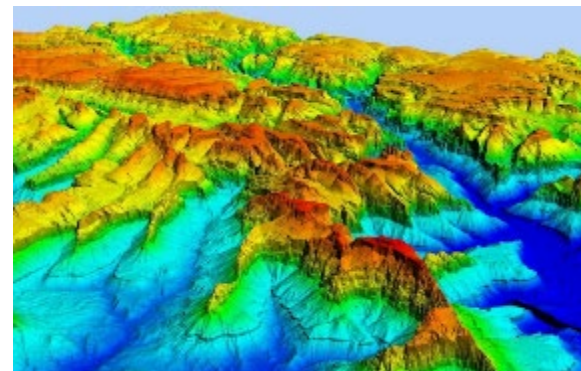




# Water management in Hungary



OUR WATER VISION

**Jenő Lábdy**

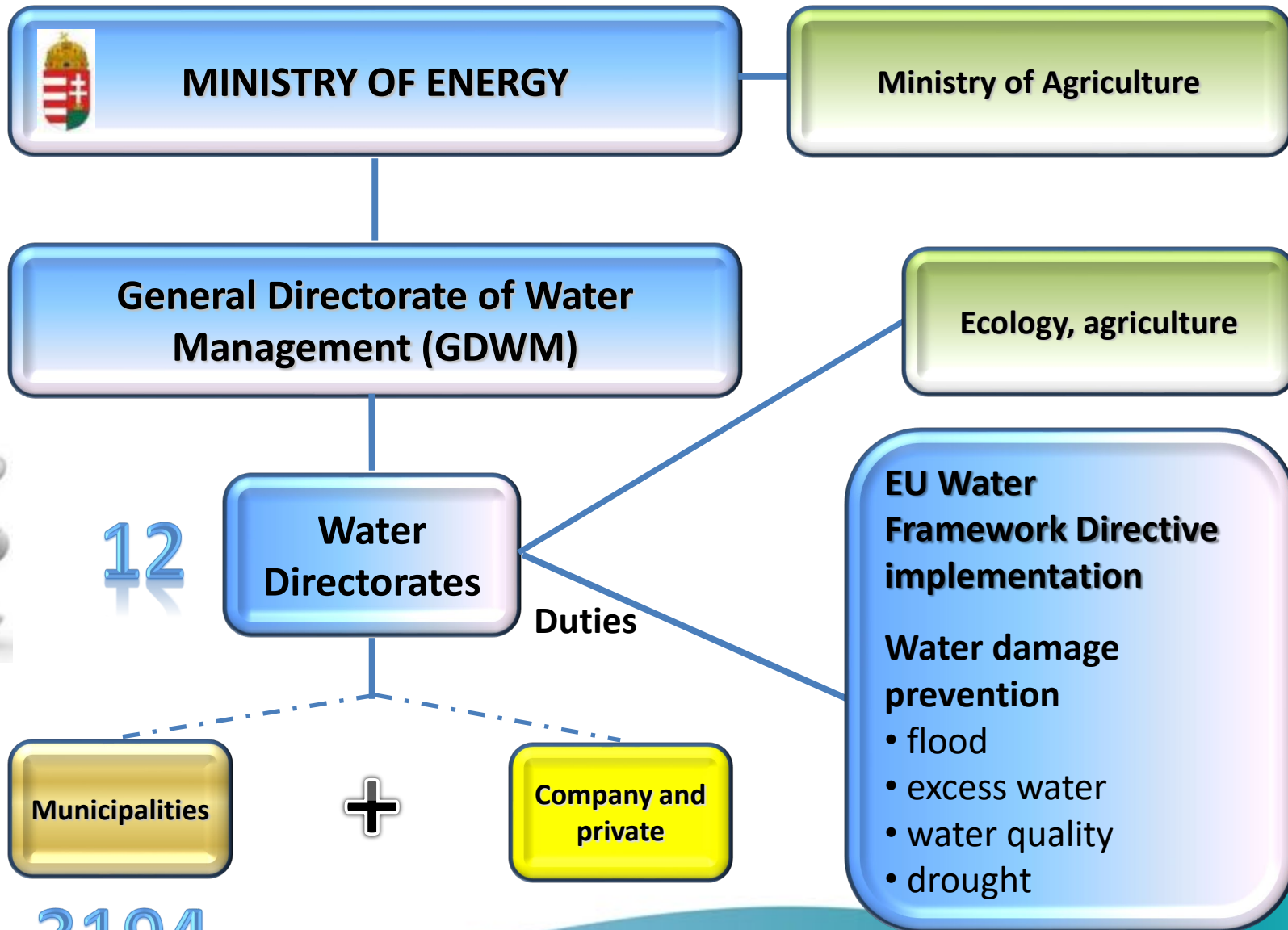
Head of Department – International  
Department  
General Directorate of Water  
Management

22nd edition of the EURO-INBO International  
Conference

Parma, Italy



# Structure of Water management



OUR WATER VISION

12

Municipalities



Company and private

3194

# The 12 regional directorates



OUR WATER VISION

- 👁️ Rising flood level
- 👁️ Growing vegetation
- 👁️ Building activities in flooded areas
- 👁️ Sedimentation

# Challenges



# Flood

On one hand:  
On the other hand:

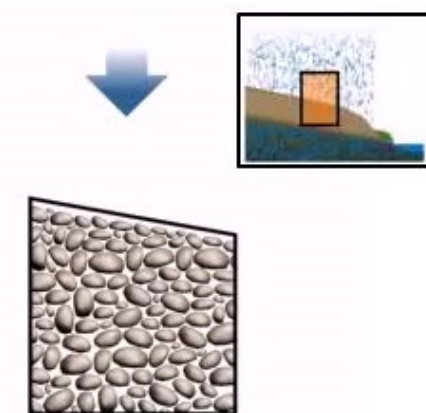
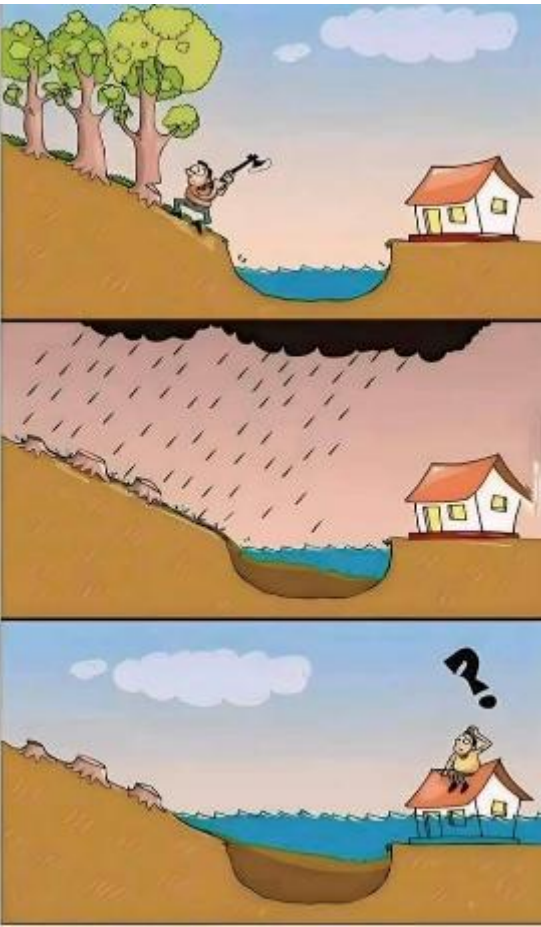
flood protection  
new water resources

## Answers

### Excess water of floods

#### Groundwater recharge

Natural resources can form part of protection activities by preserving or restoring natural areas



# Flood

## Dikes

protected level - full cost  
defensible level - reduced cost



Concept of „differentiated level” for the future in Hungary:

The optimum **defensible level** implies:

- the safety height and the effects of reservoirs and flood mitigation measures
- the optimum level of required levee development (costs – residual risk)

Determination of minimum height of levees: **Design level-60 cm**

**Differentiated level based on risk and the conditions of flood mitigation measures**



## Answers

### Cost-effective Flood protection

hydrological approach



Consideration of expected loss and damages (protected side)



Differentiated design levels

*Transboundary cooperation with  
Bilateral water conventions our  
neighbour countries*

## Cross-border coordination, cooperation



- *Bilateral conventions with other countries (at the request of the Ministry of Foreign Affairs or, through direct inquiries and on its own initiative).*
- *ICPDR (International Commission for the Protection of the Danube River)*
- *WG F - Working Group Flood - Flood Protection Working Group*

The sufficient, reliable data exchange with the neighbouring countries are still missing. There is no international organization which deals with this issue. Traditionally the data exchange is source of conflict, nobody like to manage it.

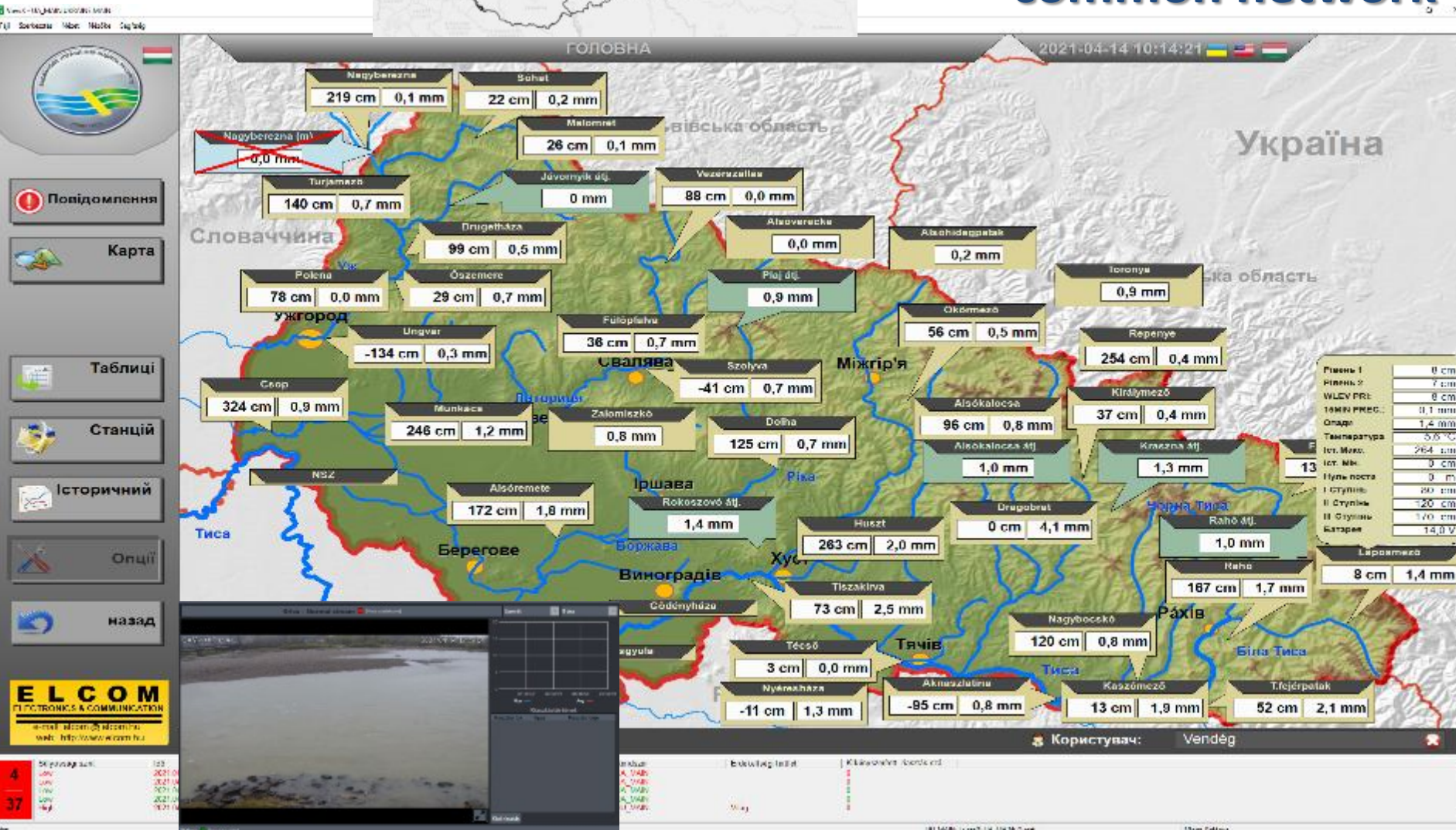


# Flood



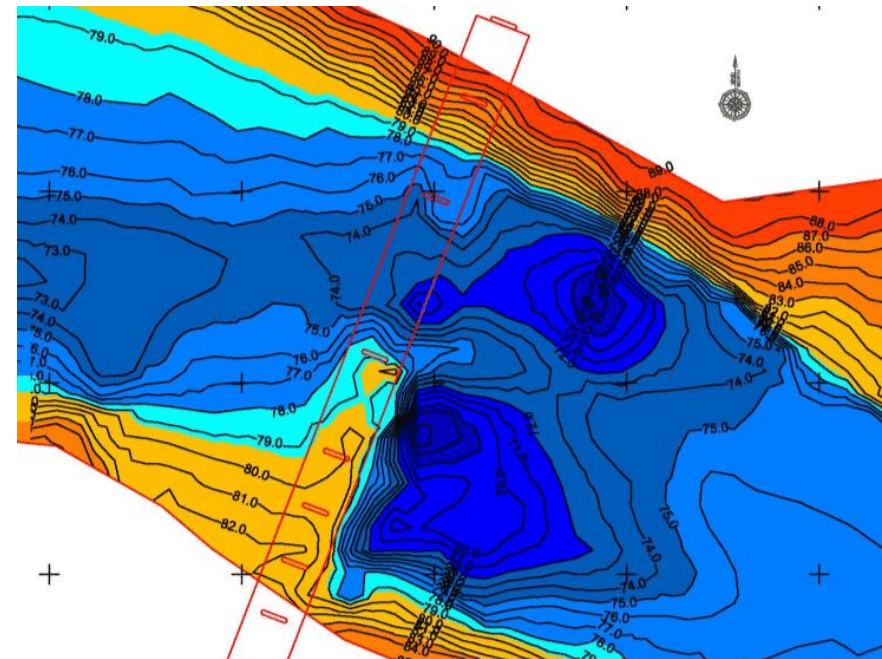
# Answers

## Hungarian - Ukrainian common network



## Improving and development of flood forecasting and monitoring network

1. In recent years, the capacity/speed of computers used to run hydrological prediction/modelling systems has improved significantly ↔ but the scarcity of expert increasing.
2. The availability/availability of river bed morphological data for 1D/2D hydraulic models has improved significantly in recent years
3. Within the framework of numerous international cooperation, the modelling of cross-border river basins has become more efficient: e.g.: Rába modelling/forecasting system, European Flood Warning System (EFAS)
4. In recent years, the technology of information flow towards users has undergone significant development: smartphones, mobile applications, unlimited mobile internet.



## Tisza Valley flood protection analysis centre

**Aim: Optimal operation of flood control reservoirs in the Tisza valley.**

**Tasks:**

Hydrodynamic, hydrological and economic modelling of floods in the Tisza Valley.

Continuously modelling the flood waves flowing down the Tisza and its tributaries.

Results, analysis, evaluation and sending to the Directorates and the National Technical Control.

Update the information required to run the model.

Keeping contact with the water management directorates of the Tisza Valley.





## Education, exercises for preparation for flood protection

- A new Flood Protection Training Centre was built near to Szolnok city. More than 250 people took part in the defence exercise.
- There are currently 7 types of training programs available, under which methods of protection against flood phenomena and methods of protection against floods exceeding. The programs include all typical activities during a flood situation.
- Every year the directorates have own and central theoretical trainings on flood management, as well.



# Data Management

## Main issues nowadays of water management

More and more data ...

- 💧 Spatial data
- 💧 Monitoring data
- 💧 IOT data



## No data trading!!!



Free and unlimited data access

- 💧 Without registration
- 💧 From website
- 💧 Web services (for professionals)





**THANK YOU!**

OUR WATER