



HUSZPO

HRVATSKA UDRUGA STRUČNJAKA ZAŠTITE PRIRODE I OKOLIŠA

PRVA REGIONALNA KONFERENCIJA O PROCJENI UTJECAJA NA OKOLIŠ
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THE USE OF STRATEGIC ENVIRONMENTAL ASSESSMENT IN
TRANSPORT MASTERPLANNING

PRIMJENA STRATEŠKE PROCJENE UTJECAJA NA OKOLIŠ U PLANIRANJU
PROMETA

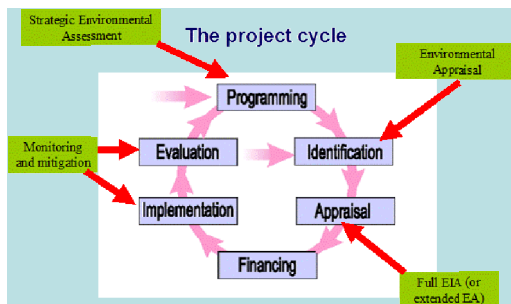
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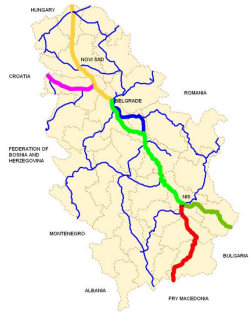
Content

- Outlines of two Transport Masterplans
- How to bring in environmental concerns in decision making
- Tools developed
- Evaluation

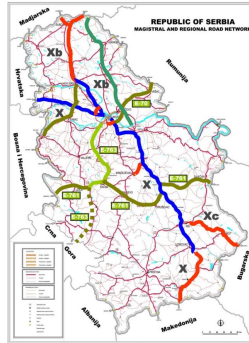


General Transport Masterplan Serbia

18 rail projects



14 road projects



63 IWT Projects



7 aviation projects



intermodal port in Belgrade



- no full alternatives
- bundle of individual projects
- not all have significant environmental impacts

Riga and Pieriga Mobility Plan (Latvia)

location



problems a.o.:

- lack of planning
- limited bypasses of city
- many road accidents
- poor public transport
- high levels of air pollution

three variants:

1. economy (accessibility)
2. environment (public transport)
3. liveability (reducing hindrance)



- no full alternatives
- bundle of individual projects
- not all have significant environmental impacts

SEA Scoping

aspect	impact	road	railway	PT
air/climate	pollution	√√	0	√
	noise	√√	√	√
	temperature changing	√√	0	0
landscape aesthetic	location of the infrastructure	√√	√	√
	vegetation changing	√√/+	0	0
	terrain changing	√√	0	0
soil	pollution	√√	√	√
	polluted deposition	√√	√	√
	compression/sealing	√√	0	0
water	pollution	√	0	0
	losing water bodies	√	√	√
	changing the content of atmospheric water	√	0	0
flora and fauna	loss and damage species	√√/+	0	0
	pollution pressure	√√	√	√
	ecological corridor interruption	√√	√	√
	occupied habitat	√√	√	√
biotope and biodiversity	vanishing	√√/+	√	√
	damaging	√√/+	0	0
agriculture	decreasing potential	√√	√	√
forestry		√√	√	√
water management		√√	0	0
recreation and tourism		√√/+	0	0
landscape and nature protection		√√	√	√

√√/√: substantial negative impact; √: negative impact; 0: negligible impact; +: Positive impact

Strategy for the SEA

- Include costs for environmental issues into Cost Benefit Analysis for Masterplanning
- Comparison of alternatives
- Development of project fiches for Annex I and II projects
- Full analysis of individual projects (including mitigation and environmentally friendliest option) only after selection of the project into the Masterplan

Environmental costs for traffic (case: air pollution)

- Unit values (EUR/Ton) derived from EU research programmes HEATCO (2006), Externe (2005), CAFE CBA (2005), VOLY, TEMOVE (2006) and summarised in IMPACT 1 (Handbook on estimation of external costs in the transport sector (2007))

Cost of air pollution per 100 vehicle km (x EUR 1,-) in Latvia; price level 2010

	car	medium truck	PT mini-bus	PT bus/coach	PT trolleybus/tram	passenger train (per 100 train-km)	freight train (per 100 train-km)
average p.100 vkm							
motorways 2 x 2	0.60	4.00	0.90	2.60			
main roads 2 x 2	0.57	3.50	0.82	2.35			
main roads 1 x 2	0.50	3.00	0.70	2.00			
regional roads 1 x 2	0.54	3.30	0.76	2.20			
urban streets	0.45	5.70	1.30	3.80	3.00		
railways						electr.: 9.00 diesel: 40.00	electr.: 25.00 diesel: 110.00

table 0.6. Ranking of variants THE USE OF STRATEGIC ENVIRONMENTAL ASSESSMENT IN TRANSPORT MASTERPLANNING
1= best; 4 = worst PRIMJENA STRATEŠKE PROCJENE UTJECAJA NA OKOLIS U PLANIRANJU PROMETA

Comparison of alternatives in Latvia against 'Do Minimum'

parameter	Variant A	Variant B	Variant C	Unit
CO ₂	- 4,381	-1,758	-918	ton/year
CO	-136	-74	-57	ton/year
NO _x	-24	-7	0	ton/year
SO ₂	-2	-1	0	ton/year
Volatile Organic Hydrocarbons (including benzene)	-28	-15	-11	ton/year
PM	-5	-2	-1	ton/year
costs/benefits for air pollution #	0.3	0.3	0.3	MEuro
costs/benefits for noise pollution #	- 0.4	-0.4	0.0	MEuro
costs/benefits for climate change #	0.1	0.0	-0.2	MEuro

negative figures are costs, positive benefits

parameter	Reference Variant	Variant A	Variant B	Variant C
air pollution	4	1	2	3
climate change	4	1	2	3
effect on nature and landscape	1	4	3	2
liveability in Riga	4	1	2	3

Project fiche (road project Serbia)

Project name Sector	E-75 Kelebijka - E-75 (motorway) Roads	
Screening Annex I or II?	Annex I	Motivation <ul style="list-style-type: none"> - construction of motorways and express roads - construction of a new road of four or more lanes, or realignment and/or widening of an existing road of two lanes or less so as to provide four or more lanes, where such new road, or realigned and/or widened section of road would be 10 km or more in a continuous length
Environmental impacts		Motivation
Flora	negative	<ul style="list-style-type: none"> - Loss of species, specially endemics and relicts - Habitat degradation - Ecological corridors disturbance
Fauna	negative	<ul style="list-style-type: none"> - Loss of species, specially endemics and relicts - Decreasing of fauna migration - Devastation of underground and ground habitat - Ecological corridors disturbance
Air pollution and climate change	positive/negative	<ul style="list-style-type: none"> - Emissions of pollutants and greenhouse gases - By rerouting traffic, air quality in some (urban) areas will improve
Noise pollution	negative/positive	<ul style="list-style-type: none"> - Increase of noise levels nearby the new road - By rerouting traffic, noise situation in some (urban) areas will improve
Water pollution	negative	<ul style="list-style-type: none"> - Pollution of underground and surface watercourses
Soil pollution	negative	<ul style="list-style-type: none"> - Degradation of quality of arable land - Erosion and contamination - Soil sealing
Waste production	negative	<ul style="list-style-type: none"> - Disposal of construction earth and rubble - Recovery and recycling of metals from scrapped vehicles and disposal of non-recoverable materials
Incident risk	negative	<ul style="list-style-type: none"> - Risks caused by transport of dangerous goods or hazardous waste
Influence on nearby		Motivation
urban areas	YES	<ul style="list-style-type: none"> - According to Corina land cover
Ramsar sites	NO	
Natura 2000 sites	YES	<ul style="list-style-type: none"> - According to Corina land cover
national parks	NO	
nature parks	NO	
cultural heritage	NO	

Evaluation

- SEA is useful to bring in environmental considerations in Transport Masterplanning
- The main impacts will typically come from new roads (Annex I) and rail or other PT (Annex II)
- Introducing costs related to environmental impacts and incorporating these in the Cost Benefit Analysis is a useful tool for evaluation of alternatives and for the overall analysis of the viability of the plan
- Project fiches identify the main environmental concerns for individual projects in an early stage, to be further analysed within the framework of the Environmental Impact Assessment of that project