Tackling the water management issues due to agricultural activities in Romania

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Europe –INBO 2021
19th International Conference for the implementation of the European Water Directives
8-10 December 2021
Water management and agricultural activities

• Agriculture is an important economic sector for Romania
• An important water use and main source of diffuse pollution
• Large number of very small farms –about 3 millions
• Decrease of water use comparing with 1990
• Water use for agriculture influenced by the energy price
• Climate change is a huge challenge
• Agriculture has to adapt to climate change and EU environmental directives
CLIMATIC RISK INDEX (CRI) / 1997-2016

The most affected 15 countries in Europe / 1997-2016

DROUGHT INDICATORS / agrometeorological operational use and research activities

**climatic indicators**: SPI, Aridity index, etc

**agrometeorological indicators**: Soil moisture, heat waves, etc

**satellite-derived products**: Normalized Difference Water Index (NDWI), Leaf area Index (LAI); Fraction of Absorbed Photosynthetic Solar Radiation (fAPAR)

THE SOUTH, SOUTH-EAST AND EAST OF ROMANIA ARE THE REGIONS WITH RISK OF WATER SCARCITY AND DROUGHT

Areas affected by drought in Romania
Target – small farmers

Challenges:

- **Polarised agricultural sector**: small farming and large intensive farms
- Scattered farms, mozaik pattern of villages and plots
- Limited available space for building a modern stable or an individual manure storage
- Need of further awareness and knowledge transfer
- Aged population and depopulation or rural areas
- Decrease trend of the number of animals in extensive management – already very limited livestock density at national level (0.4 LSU/ha)
Arranged Irrigated areas in Romania
Establishment and implementation of the adaptation measures (1)

Non-structural measures
- Creation of a water saving culture/new technologies
- Better forecast of water regime
- Use of economic instruments/right price on water
- Improve land use planning
- Optimization of the water management
- Re-use of water
Establishment and implementation of the adaptation measures (2)

• Afforestation
• Extensions and rehabilitation of the water supply networks
• Modernization of the irrigation systems
• Rehabilitation of the wetland areas
• Developing new water sources (wells)
• Improving waste water treatment
• Recharge of aquifers
• Waste Water reuse for irrigation
Promotion of green infrastructure for adaptation of the water management

• Started after 1990 with massive reconstruction in the Danube Delta
• Establishment of the Lower Danube Green Corridor in 2000 which include territories in Romania, Bulgaria, Moldova, and Ukraine
• Development a strategic planning after the floods on Danube in 2006 for the rehabilitation of the Romanian Danube Floodplain
• Hydromorphological restoration measures included in the River Basin Management Plan
• Implementation of the Green Deal in the water sector
Rehabilitation project of agricultural area applied in the Danube Delta

Abandoned agricultural area → Performing the breach for flooding → The success of the reconstruction works
Ecological Rehabilitation in the Danube Delta
BARTA PRETABILITĂȚII INCINELOR AMENAJATE CA INCINÉ MIXTE (AGRICOLE, PISCICOLE / POLIBRI PENTRU STOCARE DE APU)
Conclusions

• Agriculture is one of the main water uses which should adapt to the climate change
• Need for innovation and technology to reduce water demand — “More crop per drop”
• Awarness and training important for adaptation of the new technologies
• Use of green infrastructure is a win-win measure
• Economic intruments are very important for change in behaviour for the water sector
Thank you for your attention!