

The DANUBE Region: Current Role of the European Water Framework Directive and Possible Role of European Landscape Directive.

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Structure of Presentation

- Part 1: Introduction to Danube Region, Water and Landscape.
- Part 2: Flashlights on Serbia, Romania, Moldova
- Part 3: Understanding Frameworks of Water and Landscape and their Role in Regional Sustainability


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Why I am interested in this topic?

- Many planning problems are likely to be influenced in future via WFD
 - Common guidelines instead of individual ones!
 - Supervising diploma works directed to water framework directive
- Stakeholder on behalf of interests of IAD, International Association for Danube Research
 - Water quality map on sapro-biological base
 - Sturgeon Action plan
 - New research methods, e.g. based on PCR (actually not wanted from administrators)
- My institute takes an active role in European Landscape Convention
 - An initiative of Council of Europe
 - Based on Organisation of Local Authorities in Europe
 - A Connection to EU-WFD can be made.
- Main questions for next years
 - What is a good standard of water quality?
 - How to improve the ecological quality of water bodies?
 - How to bring in the European landscape convention?


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Danube Region



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Different Conditions Within Danube Basin From Mountains.....



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.....to flatlands (sometimes floodlands)



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Danube Region Physical Properties

- 22nd largest river basin with 815,000 km²
- 27th longest river with 2850 km
- 0.2% of global surface
- 0.5% of global landscape

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Waterflow in Danube Region

- 550 km³ water equivalent precipitation
 - 0.5% of global precipitation
 - 680 mm average precipitation
- 280 km³ evapotranspiration
 - 0.4% of global evapotranspiration
 - 9° C average annual ± 10° C monthly variations
- 270 km³ river runoff
 - 0.7% of global run off
 - 6,400 m³ mean discharge per second
 - 19 million tons sediments
 - 60 million tons sediments dissolved

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15 smaller sub-watersheds of Danube River

Danube Sub-river Basins

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Danube Region Population Properties & Water Demand

- Some 90 million inhabitants
 - 1.5% of global population
 - < 100 per km²
 - < 600 l per day and person freshwater demand
- 20 km³ water for human uses
 - Less than 5% of precipitation
 - Less than 10% of river run-off
 - Seasonal distribution can be a problem
 - Drought in many areas of Danube river basin e.g. in 2000
 - Flood events in many areas of Danube river basin e.g. in 2002

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Danube Region Contrasts

- Income Disparity
 - 30,000 US\$ in Switzerland (1999)
 - 500 US\$ in Molavia (1999)
 - Appr. 60 times within Danube Region
 - Appr. 4 times within European Union
- Three subregions
 - Upstream A, Ch, D
 - Central CR, SLO, SK, HU, CRO
 - Downstream BiH, BUL, MOL, RO, UKR, YU

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Danube Region

- Danube Region includes
 - Mountainous landscapes
 - Coastal landscapes
 - Rural landscapes
 - Fluvial landscapes
- Water defines type of landscape
 - shape of water bodies
 - flows of water

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Mountain Landscapes



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Coastal Landscapes



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Rural Landscapes






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Fluvial Landscapes






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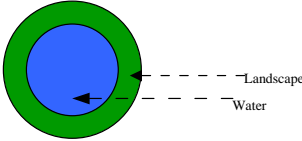
Actors in Planning Landscape & Water


- Individuals Using the Land
- Administration
- Science, Art, Intrest Groups

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Landscape and Water (1)



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Landscape and Water (2)

- Administration
 - Landscape
 - Water

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Relation Landscape, Water, Administration

- Administrative levels
 - Danube Region, European Union;
 - European Water Directive
 - ICPDR coordinating office
 - Sub-riverbasins, National and Provincial/State Laws
 - Specification of European Water Directive
 - Communities
 - Landscape Convention (Council of Europe), Hot spots of EWD

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Landscape and Water (3)

- Administration
 - Landscape
 - Water
 - In Depth Analysis

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In Depth Analysis

- Science
 - General laws criterion
- Arts
 - Uniqueness criterion
 - cultural heritage, individual expressions
- Influence on
 - administration
 - public opinion
 - development

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Facts of E15

(Data 2000-03)

EU 15 Countries	Area in km²	Population	Density km²	Per caput inco	Per ha income	BIP in 1,000,000	Share in BIP of
Austria	83858	8098000	97	25220	24354	204232	2.49%
Belgium	32545	10252000	315	24540	77303	251584	3.06%
Danmark	43096	5340000	124	32280	39998	172375	2.09%
Finland	338144	5180000	15	25130	3850	130173	1.58%
France	543965	58850000	108	24090	26062	1417697	17.22%
Germany	357022	82150000	230	25120	57801	2063608	25.07%
Greece	131957	10560000	80	11960	9571	126298	1.53%
Great Britain	242910	58739000	246	24430	60081	1459424	17.73%
Ireland	70273	3794000	54	22660	12234	85972	1.04%
Italy	301236	57679000	191	20160	38588	1162809	14.12%
Luxemburg	2586	438000	169	42060	71239	18422	0.22%
Netherlands	41526	15919000	383	24970	95723	397497	4.83%
Portugal	92345	10010000	108	11120	12054	111211	1.35%
Sweden	449664	8389000	20	27140	5349	240705	2.92%
Spain	504782	39450000	78	15080	11785	594906	7.23%
Summe	3152451	368230000	117	0	0	8232780.8	100.00%

Source: Fischer Weltalmanach 2003, Data from 2000; M. Breiling, TU Wien, Sokrates/Erasmus exchange SLU Ainars, Nov. 16th, 2005

Facts of Danube Region


(Data 2000-03)

Danube Countries	Area in km²	Population	Density	Per caput inco	Per ha income	BIP in 1,000,000	Share in BIP of
Austria	83858	8098000	97	25220	24354	204232	7.28%
Bosnien-Herzegowina	51129	3923000	77	1230	944	4825	0.17%
Bulgaria	110994	8167000	74	1520	1118	12414	0.44%
Croatia	56542	4460000	79	4620	3644	20605	0.73%
Czech Republic	78866	10273000	130	5250	6839	53933	1.92%
Germany	357022	82150000	230	25120	57801	2063608	73.58%
Hungary	93030	10022000	108	4710	5074	47204	1.68%
Moldova	33800	4264000	126	400	505	1706	0.06%
Romania	238391	22435000	94	1670	1572	37466	1.34%
Serbia and Cma Gora	102173	10616000	104	940	977	9979	0.36%
Slovakia	49034	5402000	110	3700	4076	19987	0.71%
Slovenia	20253	1988000	98	10050	9865	19979	0.71%
Switzerland	41285	7180000	174	38140	66330	273845	9.76%
Ukraine	603700	49600000	82	700	575	34720	1.24%
All Danube countries	1920077	228578000	119	0	0	2804503.85	100.00%

Source: Fischer Weltalmanach 2003, Data from 2000; M. Breiling, TU Wien, Sokrates/Erasmus exchange SLU Ainars, Nov. 16th, 2005

Flashlight: Serbia and Montenegro

- Serbia and Montenegro today
 - Reminder of former Yugoslavia
 - Counter development to EU
 - Ever more borders
 - Still difficult political situation inside
 - Income levels far beyond 1990 levels
- Population: 10,655,774
- Land Area: 102,173 km²
 - arable land: 36%
- Some of the best agricultural soils
 - No starvation, even during war
 - Large areas would qualify for organic farming



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Overcoming Consequences of War



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Some of Europe's best soils



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A small farmhouse




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Orchards and bombed bridge in Novi Sad



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Fisherman along the Danube



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Good Potential for Tourism

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Flashlight Romania

- Population: 22 million
- Land area: 237,500km²
 - Water 3%
 - Arable land 41%
 - Irrigated 30% of arable
- Enters EU in 2007
- Entered NATO in 2004

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Flooded Danube Delta

April 2000

Sturgeon Program

- Migrating anadromous sturgeon research at Danube Delta Institute
 - Lead bio-indicator of ecological quality in Danube region
 - Extinct in Upper Danube due to Iron Gates (I+II)
 - Disturbed ecomorphology in upper Danube
 - Endangered in Lower Danube Countries due to enormous prices on black market

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Danube Delta National Park

- No roads
 - Boats for transportation
- Enormous biodiversity
 - Currently chicken flu as major threat

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Danube Delta National Park, Land Use

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Flashlight: Moldova

- Population: 4.5 million
- Land Area: 33,843km²
 - Water 1.5%
 - Arable land 53.3%
 - Irrigated 20% of arable
- Follower State of former U.S.S.R.
 - Poorest country in Europe
 - Over 50% agricultural GDP
 - Majority Moldovians (Rumanian),
 - Minority Russian, Ukrainian,
 - Transnistria Conflict

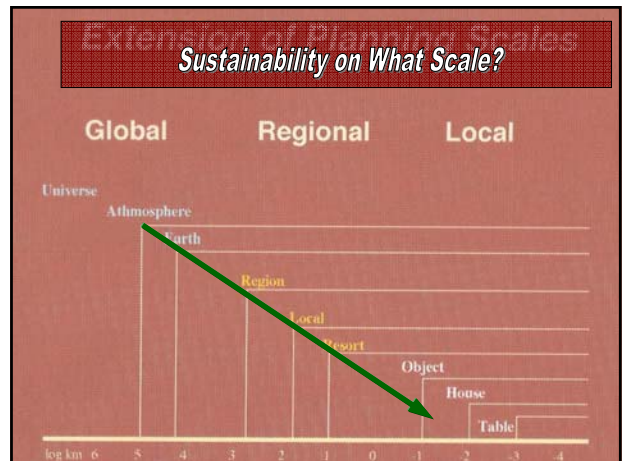
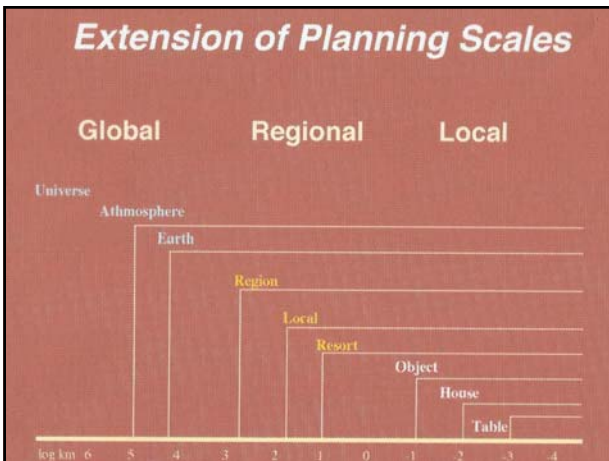
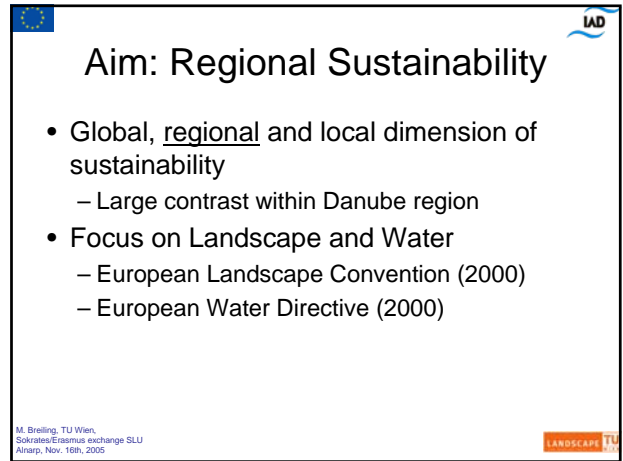
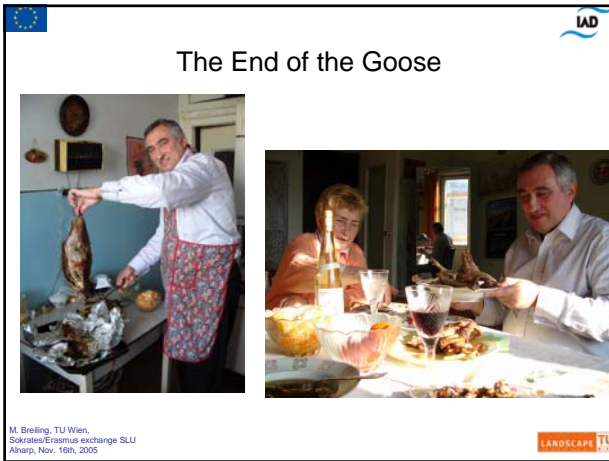
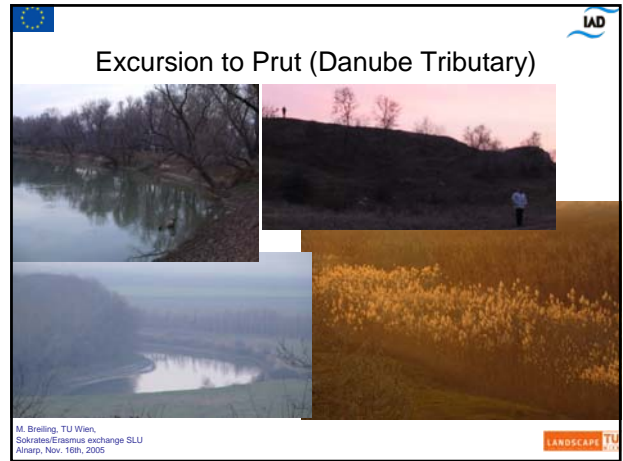
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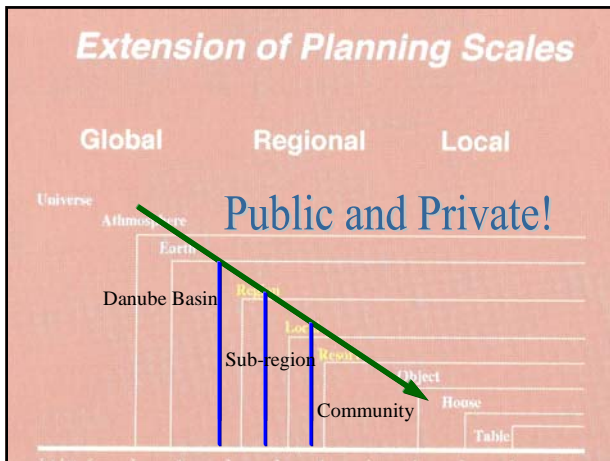
Main Road to Chisinau

Empty roads
No money for gasoline
Winter start, Nov. 2004
One client can save the day
This day she had at least two.
Widely subsistence agriculture
> 50 km from centres
unprofitable

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Recommendations

- Combine European water directive with European Landscape Convention to achieve more overall sustainability
 - Best practice approaches need frameworks for upscaling
 - Water directive has legal standing, basis for downscaling
 - Landscape convention has the „local level“ that is needed to make an impact

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Discussion

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