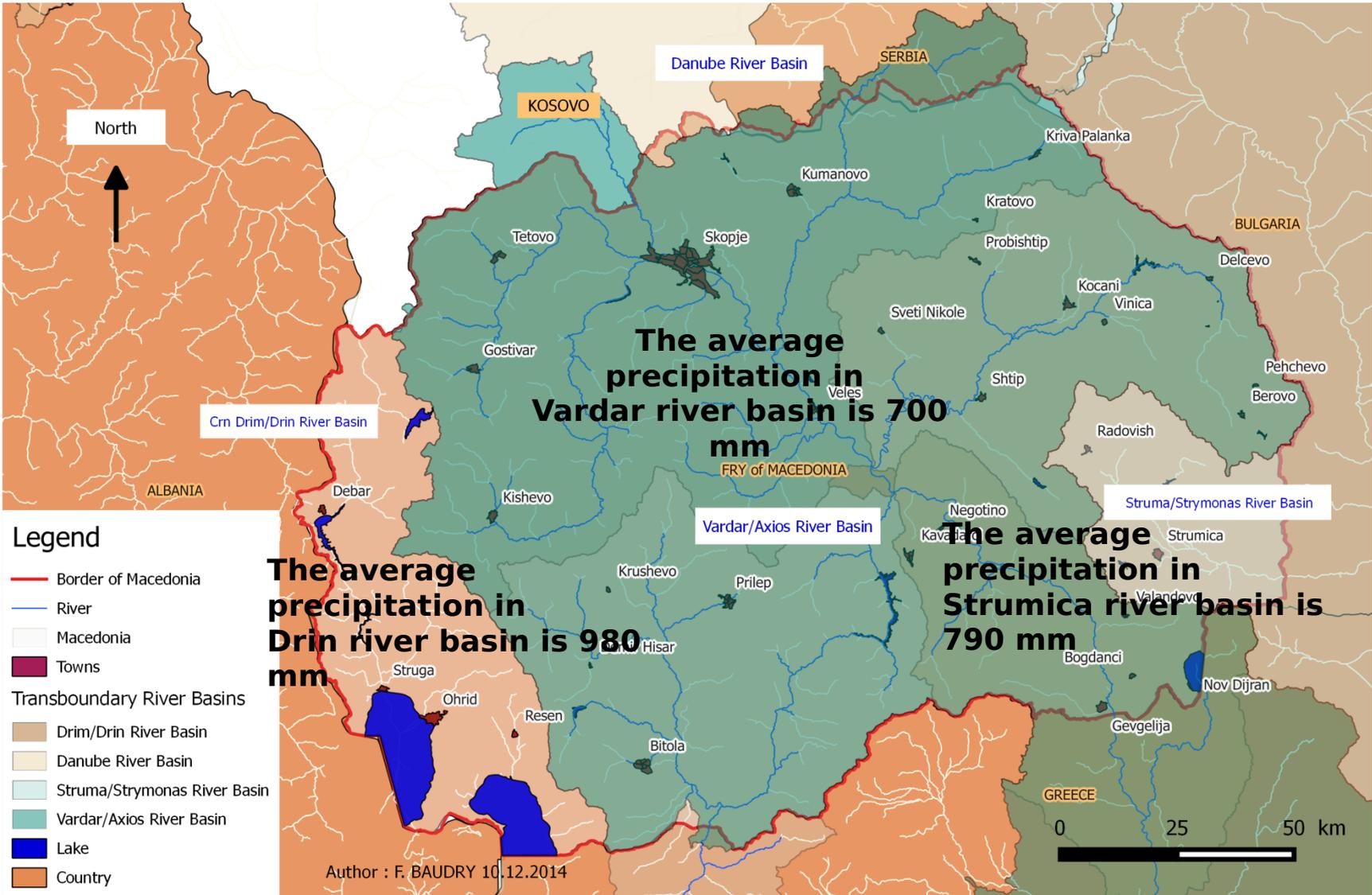
SHUKOS
MINISTRY OF ENVIRONMENT AND PHYSICAL PLANNING OF BULGARIA



Water resources and Climate Change Management in North Macedonia

Ylber Mirta
Ministry of Environment and Physical Planning
North Macedonia

Transboundary River Basins and riparian countries



Legal and institutional framework - Water

Water management issues in NMK is regulated by:

- Law on Waters (Official Gazette 87/2008)**
- Law on Drinking Water Supply and Urban Waste Water Drainage (2004)**
- Law on the Regulation of Prices for Water Services (2016)**
- Law on Water Economies (2015);**

The main strategic documents for Water management

- National Strategy for Waters (adopted in 2012)**
- Water Master Plan and**
- River Basin Management Plans**

Based on the Law on Waters:

- National Council for waters (established in 2009)**
- National Commission for Dams (established in 2012).**
- Councils for each river basins (on going)**

National Water Policy

The 2012 National Water Strategy is a long term planning document valid until 2042.

Integrated Water Resources Management is the main goal of Water management.

It specifies the objectives for water use by various sectors, protection of waters and protection from floods, including the aspects of climate change.

In recent years, River Basin Management Plans were developed:

- ▮ **Draft River Basin Management Plan for Vardar River.**
- ▮ **Bregalnica River Basin Management Plan (sub-basin of Vardar river);**
- ▮ **Strumica River Basin Management Plan**
- ▮ **Lake Prespa Management Plan (sub-basin of Drin river);**
- ▮ **Draft Management plan for the Lake Ohrid (sub-basin of Drin river);**

Legal and institutional framework - Climate Change 1

There is no separate Law on Climate Change issues in NM.

- Law on Environment (OG 53/2005),**
- Law on ratification of United Nations Framework Convention on Climate Change (UNFCCC) in 1997**
- Law on ratification of the Kyoto Protocol, (2004)**
- Law on ratification of the Paris Agreement, (2017)**

The Law on Environment prescribes:

- Institutional arrangements for climate change issues,**
- National Plan for climate change (6 years),**
- Action plan for prevention of the causes and mitigation of the negative effects of climate change (3 years),**
- National inventory of anthropogenic GHG emissions by sources and sinks.**

The preparation of the new Law on Climate Action started in Feb. 2019, EU proekt.

Legal and institutional framework - Climate Change 2

The Ministry of Environment and Physical Planning (MoEPP) is the designated National Focal Point to UNFCCC, National Designated Authority for Clean Development Mechanism (CDM) and the key governmental body responsible for policy making for climate change issues.

MoEPP is also identified as the main institution responsible for coordinating the inter-institutional cooperation for the preparation of the National plans on climate change and Action plans, preparation of the GHG inventory and reporting obligations to UNFCCC.

The National Climate Change Committee (NCCC) has been established in 2000 as an advisory body for policy-making related to climate change issues in the country. (32 members)

The NCCC reviews and approves all components of the national plans.

Consequently, the NCCC has participated in the development of The three national communications and two Biennial update reports submitted by the country so far.

National Climate Change Policy & Reporting to UN FCCC

The policy framework on climate change builds on the Strategy on Environment and Climate Change for the period 2014-2020 (adopted in January 2018).

- The three National Communications of the country to the United Nations Framework Convention on Climate Change (UNFCCC) have been developed (2003, 2008, 2014).**
- Intended Nationally Determined Contributions to climate change (2015)**

First (2015) and Second Biennial Update Climate Change Report (2017)

The project on preparation of the Fourth National Plan (Communication) on Climate Change (supported by the Global Environmental Facility) started in parallel with the Third biannual update report on climate change in 2019

They serve as Strategic documents for adaptation to climate change (adopted by the Gov.)

Within the National plans on climate, vulnerability and adaptation assessments have been prepared for sectors of agriculture, forestry, water, health, biodiversity, crisis management, tourism and cultural heritage protection.

Waters and Climate change do not respect boundaries (national, regional or local), that's why International cooperation on Waters and Climate change management is very difficult task.

The UNECE Water convention

Lack of capacity and resources, insufficient data, different institutional structures,

lack of political will - and mistrust in some cases - are serious obstacles.

International cooperation on Water resources management has been at the core of the work under The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention), which doesn't address directly climate changes, but it obliges Parties to prevent, control and reduce transboundary impacts.

The Convention requires that Parties should establish joint monitoring programmes, warning and alarm procedures, joint bodies to provide forums for discussing planned flood prevention measures and agreeing on possible joint measures ...

Finally, Parties should assist each other - for example, in case of floods.

Under the work of the Water convention, were adopted two very important documents:

- The Guidelines on Sustainable Flood Prevention and**
- The Guidance on Water and Adaptation to Climate Change.**

Water Management Challenges related to Climate Change

Too little water



Too much water



Figure 10-6 Visualizing Environmental Science, 1/e

To polluted water



Figure 10-17 Visualizing Environmental Science, 1/e

Climate change impacts on Water resources 1

Climate change have important implications on water resources in NM

- increases evaporation rates,**
- higher proportion of precipitation,**
- earlier and shorter runoff seasons,**
- increased water temperatures, and**
- decreased water quality**

The consequences of these effects are :

Increased evaporation rates are expected to reduce water supplies in summer.

Changes in snow pack and runoff are of concern to water managers including:

Hydropower generation, irrigation, urban water supply, flood protection and fishing.

Water shortages will cause the price of water to rise.

One final and important effect is the potential for interstate water allocation conflicts.

Climate change impacts on Water resources 2

According to the Third National Communication on Climate Change, a decreasing trend in precipitation can already be observed in the country.

Climate change projections for the main climate elements (air temperature and precipitation) are obtained for the periods 2025, 2050, 2075 and 2100 with reference year 1990.

Developed scenarios on climate change impact in water resources sector show the following:

(a) groundwater recharge for Vardar River Basin will continuously decrease,

(b) annual mean runoffs for Vardar River will reach the level of 82% in 2100 ,

(c) dry spells and flash floods will be more frequent and severe,

(d) eastern part shall experience more water deficiency than the western part.

Project activities related to Water and Climate Change Management

Projects financially supported by Swiss confederation and implemented by UNDP

- Strumica River Basin & Flood Risk Management Plan
- Crna river basin - PFRA for Pelagonija region
- Bregalnica river basin - PFRA
- Upper Vardar (Polog) - Flood Risk Management (SDC & SECO / UNDP)

GIZ project "Climate Change Adaptation and Flood Risk Management for The Western Balkans"

- PFRA Drin River Basin, generation of flood hazard maps and flood risk maps (FHRM)

Signing agreement with the Municipality of Ohrid for financing climate change adaptation measure on a local level, improve the Flood Early Warning Systems (FEWS)

In frame of The GEF Drini Project will be established the Expert Working Group on Floods.

The EWG will provide expert technical support to the DCG for the implementation of the MoU on issues related to floods especially in the lower parts of the Drin Basin

New floods projects:

Adaptation Fund project, "Integrated climate-resilient transboundary flood risk management in the Drin River basin in the Western Balkans", implemented by UNDP and GWP Med

IPA project: "Implementation of the EU Floods Directive through Harmonization of National Legislation and Preparation of Flood Risk Management Plans"

Thank you!