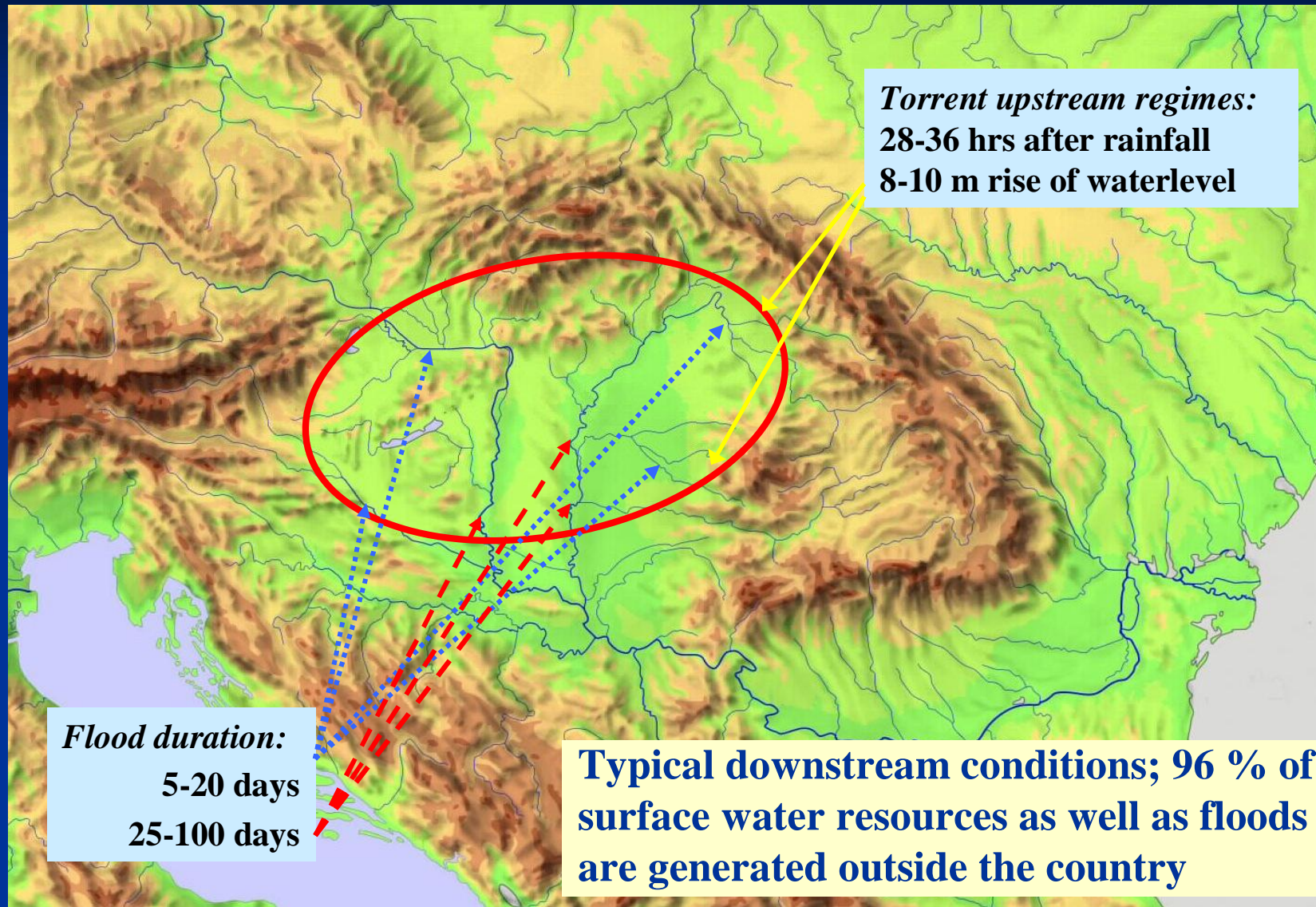


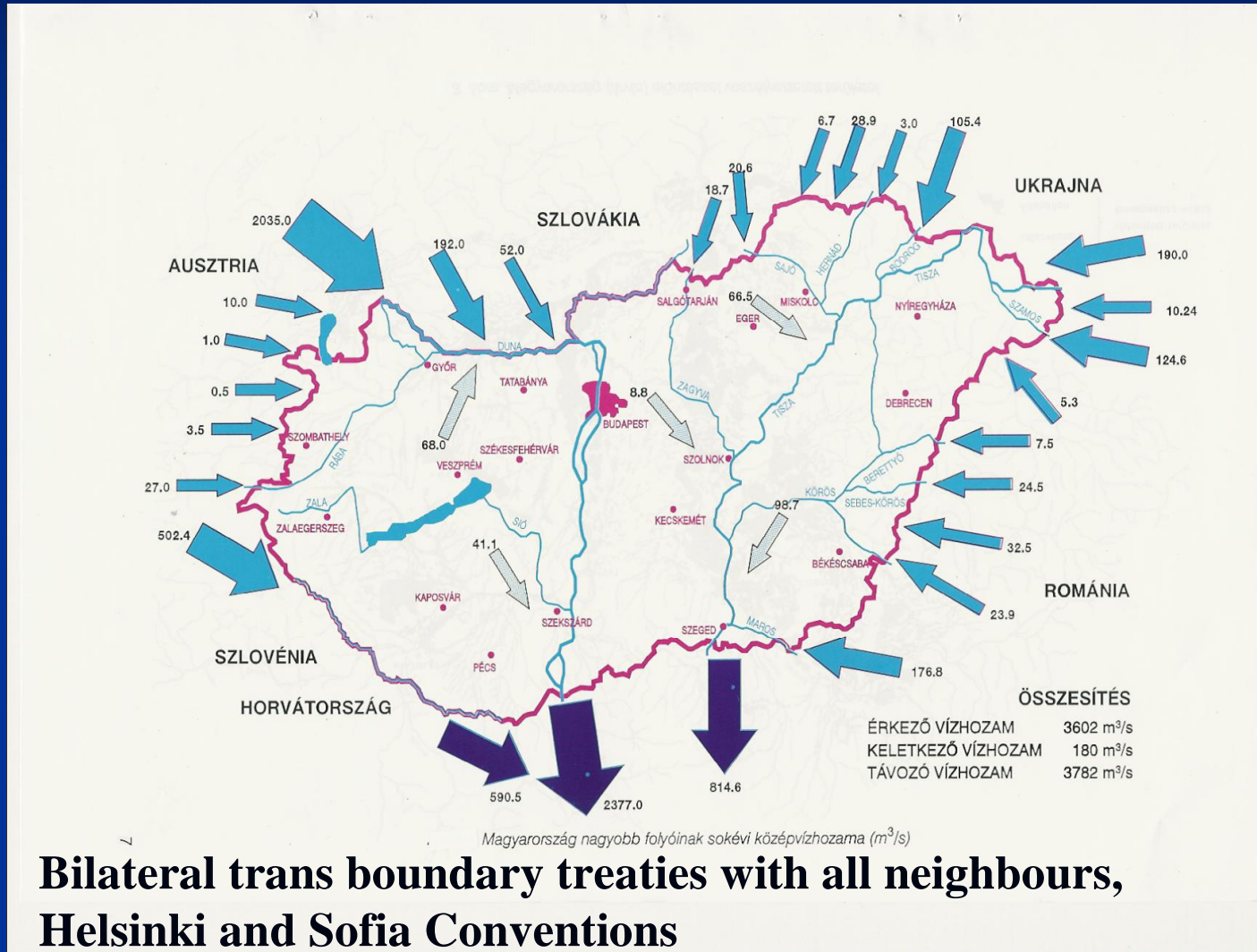
# Flood management in Hungary and the 2006 flood

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Senior chief adviser  
National Water Centre and Public Archives,  
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# Where we are ?

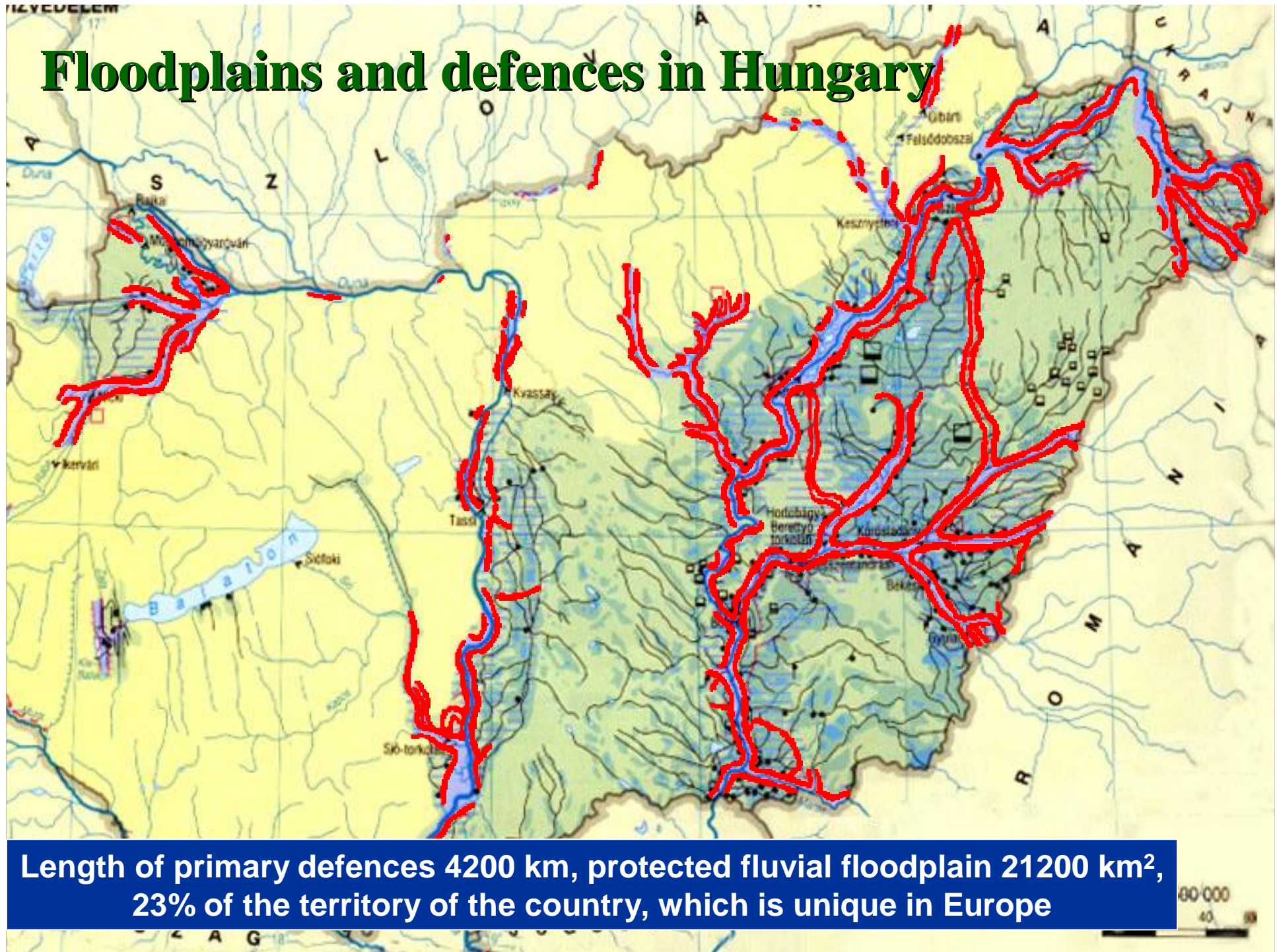


# Rivers entering and leaving Hungary



**Bilateral trans boundary treaties with all neighbours,  
Helsinki and Sofia Conventions**

# Floodplains and defences in Hungary



Length of primary defences 4200 km, protected fluvial floodplain 21200 km<sup>2</sup>, 23% of the territory of the country, which is unique in Europe

# Frequency of damages caused by water in Hungary

- ❖ *Floods: smaller scale in every 2-3 years*
  - ▲ *significant in every 5-6 years*
  - ▲ *devastating in every 10-12 years*
- ❖ *Standing/access water inundations:*
  - every 2-3 years*
- ❖ *Draught: every 3-5 years*

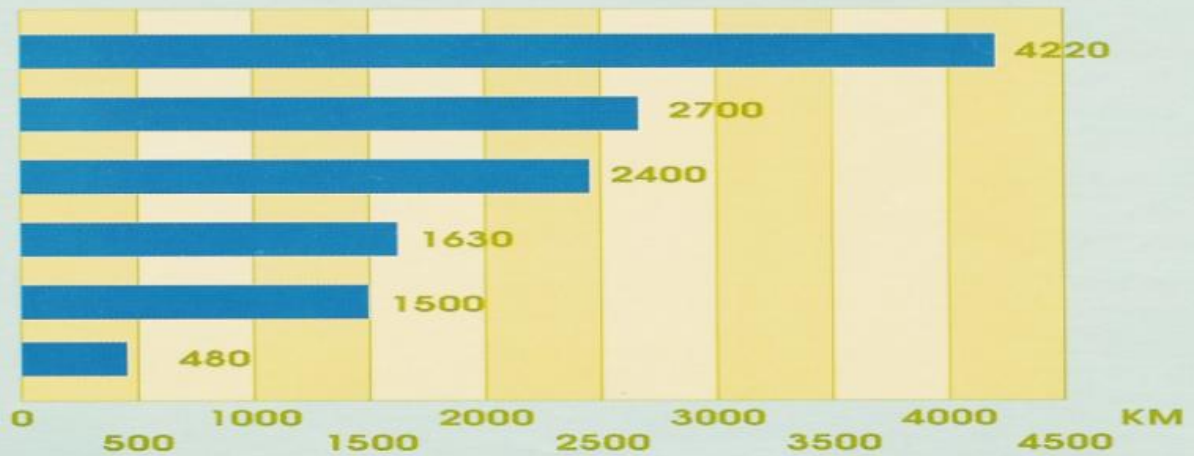
# *Values at risk of flooding*

❖ Arable land	40 %
❖ Railways	32 %
❖ Main roads	15 %
❖ Communities	646
❖ Population affected	2,3 millions
❖ Total value at risk	USD 30 billions

# COMPARISON OF GREATER EUROPEAN FLOOD CONTROL SYSTEMS

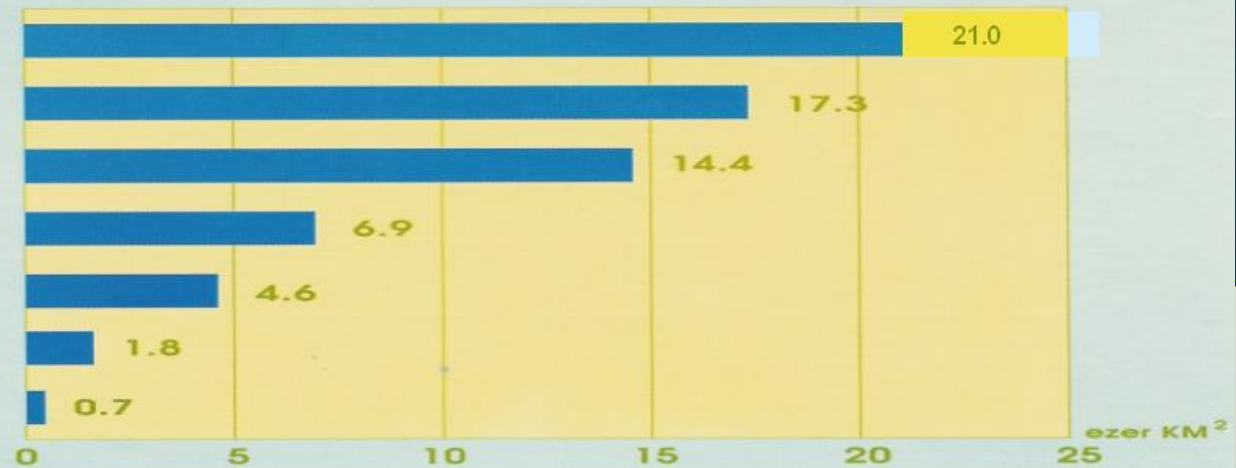
## Length of defence structures

HUNGARY  
 TISZA-VALLEY (in Hungary)  
 PO-VALLEY  
 UKRAINE  
 THE NETHERLANDS  
 LOIRE-VALLEY

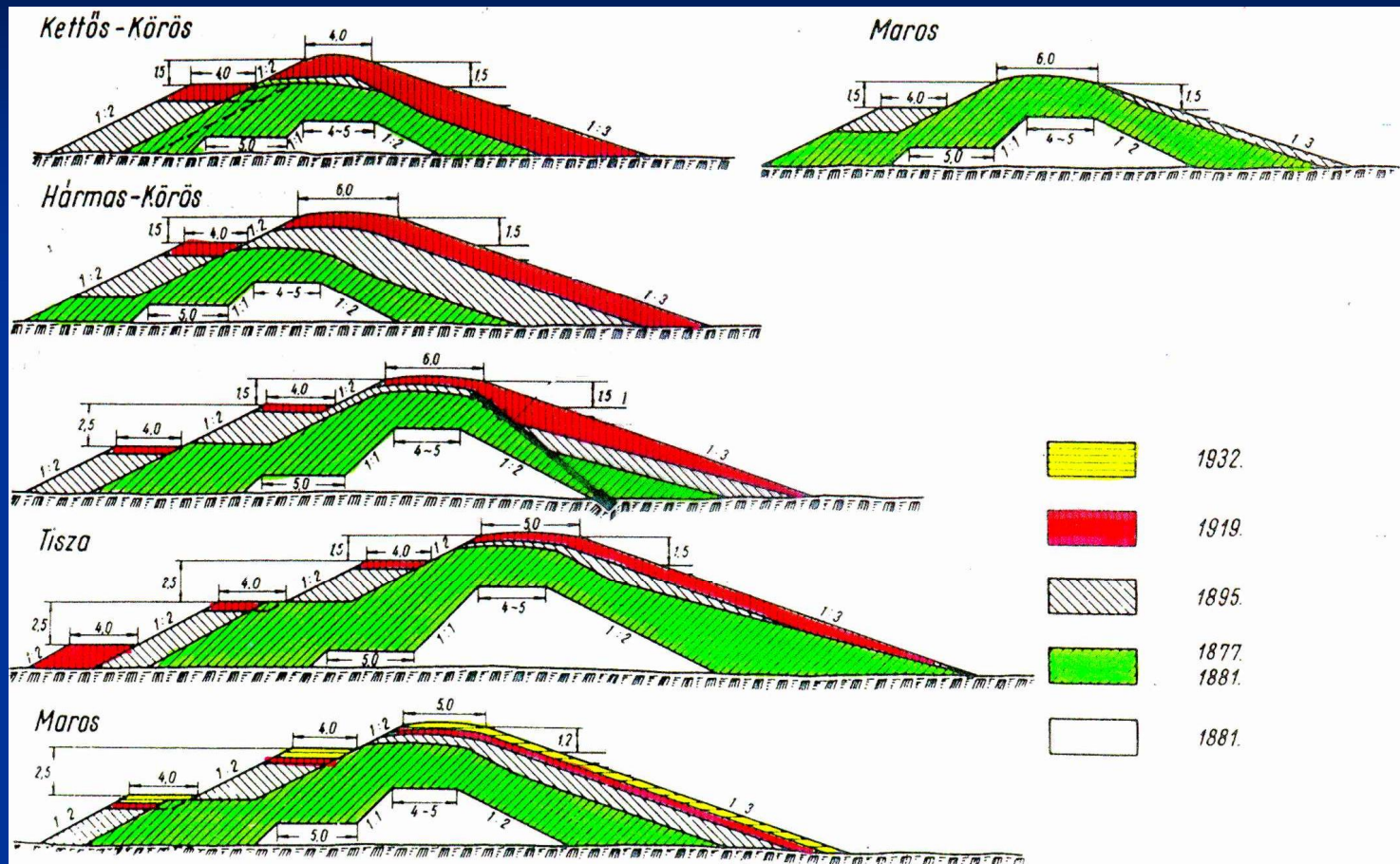


## Extension of protected floodplains

HUNGARY  
 TISZA-VALLEY (in Hungary)  
 THE NETHERLANDS  
 PO-VALLEY  
 UKRAINE  
 ZUIDER-ZEE  
 LOIRE-VALLEY



# Heightening and reinforcement of dikes



*... more than 33 % of the dikes do not meet the standards  
(1 m above the 1 in 100 years flood),  
thus strengthening and/or heightening required urgently along 500 km section.*



# Allocation of the flood prevention and emergency tasks

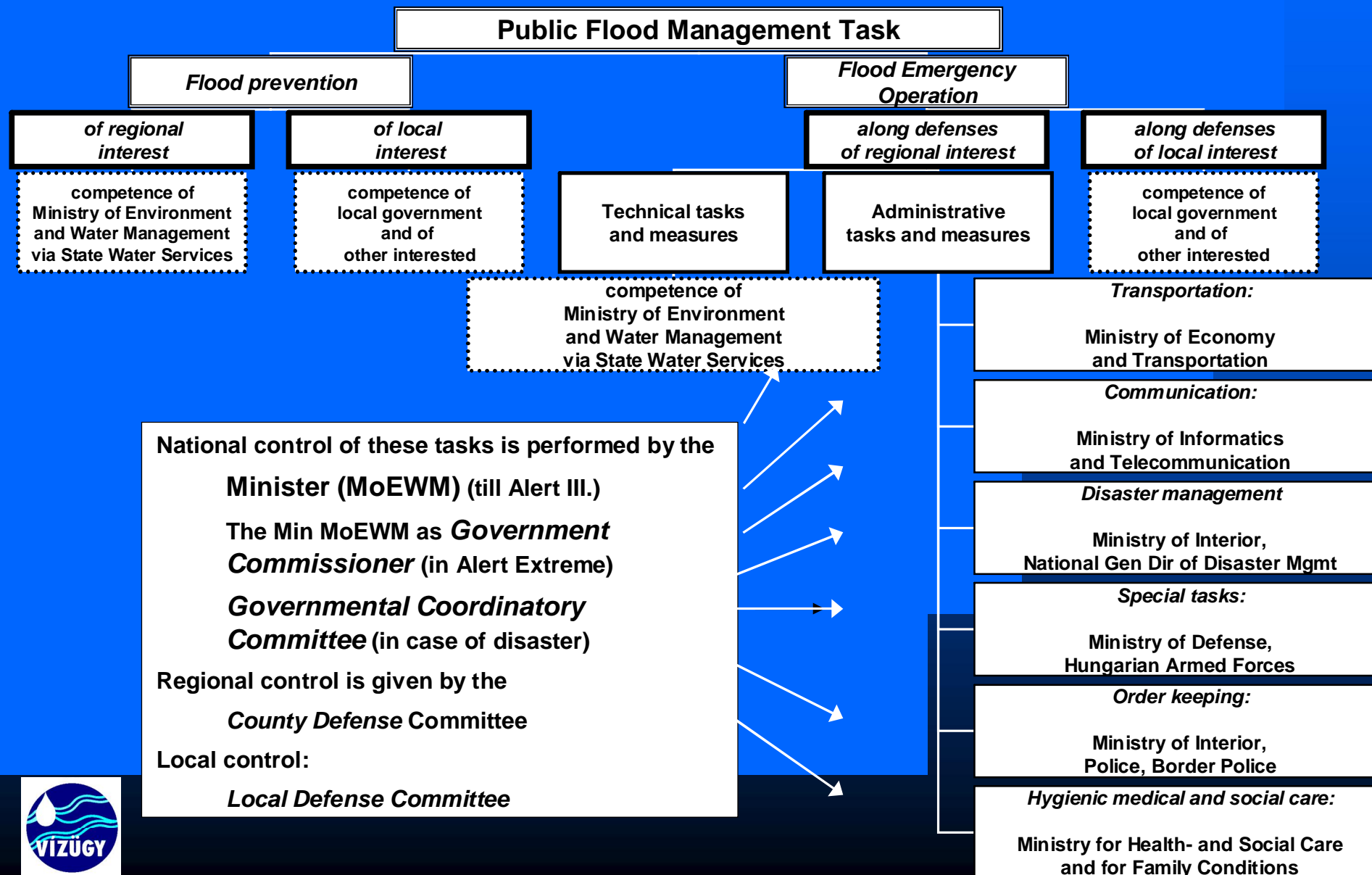
- Mitigation of flood losses is the obligation of
  - the state
  - the local authorities interested
  - other interested
- Preparation for and implementation of the ***technical tasks*** of the emergency operation is the duty of
  - the state, in case of flood alleviation of regional interest
  - the local authority in case of flood alleviation of local interest

# Allocation of the flood prevention and emergency tasks (2)

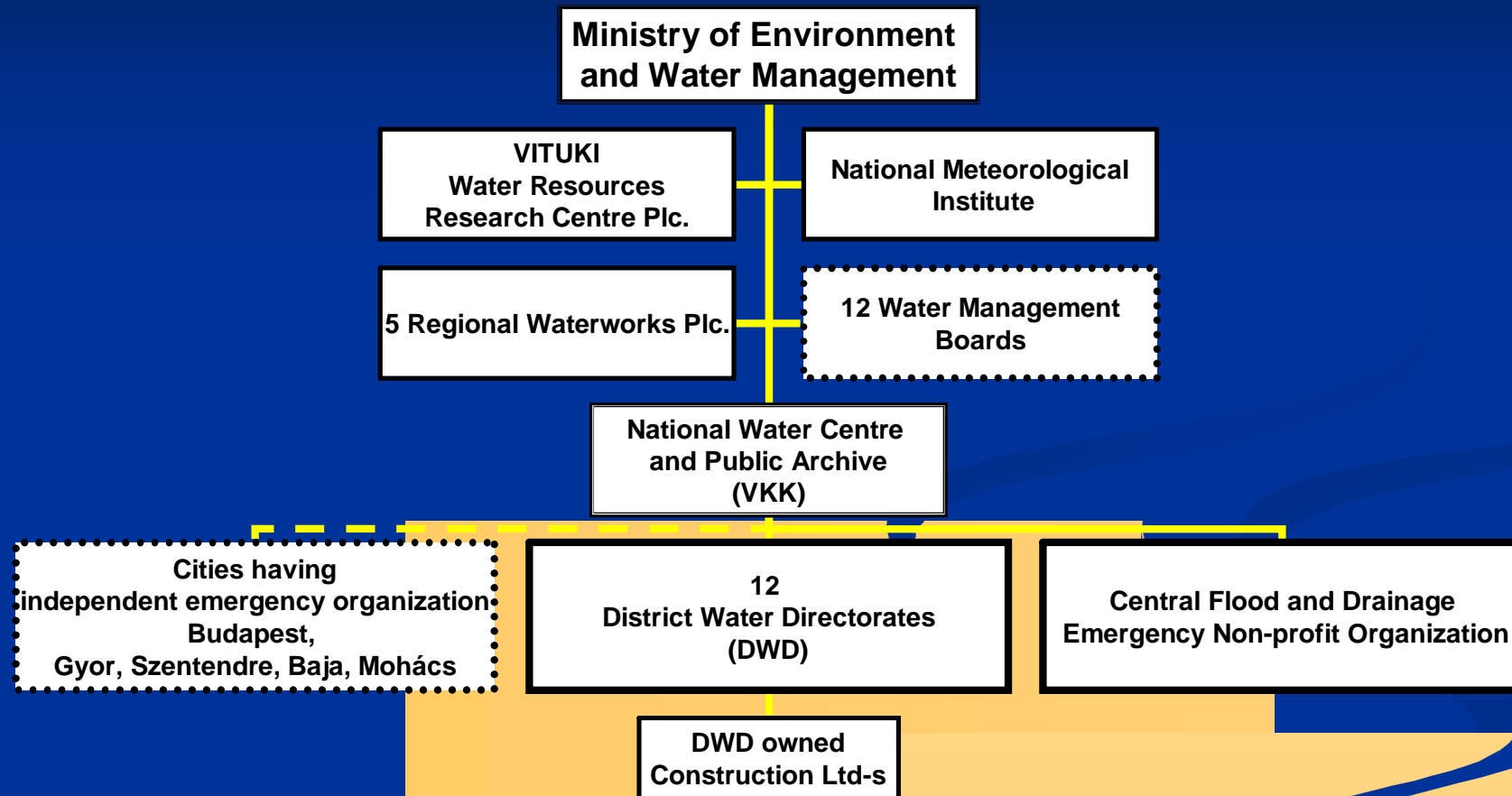
- Preparation for and implementation of the ***administrative tasks*** is the duty of
  - the mayor (lord mayor in the capital)
  - the chairman of the county assembly
- Organisational framework
  - the Local Defence Committee (chaired by the mayor/lord mayor)
  - the County Defence Committee (chaired by the chairman of the county assembly)

**In case of emergency or disaster, *executive and legislative* measures are taken by these committees on the level of their competence (National – county – local).**

# Allocation of public tasks of flood management based on property and interest


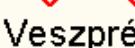



# Structure of the State Water Administration















Administrative system and the water authorities in Hungary



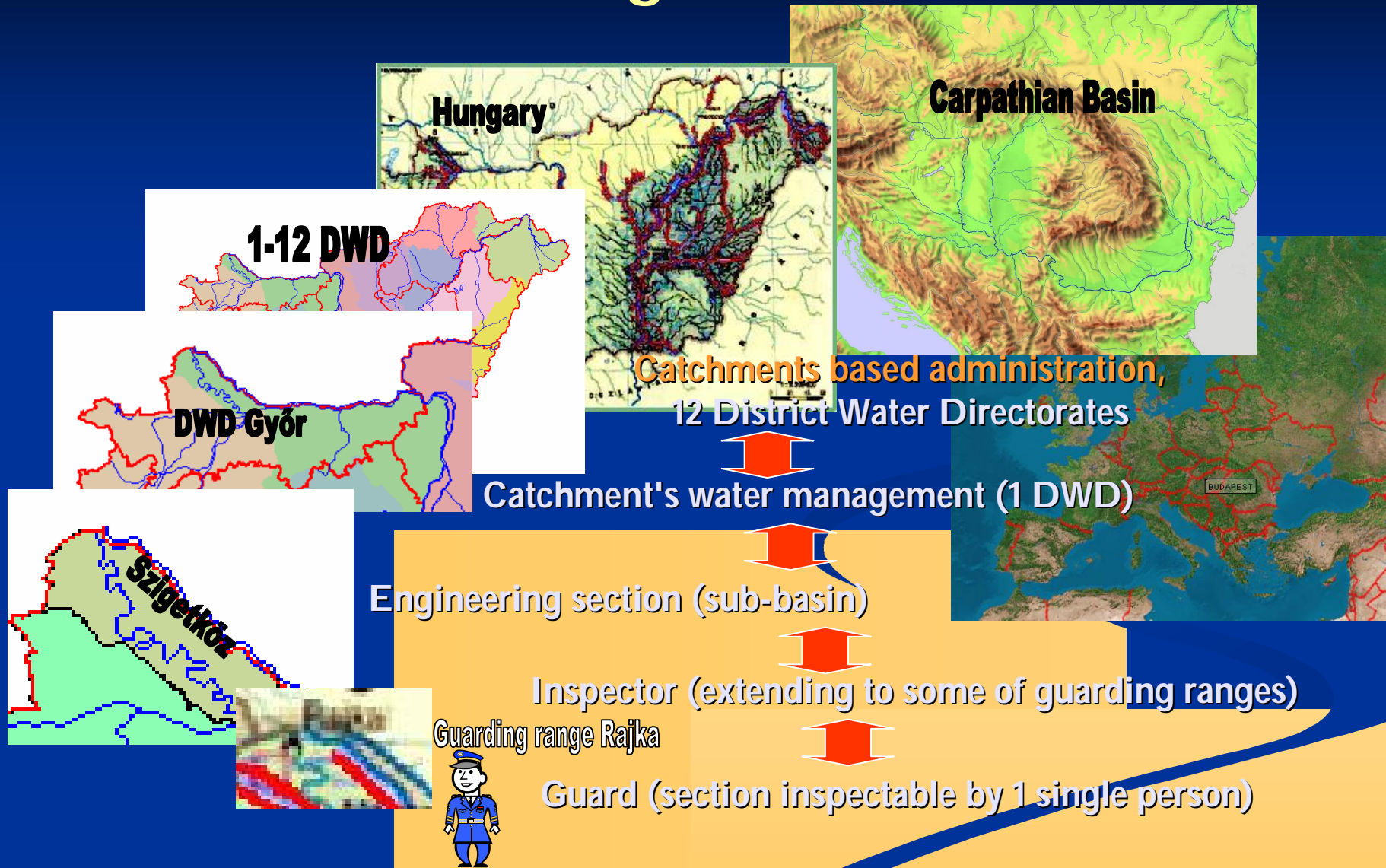
 Administrative system  
 Country border  
 Veszprém Country name

**District Water Authorities**

**Legend**

	1. NORTH-TRANSDANUBIAN
	2. CENTRAL DANUBE VALLEY
	3. LOWER DANUBE VALLEY
	4. CENTRAL-TRANSDANUBIAN
	5. SOUTH-TRANSDANUBIAN
	6. WEST-TRANSDANUBIAN
	7. UPPER TISZA
	8. NORTH-HUNGARIAN
	9. TRANS-TISZA
	10. CENTRAL TISZA
	11. LOWER TISZA
	12. KÖRÖS VALLEY

# Structure of administration in water management



# Priorities of flood mitigation policy

Priority is given to prevention. Most important tasks :

## *Structural improvements*

### Tisza Valley

- ✓ reinforcement of the existing flood embankments to meet the design flood with a recurrence period of 100 years,
- ✓ improvement of the flood conveying capacity of the flood bed,
- ✓ creation of polders in the protected floodplain for emergency retention of flood peaks exceeding the design flood;

### Danube Flood Defence Project

- ✓ reinforcement of sections of existing embankments not meeting the design criteria along the Danube and its tributaries,
- ✓ construction of new dike in the open floodplain areas.

## Priorities of flood mitigation policy (2)

### *Non-structural measures and improvements*

- Flood forecast and warning improvements
- Flood risk assessment and mapping in the frames of EU Action
- Programme to raise public awareness and support decisions
- Adequate land use
- Improvement legal and institutional background
- Upgrade and modernisation of emergency and confinement plans by using GIS and AutoCAD techniques
- Strengthening international co-operation