



# Climate adaptation and integrated water management in Hungary

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

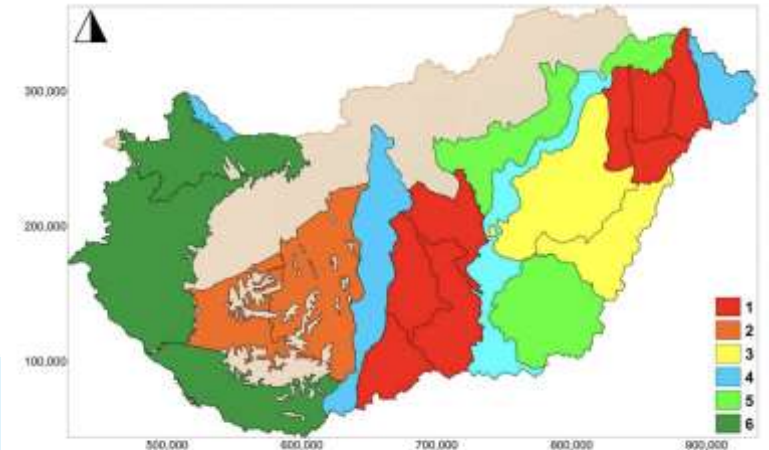
13 – 14 November 2023 | Geneva

# Water in Hungary



- Long-standing myth of abundant (inexhaustible) water resources
- Per capita surface water resource
  - 11,000 m<sup>3</sup>/year (2.5 times EU average)
  - But internal resource is only 600 m<sup>3</sup>/year/per capita
- 96% of surface water comes from upstream countries
  - More leaves than comes
- 20% of the land is at risk from flooding
- Sporadic incidents of water scarcity
- Risk of drought, water inundation, flash floods
- Both water availability and water use are very diverse geographically
- Climate change is expected to increase extremes (longer draught periods, more severe rain events)

Decreasing groundwater table in relation to climate change (severity 1 → 6)



133. ábra. A talajvízkészletek klímaváltozás miatti veszélyeztetettség a hazánk kistérségein

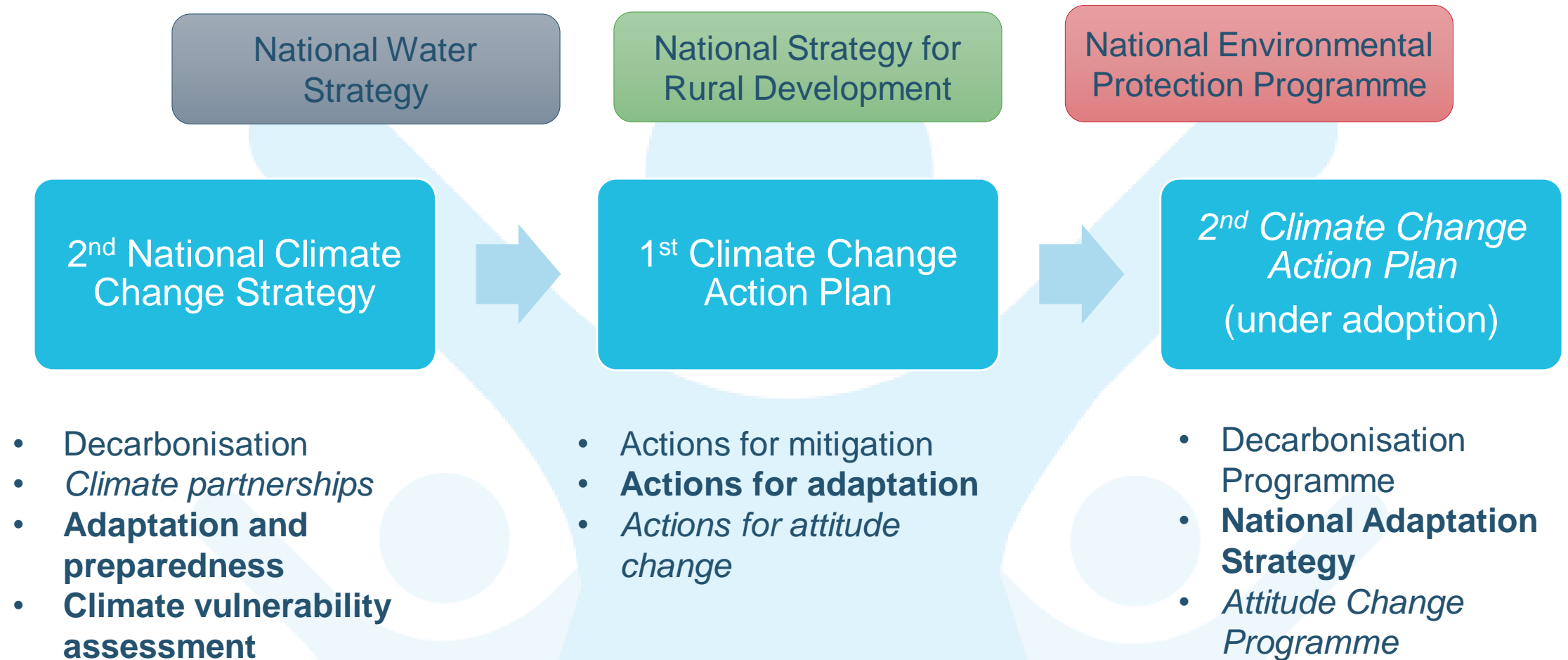
RBMP3, 2022

Per capita drinking water use by county



KSH, 2022

# Strategies and plans



# Water actions within the 1<sup>st</sup> CCAP

- Water management actions
  - Flash flood prevention through water management in hill regions
  - Water saving practices in drinking water supply and agriculture (infrastructure reconstruction, rainwater harvesting)
  - Climate resilient, adaptive urban water management practices, urban storm water management
  - Groundwater recharge
  - Modelling and remote sensing to support early warning systems and risk mapping for extreme events (drought, flooding, water inundation)
- Disaster management actions
  - Integration of climate resilience in water safety plans
- Human health actions
  - Surveillance and control planning for disease vectors
  - Climate resilient healthcare facilities



# Plans under 2<sup>nd</sup> CCAP

- Continuation of actions from the 1<sup>st</sup> CCAP
- Municipal actions
  - Action plan to prevent and reduce urban flash flood
  - Integrated urban water management pilots
- Water management actions
  - Development of water retention and storage in the plains
  - Development of adaptive and flexible surface and groundwater management measures
  - Development of nature-based water retention solutions
- Human health
  - Assessment of climate change related risks in recreational waters

# Water related health hazards in public health focus



- Cyanobacterial blooms
- Other recreational water hazards (e.g. Vibrio)
- Vectorborne diseases (e.g. West Nile) in relation to water coverage
- Extreme events' impact on drinking water supply
- Recreational use of non-intended water (e.g. decorative fountains, urban lakes and streams)
- Communication and awareness raising

**HASZNOS TANÁCSOK NYÍLT VÍZI FÜRDŐZÉSHEZ**

Magyarországon 250 kijelölt természetes fürdőhely üzemel, ennek több mint fele a Balatonon.

A strandok több mint 95 %-a jó vagy kiváló minőségű.

A kijelölt fürdőhelyek vízminőségét legalább havonta egyszer ellenőrzik.

**Árhaaz viszont, hogy a fürdőzésünk gondtalan lehessen:** Szabadvízeken csak a kijelölt strandokon fürdőzzünk! Az illegális fürdőhelyek baleset- vagy fertőzésveszélyesek lehetnek!



FÜRDŐVÍZMINŐSÉGI TÉRKÉP



Frissítés dátuma: 2023. 10. 24.

# Conclusion

- Climate change impacts water availability and water related disasters
- Main management action of adaptation
  - Integrated water management both on municipal and national level
  - Water retention and local reuse
  - Monitoring, modelling, early warning
  - Public health considerations for safe use of alternative water sources
  - Awareness to emerging water-related diseases
- Information and guidance to decision-makers, designers, operators of water systems and the general public is crucial in adaptation and mitigation

# Thank you!

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