

HYDROSOLIDARITY IN PRUT RIVER BASIN

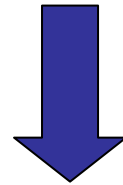
– KEY ELEMENT IN TRANSBOUNDARY FLOOD MANAGEMENT -



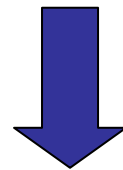
CEE NBO & N.A. Apele Romane

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**To accomplish the WFD + FD
objectives at transboundary
river basins level**



Harmonizing the National Plans



**HARMONISED BILATERAL
AGREEMENTS (RO + UA; RO + MD)**



BILATERAL AGREEMENTS

Romania – Ukraine:

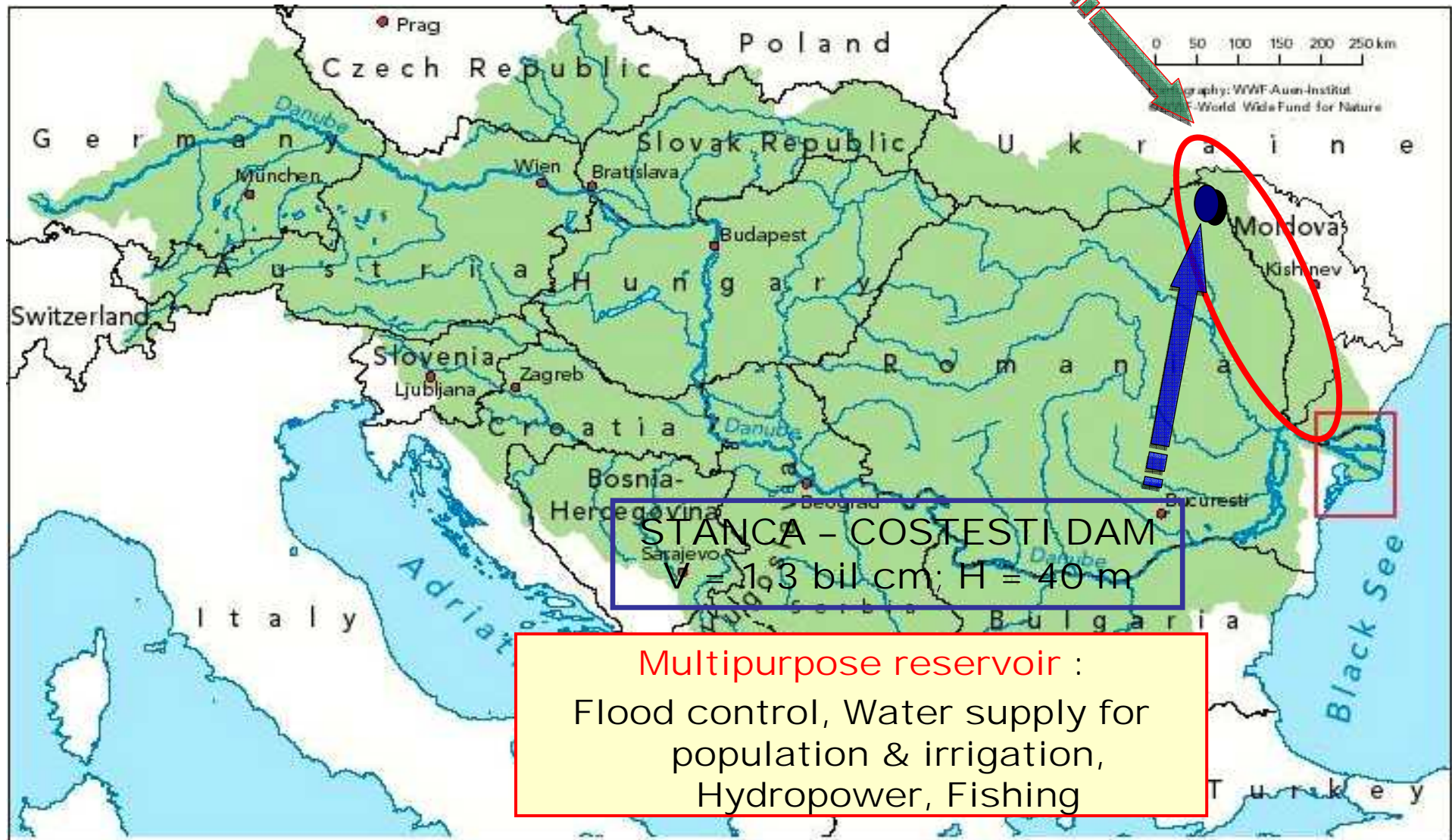
- **Agreement on the cooperation in the transboundary waters field (Galati, 1997)**
 - Flood management
 - Water quality
 - Exchange data

Romania – Moldova :

- **Bilateral agreement to operate Stanca Costesti Dam - 1982**
- **MoU for the cooperation on the Prut river between N.A. “Apele Romane” / “Romanian Waters” and the related institution from Moldova “Moldavien Waters” – 1995**

RIVER PRUT BASIN GENERAL DATA

- RB Prut surface – 10.990 km²
- Prut river length – 742 km
- $Q_{\max 1\%} = 4150 \text{ m}^3/\text{s}$
- $Q_{\max 0.1\%} = 6550 \text{ m}^3/\text{s}$

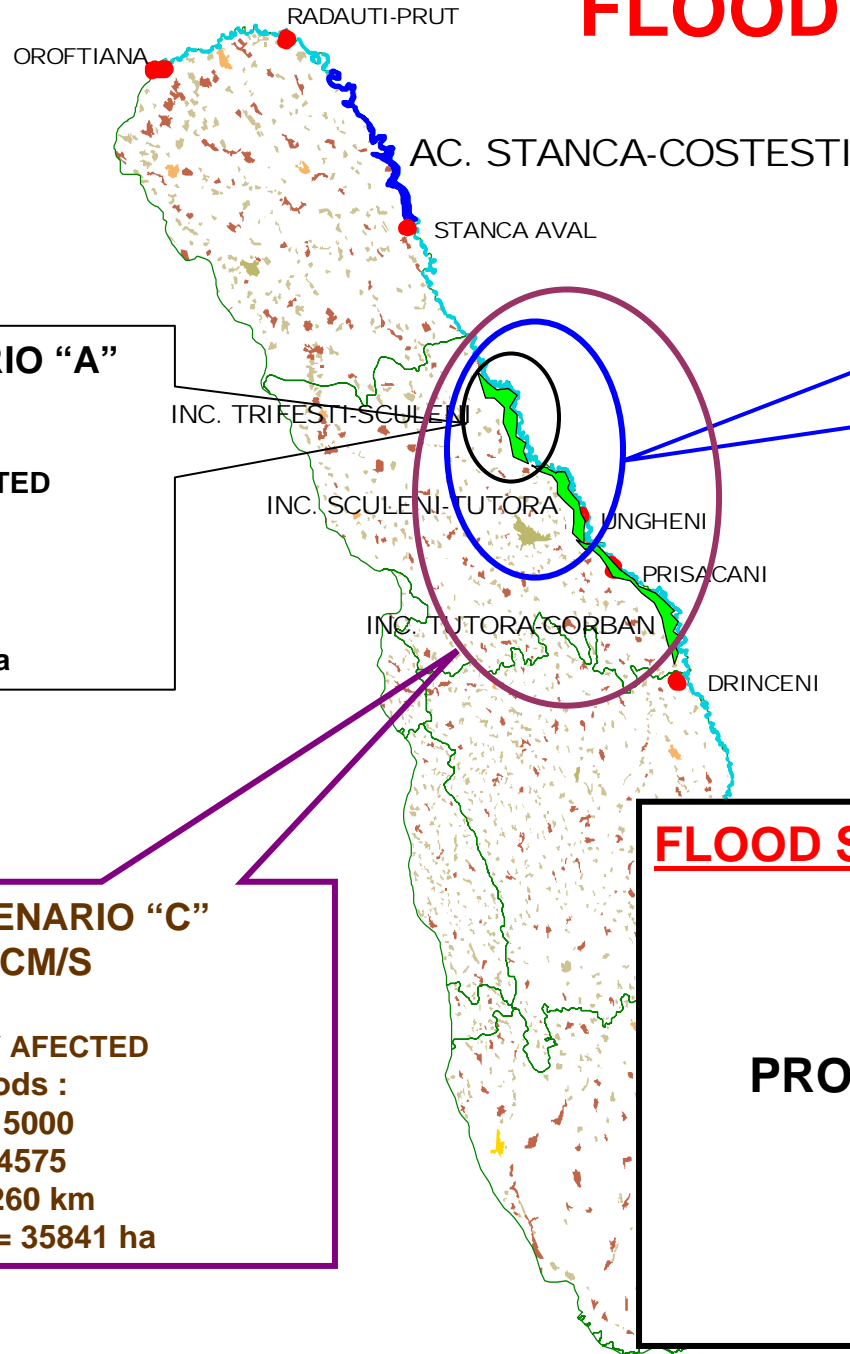


Historical flood event on Prut river 24/07 – 31/07/2008

... the **greatest flood event** registered on Prut river till present :

- **Flow** : $Q_{\max} = 4650 \text{ m}^3/\text{s} > Q_{1\%}$
- **Shape of hydrograph** : two peaks
 - $H_{1\max} = 1130 \text{ cm}$, exceeding the danger level with 5.30 m
 - $H_{2\max} = 1058 \text{ cm}$, exceeding the danger level with 4.58 m
- **Volume** : 1.400 bil cm
- **Time** : 8 days
- **Speed** : water level in the reservoir increased with 8.64 m in 3 1/2 days (max. increasing being of 2.66 m / day - normally 1m / day).

FLOOD SCENARIOS



FLOOD SCENARIO "A"

$Q_{out} = 750 \text{ CM/S}$

POTENTIALLY AFFECTED

People + Goods :

- People = 2800
- Houses = 721
- Roads = 60 km
- Agr. Land = 8400 ha

FLOOD SCENARIO "B"

$Q_{out} = 1000 \text{ CM/S}$

POTENTIALLY AFFECTED

People + Goods :

- People = 8500
- Houses = 2530
- Roads = 180 km
- Agr. Land = 17200 ha

FLOOD SCENARIO "C"

$Q_{out} = 1250 \text{ CM/S}$

POTENTIALLY AFFECTED

People + Goods :

- People = 15000
- Houses = 4575
- Roads = 260 km
- Agr. Land = 35841 ha

FLOOD SCENARIO JOINTLY ADOPTED

$Q_{in} > Q_{1\%};$
 $Q_{out} = 750 \text{ m}^3/\text{s}$

PROTECTED People + Assets :

- People = 15000
- Houses = 4575
- Roads = 260 km
- Agr. land = 35841 ha

CONCLUSIONS

1. **Downstream reservoir – no fatalities and not affected properties ;**
2. **The reservoir has been jointly operated by ROMANIA and MOLDOVA, according to the new operating guide regulation (2007) ;**
3. **Technical decisions have been permanently harmonized by the involving parts ;**
4. **Political decisions have been taken based on technical decisions;**
5. **Permanent information of the population, on both sides of the Prut river ;**
6. **Necessity of a new trilateral cooperation agreement (Ukraine, Rep. Moldova, Romania).**

FLOOD HYDROGRAPH 24.07.-10.08.2008

