



MINISTRY OF
AGRICULTURE



General Directorate of Water Management



Water in Hungary's National Landscape Strategy and Landscape in the Hungarian Water Strategy



Mrs Krisztina Kincses
National Representative of
the European Landscape Convention, Hungary



Mrs Ágnes Tahy
Deputy Head of Department,
Directorate General of Water Management, Hungary

COUNCIL OF EUROPE EUROPEAN LANDSCAPE CONVENTION
22nd MEETING OF THE WORKSHOPS FOR THE IMPLEMENTATION
OF THE COUNCIL OF EUROPE LANDSCAPE CONVENTION

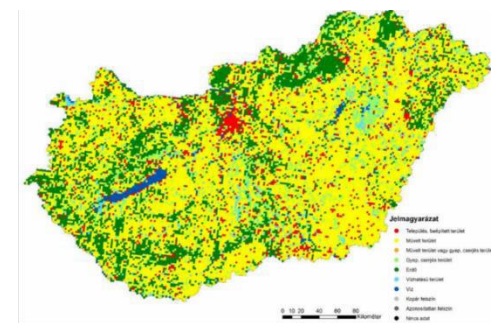
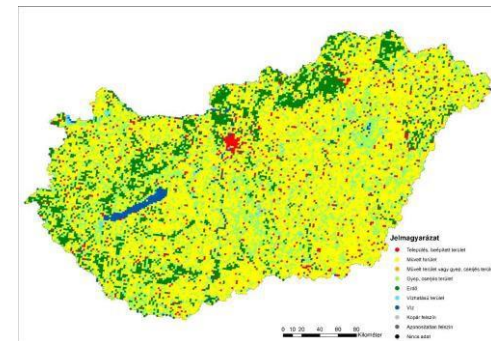
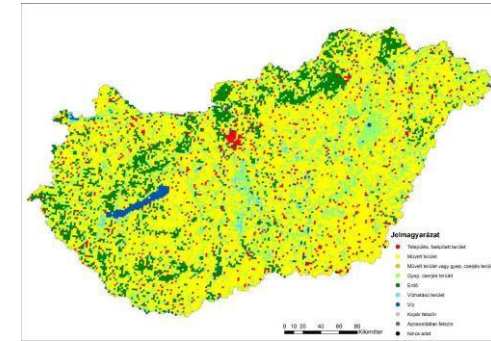
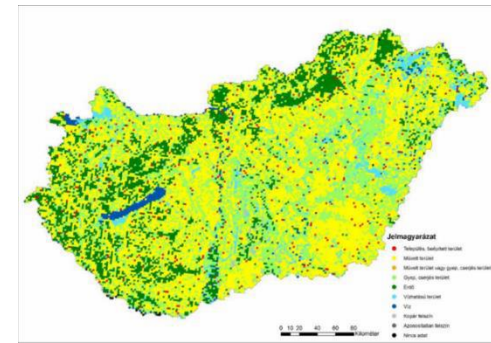
“Water, landscape and citizenship in the face of global change”



Seville, Spain
14-15 March 2019

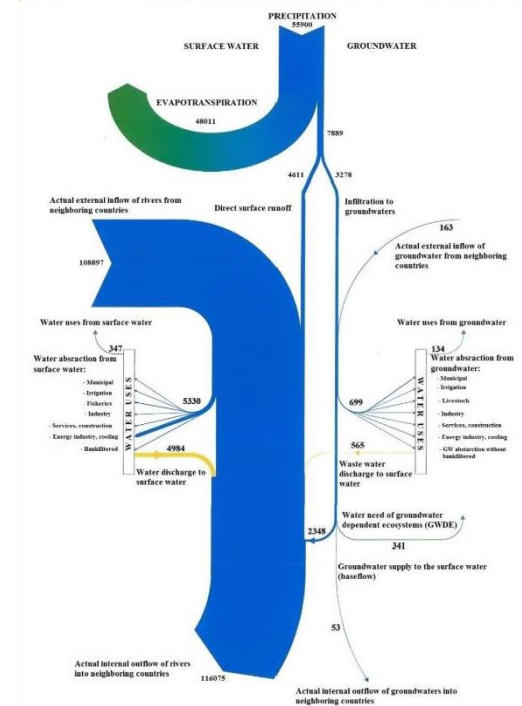
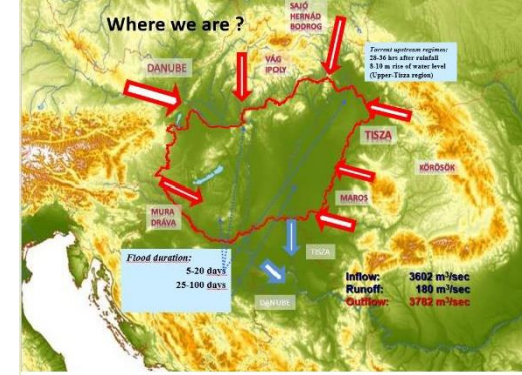
Background information

- The Hungarian Government approved the ***National Landscape Strategy for the period 2017-2026*** in 2017.
- The ***National Water Strategy*** (NWS) was approved in the same year, based on the 2nd River Basin Management Plan (RBMP) published in 2016.
- The **entire administrative area of settlements, including the water bodies** are considered to be part of the landscape in accordance with the European Landscape Convention.



Background information

- It is important to emphasise that **the landscape is an operating system**, and that therefore **the entire water regime**, including groundwater bodies, **should be taken into account in planning and policy making**.
- There is a close interaction between landscape and water. **Hungary delineated the terrestrial and aquatic water-dependent ecosystems** according to the Water Framework Directive. The next step could be **mapping water-dependent landscapes**.



The overall objective of the NLS

The overall objective of the National Landscape Strategy is:
Responsible land use based on landscape configuration and assets.

Proper landscape management, based on landscape configuration and assets, contributes substantially to the reduction of the risk of flood and excess water, as well as drying, which helps important environmental, economic and social interests to prevail.



The horizontal principles of the NLS

To achieve the overall objective, adherence to the **following horizontal principles** must be ensured in the implementation of the National Landscape Strategy:

- general protection of natural resources and cultural heritage;
- wise and rational use of areas;
- the mitigation of the impacts of climate change and adaptation to it.



The headline targets of the NLS

To achieve the overall objectives, **three headline targets are set** by the strategy.

- establishment of the foundations for land use, based on landscape configuration and assets;
- liveable landscape – liveable settlement – wise land use;
- enhancing landscape identity.

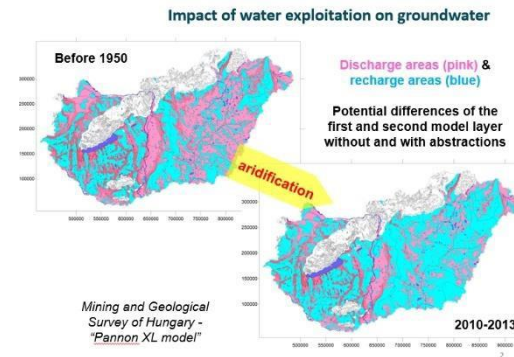
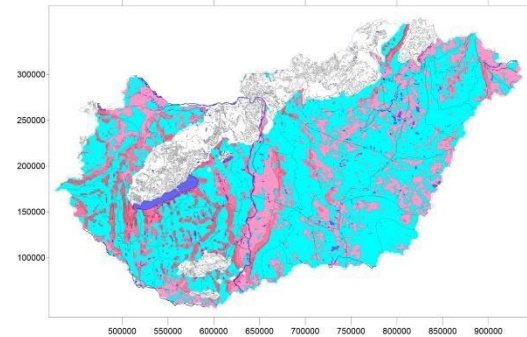
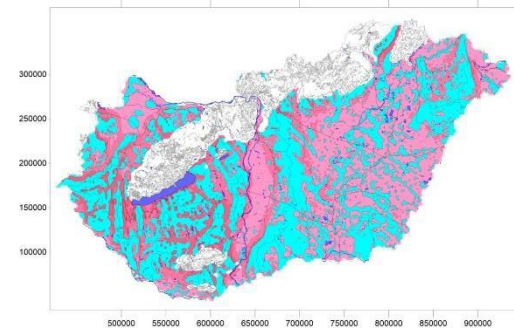


Aridification

In Hungary, the spatial and temporal distribution of precipitation is uneven and contribution to the runoff within the country borders is low, resulting in unequal geographic and temporal distribution of surface water resources.

This is why groundwater is also an important source for water utilisation in Hungary, for example, to meet communal or bathing water needs and partly for irrigation. Nowadays there are many signs that aridification is a significant water management issue in Hungary:

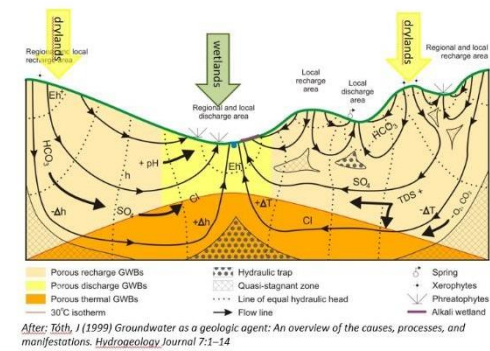
- nature conservation authorities report that drying out is one of the main problems of the protected areas;
- according to hydrological reports, some springs have dried out; the base flow of several streams has decreased; groundwater level has dropped; areas of shallow lakes and wetlands have shrunk;
- the increasing severity of droughts is propagating losses in agriculture which have multiplied farmers' needs for irrigation.



Impacts on water resources

Integrated studies on climate and land use have shown that both water abstraction and climate change have had an impact on water resources.

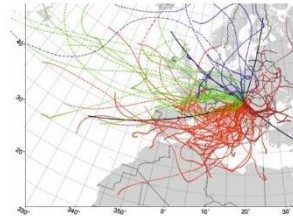
NWS, as its first strategic task, defines water retention, more efficient water use and integrated management of water resources, to support sustainable development.



After: Tóth, J. (1999) Groundwater as a geologic agent: An overview of the causes, processes, and manifestations. *Hydrogeology Journal* 7:1–14

Sources of precipitation in Hungary

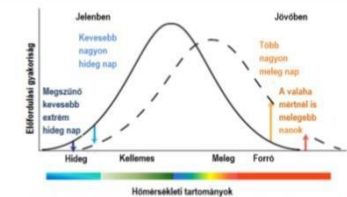
- Mediterranean region (57.0%)
- local moisture (14.8%) = ETP
- Atlantic region (14.2%)
- Northern Europe (7.4%)
- Eastern Europe (6.6%)
- Rate of local moisture increase from SW to NE



Farmers actions to demand water for irrigation also started in the NE county and still the most loud voices.

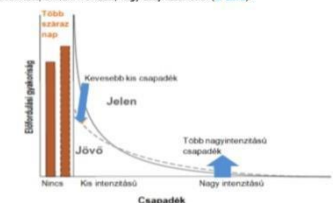
Source: E. Bottván, Gy. Czuppon, T. Weidinger, L. Haszpra & K. Kármán (2017) Moisture source diagnostics and isotope characteristics for precipitation in east Hungary: implications for their relationship, *Hydrological Sciences Journal*, 62:12, 2049-2060

Vízgőjtő-gazdálkodási Terv - 2015 A Duna-vízgyűjtő magyarországi része



8. ábra: A hőmérsékleti viszonyok becsült változása a klíma módosítása következtében

A városi növényzet (mind a közterület, mind pedig a magánterület, benne haszonnövények is) meleg időszaki világnyája jelentősen emelkedik, miközben a talajban tovább csökken a talajvíz szintje, a hozzáférhető víz. A városi növényzet életben tartása csak öntözéssel lesz lehetséges, sőt sok településen már ma is így van. Ha elengedjük a területről a csapadékvizet, öntözni ivóvízzel, vagy talajvízzel lehet (8. ábra).



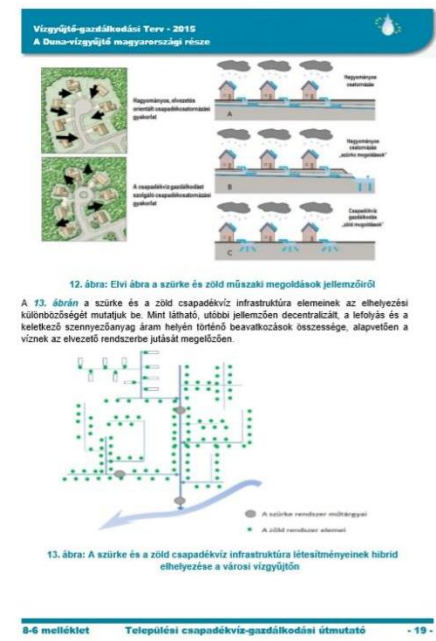
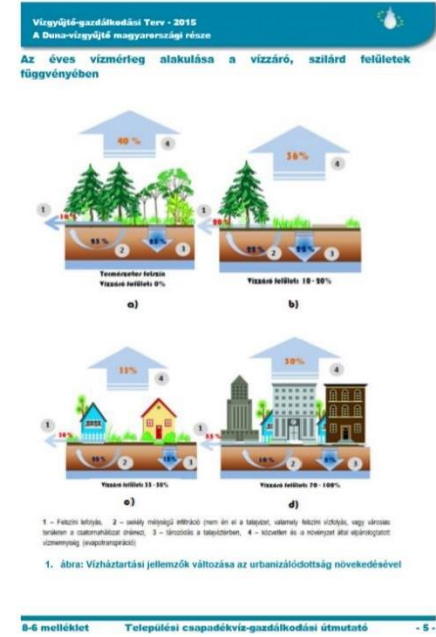
9. ábra: A Klimaváltozás hatása a jövő csapadékvizére

Commitments on rainwater management

The “city climate” is primarily the consequence of the lack of water balance, due to the high ratio of paved surfaces, the changed emission conditions due to the higher heat conductivity and heat capacity of paved surfaces, compared to natural surfaces and the change of air flow, due to new buildings.

The emissions (heat, vapour, pollutants, etc.) from intensive human activities (transport, heating, industry) contribute to this.

The negative effects of city climate (temperature increase, lack of ventilation, difficulties in sizing drainage facilities), are most perceptible in densely-built cities and mainly in paved city centres and along main roads, with only a few green surfaces.



Commitments on rainwater management

Keeping and using rainwater, both in settlements and on arable land, must be improved through increased rainwater filtration and enhancement of soil water and groundwater replenishment.

Retention of rainwater is also important for the improvement of the urban climate, through the establishment of rain gardens or urban lake systems.

Using the natural water retention capability of the landscape, by leaving excess water inundations on the land, could be a cost effective climate change mitigation and adaptation measures in Hungary.

By setting up rain water management systems that facilitate infiltration and the establishment of green infrastructure, the first 20 mm of rainfall must be retained locally, and used for replenishing overexploited water resources and soil moisture.



Actions

The National Landscape Strategy sets out 97 actions, of which the following are worth mentioning here:

- Setting quality objectives related to areas with high probability of flooding (flood, excess water).
- Integration of quality objectives relating to brownfields, rust belt areas, abandoned buildings, green surfaces and areas exposed to the risk of flood/excess water in the regional and local development plans and land use plans.

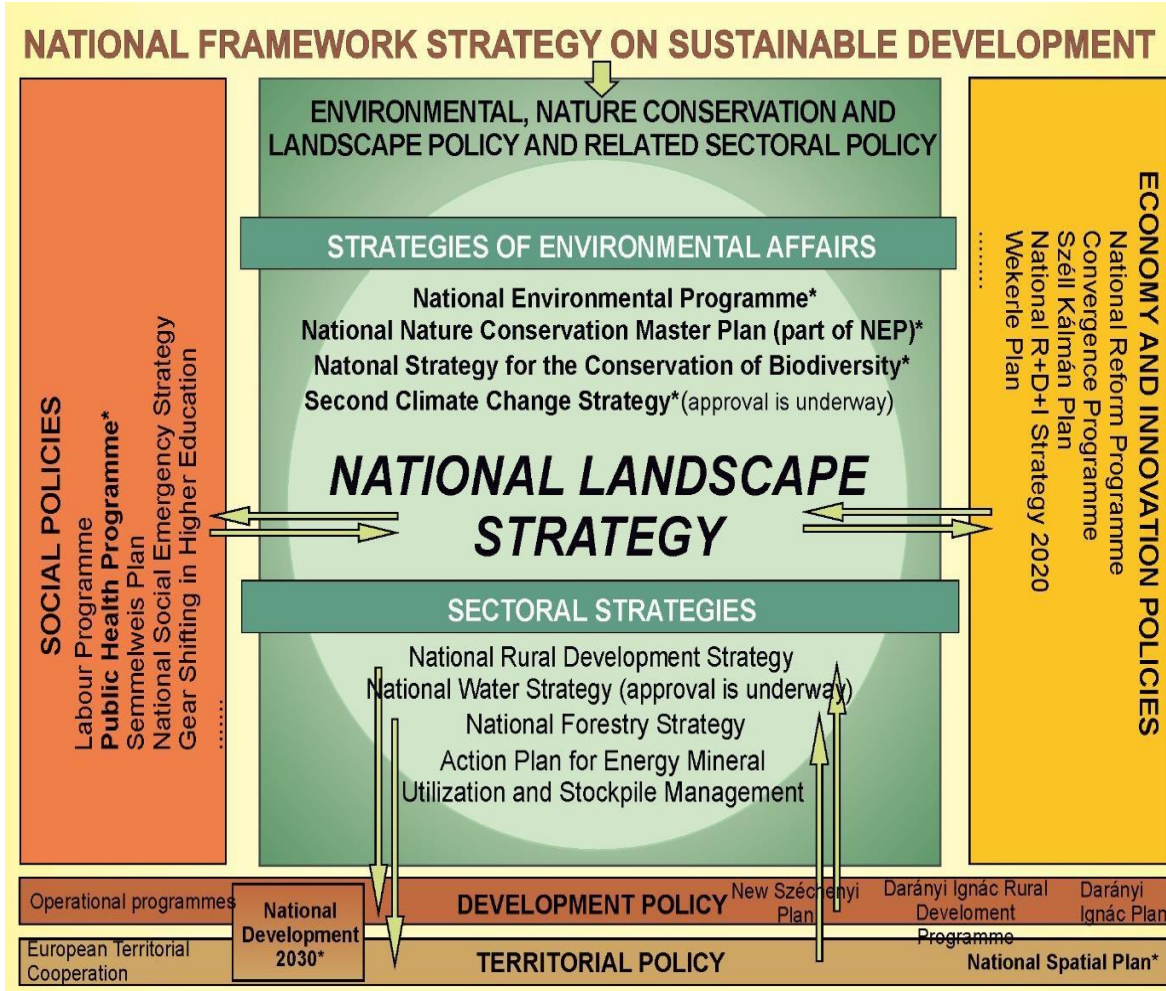


The National Landscape Strategy, NWS and River Basin Management Plans will only play their role if the currently absent horizontal aspects and key actions are integrated into other policies, on the basis of a holistic approach, in their next review.



Kincses, K. – Tahy, Á.: Water in Hungary's National Landscape Strategy and Landscape in the Hungarian Water Strategy
Seville, Spain, 14-15 March 2019

The Hungarian planning scheme





Thank you for your attention!