ASSET Newsletter 1

Introduction

Balancing the requirements of environmental protection with the provision of an efficient transport system is a particular challenge in environmentally sensitive areas. Such areas have been repeatedly evoked in the context of EU and international legislation (see box) and in research. However, to date there no clear scientific or political definition, nor is there an agreed approach to address the specific concerns associated to transport related sensitive areas. The aim of **ASSET (ASessing SEnsitiveness to Transport)** is to bridge this gap by developing scientific methods for identifying areas that are particularly sensitive to the effects of transport activities and identifying policy instruments for protecting them from transport impacts.

Current legislation on sensitive areas
Sensitive areas are included in *International Treaties and EU Legislation*. These address a broad range of types of specific areas and problems (such as wetland or noise pollution in urban areas) Examples of this type of legislation are: UNESCO World Heritage Convention and the Habitat Directive, MARPOL Convention for sea areas, the RAMSAR Convention on wetland areas, and the EU Directives for Noise, Air Quality and Waste Water. Of major importance for road transport is the amended Eurovignette Directive in which the concept of sensitive areas has been used in order to justify the introduction of marks-up to tolls (up to 25%) for infrastructure financing. For *national legislation*, findings from our survey show that while sensitive areas are usually defined by relevant and existing legislative criteria, there is no specific classification for transport sensitive areas.

The Project

ASSET started in May 2007 as a 2.5 year project co-funded under the 6th European Research Framework Programme. The consortium is led by ISIS (Rome) and consists of 11 partners in 9 countries. The main outputs of the project will be

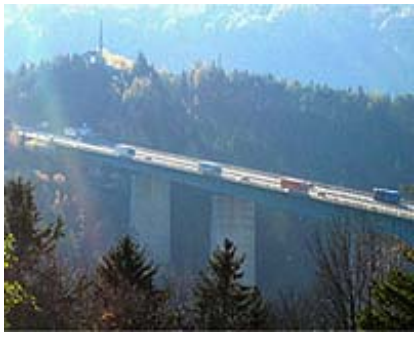
(i) a common framework of definitions, criteria and valuation parameters for Transport Sensitive Areas (TSA),
(ii) a methodology for assessment of sensitiveness in TSA,
(iii) the mapping of TSAs across the EU,
(iv) a review of policy instruments for the protection of SA, analysis of applicability to different TSA categories, identification of policy packages,
(v) a detailed assessment of proposed methodology and policy instruments for 10 case studies (mountainous, urban/metropolitan, natural/protected, coastal areas), different modes, types of traffic and geographical situations, and
(vi) policy guidelines for TSA.

This newsletter reports on the first two results which are documented in the Deliverables 1 and 2 of our projects. These can be downloaded from our website (http://www.asset-eu.org).

Definition of Transport Sensitive Areas

In this first phase of our research we have identified a list of types of areas that could be potentially sensitive to transport effects. These include:

- Mountainous areas
- Coastal zones
- Marine areas
- Unique natural resources, habitats and cultural heritages sites
- Urban areas / Agglomerations



These areas are further evaluated both according to the transport impacts they receive and their sensitivity to these impacts. Our first condition under which an area is considered to be a TSA is given by their general vulnerability, i.e. whether an area is environmentally, socially, culturally or economically sensitive because the local impacts due to a given or potential pressure are clearly higher than in other areas. Such an area is categorized as a Sensitive Area. A second condition that can lead to a TSA is when the presence of a transport route leads to particularly high pressures, e.g. higher emissions are caused due to higher gradients on roads. These areas are termed particularly Transport Affected Areas.

Our general definition of a transport sensitive area is then:

> A **transport sensitive area (TSA)** is an area where the presence of a transport route deteriorates the quality of the area clearly more than the presence of the same transport route in another area because the local impacts caused are particularly high.

A review of current research on sensitive areas revealed that different criteria have been applied to classify areas as sensitive and concrete thresholds are missing. In our next step, we developed such a set of criteria and indicators for identifying TSAs. We consider all modes of transport and assess these against selected sensitivity measures.

Criteria and Indicators for Identifying Transport Sensitive Areas

In order to define a concrete set of criteria for identifying TSAs, we analysed why pressures are higher in certain areas (drivers), how these drivers can be measured (indicators) and what thresholds can be set for the indicators to define TSA. We include only local effects and distinguish four types of TSAs dependent on the nature of the environmental pressures from transport: noise, air pollution, transport infrastructure, and (hazardous goods) accident sensitive areas. We define two checks, the first whether an area is a Sensitive Area (SA), the second whether it is a Transport Affected Area (TAA). The following table summarizes the relevant indicators and the corresponding thresholds from a review of current research on transport impacts and vulnerability for these two checks. A TSA is given if an area qualifies as SA. If an area has been identified as a TAA, lower thresholds for check 1 will be applied in order to qualify as TSA. All these indicators and thresholds will be reviewed and refined in the mapping and case study work of ASSET.

Table: Summary of all indicators for the four different effects

Indicator number	name	description	Threshold	Noise	Air pollution	Infra-structure	Acci-dents
Check 1 for the definition of SA							
11	Population density		90-percentile	X	X	X	X
12	Sensitive ecosystems	Natura 2000, UNESCO biosphere reserve	yes / no	X	X	X	X
		European Coastal Erosion Layer	yes / no			X	
13	Cultural heritage	UNESCO world heritage site	yes / no	X	X	X	X
14	Tourisitc and recreational value	number of overnight stays / km2	90-percentile	X	X	X	
15	Connectivitiy index	Measure of ease of movements	Average of Natura 2000 sites			X	
16	Tunnels		500m length				X
17	Pollution of ground water	ground water protection zone	yes / no				X
Check 2 for the definition of TAA							
21	Topography	Altitude differences	400m in 1km	X	X	X	
22a	Wind speed	Possibly frequency of wind above certain velocity	to be determined in WP3	X			
22b	Wind speed	Low wind speeds	10-percentile		X		
23	Temperature	Possibly average yearly temperature	to be determined in WP3	X			

Policy Instruments for Transport Sensitive Areas

So far, our definition of TSAs has been independent of the transport volume. However, only those TSA where damaging traffic volumes are actually present or planned are relevant for policy makers. In these areas policy measures should be taken to protect the TSA from the negative impacts from transport. Our next step was, therefore, the classification of policy instruments for transport sensitive areas. We expect that extraordinary policy instruments will be required to be identified that act directly in a short term period on pressures and impacts, given the urgency of the situation. In contrast, ordinary policy instruments may adopt a medium to long term perspective, addressing the basic driving forces behind the impacts, e.g. technological change. We define:

Extraordinary policy measures require additional instruments or more stringent implementation of existing measures in situations in which local conditions heavily affect Transport Sensitive Areas.

Outlook

Mapping: The criteria and thresholds for sensitive areas will be used in the subsequent step of ASSET where maps of the SA, TAA and TSA for Europe are drawn. This visualises the consequences of the definitions of different thresholds (for policy makers) and allows to highlight hotspots and areas of specific conflicts.

Policy Packages for TSAs: From an initial review of policy instruments, we have identified five broad categories of potential extraordinary instruments: Pricing policies and incentives, taxes, regulative measures, infrastructure, information and public awareness. An in-depth analysis of the suitability of different forms of these instruments for TSAs will be described in the upcoming Deliverable 4 of ASSET together with a recommendation for policy packages for different types of TSAs.

Case Studies: The indicators and thresholds for TSAs as well as the policy packages will be applied in in 10 case studies covering mountainous areas (Pyrenees, Alpine Crossing), urban/metropolitan areas (Copenhagen, Budapest, Frankfurt Airport, Trans-Pennine Corridor), natural/protected areas (Lipno Muhlviertel, Omberg, Manzanares River National Park) and coastal/marine areas (Mediterranean Sea). Their results will finally be used to help decide what policy measures can be considered for dealing with transport sensitive areas as well as, supporting the work on the general use of policy instruments, to be carried out in the next ASSET WP.

Next Issues of the ASSET Newsletter

The next newsletter will highlight results from our next stage of work on policy instruments. Further newsletters will report on the results of the mapping and the ASSET case studies. We will also inform you on further dissemination events and the final conference on ASSET.

Deliverables

Deliverable 1: Sessa C., Enei R., Siegele J., Scholz A. (2008) ASSET (Assessing Sensitiveness to Transport) D1: Definition of transport sensitive areas and classification. Rome

Deliverable 2: Lieb, C., Suter, S. Sánchez, A., Mateos, M. Ohlau, K., Sieber, N., Munier, B., Jensen, S. S., Hansen, K. M. (2008) ASSET (Assessing Sensitiveness to Transport) D2: Identification and assessment of sensitiveness, Bern

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