



# Climate Change and Water and Sanitation Sector in Montenegro priorities, ongoing processes, challenges

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**Strategic Roundtable on Increasing Resilience to Climate Change in  
the Water and Sanitation Sector**

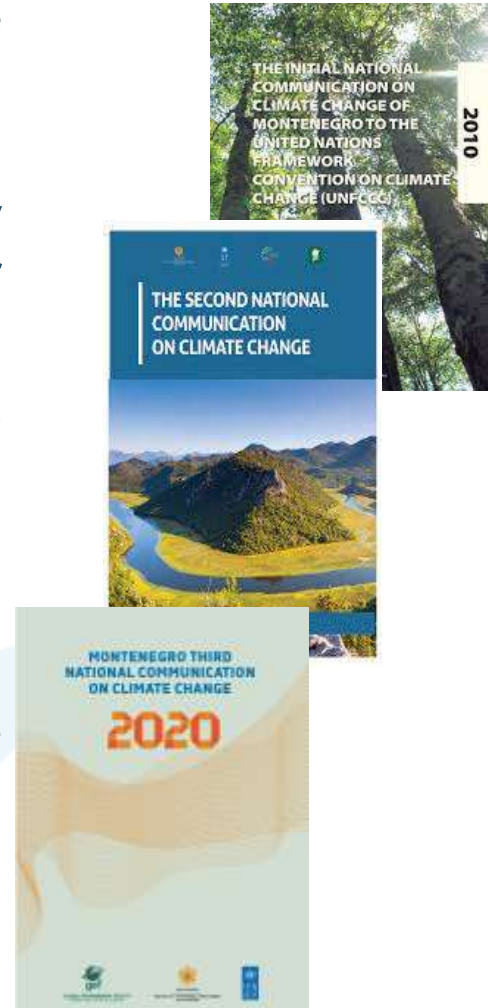
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# This presentation

- Climate and precipitation change in Montenegro;
- Climate change impacts on water resources;
- Climate-driven vulnerabilities related to water
- Protocol on Water and Health – activities and goals;
- Lessons learnt and perspectives

# Climate and precipitation change

- Montenegro is a country that is particularly vulnerable to the impacts of climate change due to its geographical location, its topography, and its socio-economic characteristics.
- Climate change impacts have already manifested themselves in the country and are expected to result in more impacts for key sectors, such as water availability and agricultural production.
- Besides the elderly over 65 and children, the vulnerable groups from climate change extremes are considered the people using long-term social or health care institutions, the homeless, socially and economically disadvantaged groups, and communal, agricultural and fishery workers.
- The water sector shows a reduction in the water balance in all river basins in Montenegro. The decrease in rainfall and snowfall will drastically affect surface water availability. By the end of the 21st century, a reduction in average annual flow of 27% is expected.
- Weather-related events are becoming more frequent and intense.



# Climate change impacts on water resources



Observed climate change and extreme events	Observed impacts on water resources (first, second and third national report)
Warmer and less cold days and nights, more often very warm days and nights.	Implications for water resources related to snowmelt.
Heavy rainfall/floods	Disruption of flows in karst outcrops.
	More frequent and intense formation of torrential flow.
	More frequent floods.
	Decreasing the quality of surface and underground water.
	Disturbance of the border zone between salt and fresh water in coastal areas karst areas (karst outcrops).
Drought	Karst fields where periodically in the spring after prolonged rainfall and the melting of snow leads to the saturation of groundwater and floods - e.g. such floods have repeatedly hit Cetinje field
	Reduction in river water levels and flow rates.
	Decreased water supply, quality, and quantity (example of Regional waterworks for Montenegrin coast)
	Insufficient water for irrigation.
Heat waves	Reduced efficiency and operability of existing and planned human-made hydrological systems.
	Increased water consumption in the industry.
	Increased water demand/consumption

# Climate-driven vulnerabilities related to water



- Water delivered to the final consumers is constantly decreasing.
- Of the total amount of water captured in 2020, it was delivered to the public water supply system 13% less than in 2005.
- In the observed period (2005–2020), losses in the water distribution system increased from 47% (2005) to 61% (2020).
- Non-revenue water on national level in 2020 was 67.14% which states that the management of the water resources is not on appropriate level and the water losses in the water distribution system are huge.
- Due to the female overrepresentation in unpaid family labour, women are the primary users and managers of water for the cooking, cleaning, care for children and elderly, sanitation, and health.
- All policy documents and publications are missing data on vulnerable groups including gender status.



# Protocol on Water and Health

- Montenegro became the 27th Party to the Protocol on Water and Health in 2020
- The joint Commission was formed in 2020 in order to undertake joint measures and activities important for the implementation of the Protocol
- After ratification of the Protocol in the Parliament of Montenegro situational analysis was performed in order to meet the deadlines and define the goals.
- Basis for prioritization:
  - identifying gaps and problems relevant to Montenegro (derived from baseline analysis and GLAAS process 2018);
  - thematic areas according to Article 6 of the Protocol, and priorities in the Protocol Work Program for 2020-2022;
  - existing requirements of relevant national legislation, strategies, programs

# Protocol on Water and Health goals

- Baseline study on the WASH in health care facilities;
- Baseline study on the WASH in schools;
- Study on equal access to water for everyone;
- Follow up studies on WASH in schools and HCF-s (UNICEF);
- Conduct basic analysis of drinking water quality and sanitary conditions in small-scale systems in rural areas;
- Improve existing or develop new legislation in order to implement water safety plans (WSP) in all water supply systems.

# Lessons learnt and perspectives

- Prioritizing resilience to climate change in WASH sector;
- Upgrading of flood risk mapping and interventions that prioritize Natural Water Retention measures, in line with EU Policy, and which prioritize vulnerable groups/areas;
- Promotion of wastewater treatment and re-use; water losses management, discovering and repairing damages in water supply systems; flood hazard mapping and flood warnings;
- Monitoring and addressing climate-driven vulnerabilities and gender and socially disaggregated impacts. Remoted and socially deprived population groups are at higher risk of climate extremes (people dependent on their personal agricultural products, Roma population included).
- One of the biggest challenges is the need to find adequate solutions for supplying water to geographically inaccessible areas in order to provide everyone with equal access to safe water and sanitation.



# Lessons learnt and perspectives



- The assessment of climate adaptation in the relevant sectoral and climate protection legislation has concluded that there is no legally established framework for climate adaptation planning in the country, despite the existence of various Laws and planning processes that somehow relate to climate change adaptation;
- The coordination and the adaptation planning are done on an ad-hoc or project-driven basis, with no clearly defined stakeholders, roles and responsibilities;
- Ongoing project “Enhancing Montenegro’s capacity to integrate climate change risks into planning” implemented by the UNDP Office in Montenegro with the support of the Green Climate Fund and in cooperation with the Government of Montenegro is aimed at developing National Adaptation Plan;
- Considering the identified vulnerabilities and the projected socio-economic impacts of climate change on the water resources of Montenegro, it is clear that Montenegro should develop comprehensive, cross-compliant and gender-sensitive climate mitigation and adaptation policies for the agriculture, water and health sectors.
- Montenegro is a beneficiary country for the UNDA-funded project: "Equitable access to water and sanitation services for all and in all settings and strengthened climate-resilience in the water and sanitation sector". In this project’s scope, Montenegro will receive support to set climate-sensitive targets under the Protocol and to set and improve cooperation in terms of having a legally binding framework, stakeholders, roles and coordination clearly defined.

# Thank you!

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