

An aerial photograph of a rural landscape. A river flows through the center, surrounded by agricultural fields. The fields are divided into various shapes and sizes, with some appearing to be in different stages of cultivation or harvest. The colors range from light brown to green. In the background, there are some buildings and a road network.

# Waterway to the Neusiedlersee

Critical thoughts about the intervention and  
consequences to our environment

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Krstic Tijana – Nagy Zsuzsanna – Spachinger Karl

# General Data

## Area?

285km<sup>2</sup> (incl. reed-belt), 220km<sup>2</sup> in Austria

## What?

Steppe lake, high evaporation, high salinity

## Why?

Future of the lake and the region

## Who?

Krstic Tijana, Nagy Zsuzsanna, Spachinger Karl

An aerial photograph of a river meandering through agricultural fields. The river is a prominent feature, winding through the landscape. The fields are a mix of brown and green, indicating different crops or stages of growth. The overall scene is a typical rural landscape.

**Main Contentious Issue**

**Dry-Up**

vs.

**Ecological Impact**

# Analysis

## Advantages

- Preventing the drying-up of the lake
- No economical disaster for the region
- Irrigation
- New ecological space
- Physical integration of the Neusiedler See to the Danube

## Disadvantages

- High intervention on the environment
- Disturbance of actual bio-corridors and habitats
- Aesthetic ruining
- Uncertainty of the ecological consequences
- No possibility of amends of the intervention

# Analysis

An aerial photograph of a rural landscape. A winding river flows through the center of the image, surrounded by agricultural fields. A small settlement with several buildings is visible on the right side of the river. The overall scene is a typical rural landscape with a mix of natural and human-made elements.

## Possible variants

1. Ecological waterway – a surface water body
2. Subterranean pipe – an underground water channel
3. Combined channel – a combination of variant 1 and 2

# Ecological Waterway

## Appearance

- Meandering
- Riparian area
- Continuously on the surface
- Using on-site material
- On-site vegetation



## Cleaning

- Mechanical cleaning
- Biological cleaning during flow
- Increasing water quality of the Danube

# Subterranean Pipe

## Appearance

- Straight and closed
- No loss of land
- Hardly any disturbance on the surface
- Diameter in correlation to the amount of water

## Cleaning

- Mechanical cleaning
- Biological cleaning if possible
- Chemical cleaning

# Combined Channel

## Appearance

- Combination of variant 1 and 2
- Subterranean part
  - Crossing different buildings, streams, channels, etc
  - Terrain level difference
- Surface part
  - Riparian zone
  - Biological cleaning

## Cleaning

- Mechanical cleaning
- Biological cleaning during surface flow



# Comparison - Problems

Problem	Ecological Waterway	Subterranean Pipe	Combined channel
Intervention to flora and fauna	Yes	No	Yes
Flood control	Yes	No	Yes
Loss of agricultural land	Yes	No	Yes
Loss of forest land	Yes	No	Yes
Loss of settlement area	Yes	No	Yes
Uncertainty of consequences	Yes	Yes	Yes
Aesthetic ruining during the construction	No	No	No
Aesthetic ruining after the construction	No	No	No
Intervention to the landscape	Yes	No	Yes
Different between flora and fauna	Yes	No	No
Water quality	Yes	Yes	Yes
Salinity	Yes	Yes	Yes
Maintenance	Yes	No	Yes
Sediment delivery from the Danube	Yes	Yes	Yes
Sediments from the land	Yes	No	Yes

Comparison of different occurring problems because of the construction of the channels

Table – Comparison of occurring problems

# Comparison - Interventions

Intervention	Ecological Waterway	Subterranean Pipe	Combined Channel
Flora	- / +	o / o	-/+
Fauna	- / +	o / o	-/+
Landscape	- / +	o / o	-/+
Groundwater	o / +	o / o	o/+
Bio-corridor	- / +	o / o	o/o
Land use	- / -	o / o	-/-
Mobility	- / -	o / o	o/o
Infrastructure	- / o	o / o	o/o
Soil	- / +	- / o	-/+
Living conditions	o / +	o / o	o/+

Table – Comparison of interventions of our environment

Comparison of different occurring interventions because of the construction of the channels.

# Available Data

- Ecological feasibility study (2004)
- Economic-dynamical study (2004)
- Situation of the water management in the catchment area of the Neusiedlersee
- Different Hungarian studies



# Austrian Results

## Ecological study

- Waterchannel is realizable
- Uncertainty about the whole ecological consequences
- Deep impact to the ecological system

## Economical study

- Waterchannel is realizable
- Low costs (compared to the damage tourism would take in case of the dry-up)

# Hungarian Examined Studies

## Main Studies

- Study on Fluctuation of the water level of Neusiedl See regarding the actual water regulation
- Hydrological and chemical status analyses of the Neusiedl See
- Water supply from Raab and Danube water?
- Report of Hungarian and Austrian Courts of Audits
- 6-year development Plan for the territory of the Fertő-Hanság National Park Directorate (2003-2008)
- Reconstruction of the Ikva-Hanság-Fertő channel system and the Rábca river bed

An aerial photograph of a rural landscape, likely in Hungary, showing a winding river or canal through agricultural fields. The fields are divided into various shapes and sizes, with some appearing to be in different stages of cultivation or harvest. The river is a prominent feature, curving through the center of the image. The overall color palette is dominated by earthy tones like browns, tans, and greens.

# Hungarian Examined Studies

## Related Studies

- Environmental impact assessment of the possible solutions on the water supply of the lake Balaton
- Actual water quantity and quality problems on lake Balaton and possible solutions
- Water supply for lake Balaton

# Hungarian Results and Thoughts

## Ecological point of view

- No ecologist has confirmed the demand of water input
- Water not suitable
- Touristical purpose cannot be overgrown
- Water tests are necessary
- Research for other solutions (Water from the catchement of the Raab)

## Economical point of view

- No available economical thoughts

An aerial photograph of a rural landscape. A winding river flows through the center of the image, surrounded by agricultural fields. The fields are divided into various shapes and sizes, with some appearing to be planted in crops. A small town or village is visible on the right side of the image, with several buildings and a cluster of structures. The overall scene is a typical agricultural landscape.

Thank you for your attention.