DIAMONT: Data Infrastructure for the Alps - Mountain Orientated Network Technology

Interreg IIIB-Project, Alpine Space Programme, co-financed by the EU

newsletter Nr.7

November 2006

In spring the DIAMONT partners decided to dedicate its work to urbanisation processes in the Alpine space. So far indicators were selected to differentiate between dynamic and stagnating development types and to assess which ecological, economic and social risks may occur. In the course of the project regions with similar development will be delineated and test regions will be selected. From next year on workshops will be hold to discuss instruments for sustainable regional development with regional stakeholders.

Indicators for urbanisation processes in the Alpine space (WP7)

Why Alpine towns?

The spatial development of Alpine regions nowadays is highly polarised: Remote mountain villages without any touristy potential suffer a decline of inhabitants and economic power. However, urban centres and suburban areas expand along the valley floors. Land-use conflicts flare up as residential and commercial areas, traffic infrastructure, agricultural production as well as recreation and landscape protection compete for the limited spatial resources.

The basic processes of urbanisation take a similar course in the Alps as in the flatlands, except that the problem of limited space is exacerbated in the mountains. This makes it necessary for Alpine towns to seek close cooperation both with their environs and with other towns in order to achieve a feasible spatial distribution of functions and services. In the light of the tendencies described above it is hardly surprising that Alpine towns and their development are beginning to receive more interest within the context of Alpine spatial development. Within the Alpine Convention and its protocols, Alpine towns have not received any attention so far. In 2005, however, the Standing Committee of the Alpine Conference chose "The socio-economic dimension of the Alpine Convention with particular attention to the role of Alpine towns" as the theme for its 30th meeting. CIPRA, too, is calling for measures to support towns in their responsibility for nature and landscape as well as their efforts at improving the quality of living and to encourage regional strengths and solidarity.

In the light of the scant attention that Alpine towns have received so far, the DIAMONT partners have agreed to concentrate on studying Alpine towns and urbanisation processes more thoroughly for the remainder of the

New DIAMONT collaborator (UNCEM)

Loredana Alfarè

Loredana Alfarè joined the DIAMONT team of UNCEM in November. Her role in the project is to organise the workshops in the test regions and to support UNCEM in applying the participatory process. She is working for IMONT (Italian Mountain Institute) as researcher. She is specialised in coordinating and applying the participation process in the following three INTERREG projects:

- "Innoref – Innovation and Resources Efficiency as Driving Forces for Sustainable Growth" in the frame of INTERREG III C. The project has financed eight sub-projects for a total of 31 partners establishing regional networks for a total of 556 members.
- "Progeco – Protection du territoire par le biais du genie écologique à l'échelle du bassin versant» in the frame of INTERREG III B MEDOCC.
- «WAREMA – Water resources management in protected areas" in the frame of INTERREG III B – CADSES.

She is also a member of the Scientific Committee in ALPCITY project. The project involves 12 partners from the Alpine regions. Her task is to help partners implementing the project proposals and to assist in particular the Italian regions located in north-east part of the country.

She also has been designated as expert by the Ministry of Infrastructures and Transports for writing, on his behalf, several chapters of the INTERREG IIIB Alpine Space Programme Complement (in particular the "Measures descriptions").

Content

project. There are hardly any larger metropoles within the Alpine area. Rather small and medium sized towns (SMESTOs) with less than 100.000 inhabitants form focal points for urbanisation and regional development processes. In the past such towns took on essential supply functions unlike comparable towns outside the Alps. Today they are often strongly linked with their neighbouring municipalities and form units stretching across several communities, so called urbanisation zones (PERLIK 2001, see Fig. 1). Their development varied greatly and still does nowadays, depending on natural circumstances, historical background and regional labour market. Some gain in importance and develop functions beyond the regional level – e. g. as international tourist destinations – or they become integrated into larger and expanding urban regions (dynamic development type). Others retain their traditional functions because they are situated far from other towns and centres within thinly populated rural areas ("stagnating development type"). A third group is characterised by a decline of former key sectors which have lost their relevance for the national or global market (shrinking development type).

How do indicators help describe the development of Alpine towns?

The urbanisation zones are the basis for the development of indicators within DIAMONT project. Work package 7 goes back to the scientific work of Perlik (2001), who analysed the functional linkage between core towns and its neighbouring municipalities by means of the commuter relations and derived 189 urbanisation zones in the Alpine space.

The DIAMONT indicators are meant to answer the following questions:

- Where are the dynamic developing urbanization zones situated in the Alps, where the stagnating ones?
- Is the individual development linked to ecological, economic or social problems or risks?

With these questions in mind the DIAMONT indicators were divided into two groups. The so-called "identification indicators" should on the one hand help to identify urbanisation zones (see Fig. 2). Otherwise they should allow to differentiate the urbanisation zones with dynamic from those with stagnating development and to assess the respective dynamic of the development. The "evaluation indicators" look at selected subprocesses to assess which ecological, economic and social problems and risks might be linked to an individual trend.

The selection of indicators is based on the concept of sustainability (three pillars). This is why the level of the so-called "dimensions" was introduced into the methodological concept. Within the social pillar, dimensions are for example "population", "social equity and family", "public provision and security" or "social participation and freedom". For more transparency with respect to the selection of indicators "phenomena", thus typical features that accompany urbanisation processes, were derived from literature research and expert interviews. The suggested indicators make it possible to reveal the occurence of predictable phenomena.

The DIAMONT indicators aim to,

- describe the dominant regional trends in the Alps through a carefully selected set of values and to close existing thematic indication gaps,
- differentiate if possible at LAU2 level,
- be detailed enough to allow calculation of the indicators
- and to take sufficient account of wide-spread existing efforts to develop other indicator systems.

The indicator list proposed by WP7 has a preliminary character. Intensive discussions with the DIAMONT partners will follow. Thereby the data availability will be considered in particular. The practical work in the test regions with concrete data (gathered in WP8) and the discussions in the frame of work packages 10 and 11 will show if the indicators actually are appropriate to reflect the real situation in the Alpine municipalities. In the course of these processes the suggested indicators will be adapted.

To achieve a summarised representation of the results from generating the identification indicators and in order to be able to compare municipalities or regions with each other, we suggest a visual aggregation with main trend images. Our suggestion is based on sorting through and discussing a wide range of aggregation methods. Prior to the aggregation steps will be taken to transform indicator values. The implementation of the main trend images shall also be tested in the course of the project by using available data.

Even if suitable indicators are available it is not immediately clear whether an observable trend is sustainable or not. Values and the prioritisation of objectives play an important role here and can only be decided upon within the context of a debate involving the whole of society. The work in the test regions of DIAMONT opens up an opportunity to discuss objectives with local interest groups and thus arrive at a balanced overall view of the ecological, economic and socio-cultural objectives for sustainability.

Source: Manfred Perlik 2001: Alpenstädte – zwischen Metropolisation und neuer Eigenständigkeit. Geographica Bernensia, p. 38.

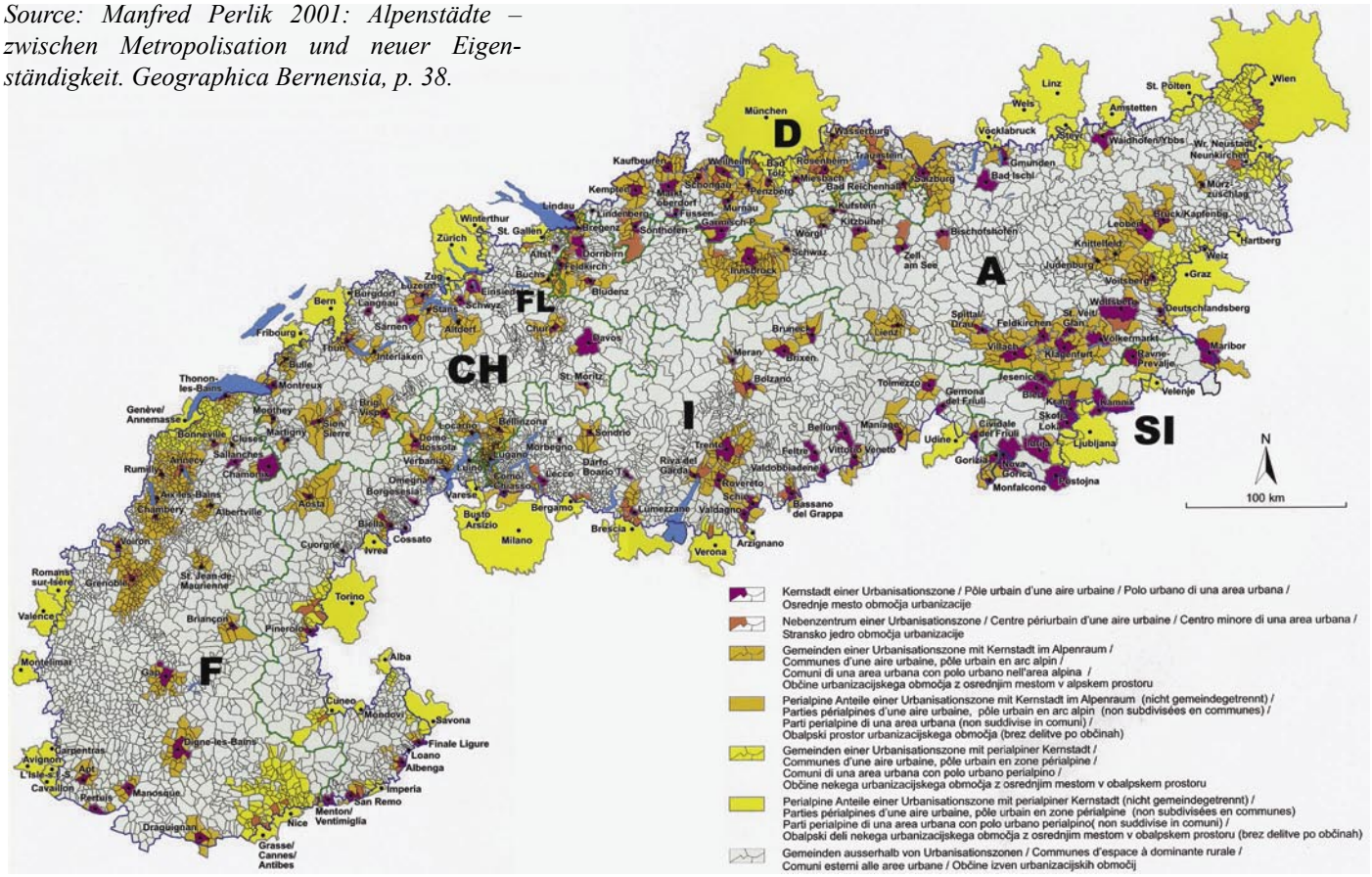

Fig. 1: Urbanisation zones in the Alpine Space.

Identification indicators to identify the SMESTOs and to delineate the urban area			
Pillar and Dimension		**Phenomenon**	**Indicator**
Ec	Labour	Strong labour market	Number of employees (S)
		Strong functional interrelation between municipalities	Outbound commuter ratio (to core city and/or in a inner-periurban zone) (S)
	Public services and security	Provision of central and administrative functions	District capital (S)
S	Population	High attractiveness of town as place of residence	Resident population (S)
Identification indicators to identify dynamically developing urban areas			
Pillar and Dimension		**Phenomenon**	**Indicator**
Ec	Economic performance and infrastructure	High importance of branches of an urban economy	Location quotient of branches of an urban economy (S)
		Increasing land take for infrastructure and settlement	Land take for settlement and infrastructure (P)
		Increasing competition of land use	Change of intensively used and profitable agricultural land (P)
	Public and private financing	Increasing competition of land use	Change of average real estate price (P)
	Labour	Strong labour market	Change of employment-to-population ratio (P)
	Innovation, technology and information	High density of communication infrastructure	Connections to telephone and internet (S)
S	Population	High attractiveness of town as place of residence	Migration balance (S)
		High potential for social interactions	Population density (S)
		Population growth in the core city	Change of resident population in the core city (P)
	Social participation and freedom	Urban renewal	Election behaviour in core cities and their surroundings (S)
	Culture	Increasing cultural relevance	Cultural events (P)
En = Environment, Ec = Economy S = Society / culture			(S) = status quo (P) = process

Fig. 2: Identification indicators (Draft: Bosch&Partner 2006).

Alpine municipalities on focus (WP8)

Mid of June the European Academy of Bolzano (EURAC) launched a survey addressing the mayors of all Alpine municipalites. The survey aims to identify regions of similar potentials and structures. This may seem a strange procedure as one could argue that for this aim the analysis of objective information, e.g. statistical or remote sensing data, should be sufficient. But regional development is not only defined by the economical, social and environmental conditions on local scale, it is also influenced considerably by the individual perception of the local stakeholders. Therefore the subjective view and estimation of sustainable regional development has been integrated in the present study.

Approximately 6000 mayors were asked about their personal point of view regarding 24 aspects of sustainable regional development grouped in three categories: economy, society and environment. Part A dealt with the estimation of the current status quo of the municipality, part B focused on the importance the mayors give to each listed aspect in their political work. Each aspect could be ranked on a range from 1 to 5 (1 = extraordinary good / important, 5= very bad/ not important) (cf. Fig 4 + 5).

Of course the content of the questionnaire was elaborated considering as much as possible the availability of national statistical data to enable a direct comparison of the subjective and objective datasets. But for the following reasons this aim could not always be respected:

- to adapt the content of the questionnaire to the target group only questions were selected which were suited to create a concise idea of the aspect. E.g. the aspect structural diversity of the municipality area was left out in favour of the aspect ratio of natural and semi-natural areas.
- the questionnaire offered the chance to include aspects which could not be analyzed by statistical data on municipality level (e.g. tolerance towards strangers and minorities or open climate for discussion).
- last but not least: from the linguistic point of view the survey was conducted in a very heterogeneous area. So the formulation of the questionnaire represented a challenge of its own kind.

The survey was conducted via internet by means of a webform. This procedure helped to minimize the risk of errors. As the Email-addresses could not be investigated for all municipalities some questionnaires were also dispatched by fax and ordinary mail.

After having sent out two reminders the rate of return is now more than 22 percent. A closer look on the return by nation reveals considerable differences between the single countries. Whereas the mayors from Slovenia, Liechtenstein and Germany answered the questionnaire quite numerously on average, the percentage of French mayors taking part in the survey is quite low (cf. Fig. 3). A reason for this may be the differing structure of the size of the Alpine municipalities. Besides another general conclusion can be drawn from the survey: the means of communication internet is not equally accepted throughout the Alpine bow.

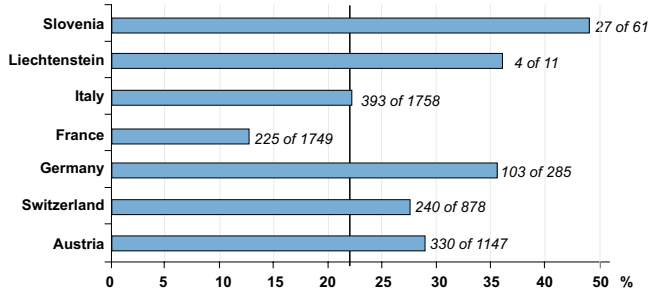

Fig 3: Return of the survey by country and average on the Alps: 22 percent (draft: Lange).

First results of the survey

A first analysis of the results shows how the mayors estimate the current situation in their municipality regarding the different aspects of sustainability.

Generally speaking the range of answers is quite narrow: it varies between 1,64 and 3,24 (considering only the average calculated on all Alpine municipalities, see Fig. 4). Within the range the economic situation is estimated to be worse than the social and environmental status quo. In the latter we find the highest values: especially the existence of semi-natural areas and the quality of water are seen very positively.

The standard deviation indicates to what degree the single datavalues differ from the alpinewide average. The lower the standard deviation, the more homogenous the mayors answered, the higher the the representativity of the Alpine average is. In the present case the aspects availability of jobs and connection to the traffic network show the highest standard deviation, whereas estimations were quite similar regarding the existence of semi-natural areas and quality of water.

The assessment of the current situation of the mayors' municipality represented the first part of the questionnaire. But how important do the mayors consider the single aspects of sustainability for their political work? The equal content of both parts of the questionnaire allows a direct comparison.

Regarding the importance of each aspect the range of estimations is even smaller as in the first part of the questionnaire (see Fig. 5). The average on all municipalities diverges between 1,69 and 2,48.

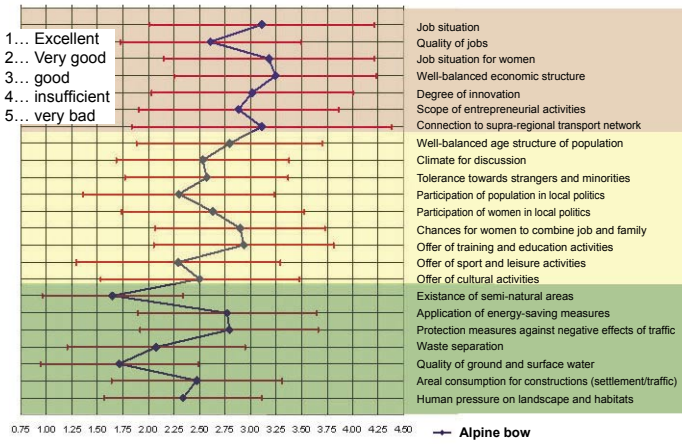

Fig. 4: Estimation of status quo of municipality by aspect of sustainability – average and standard deviation on all Alpine municipalities, n= 1325 (draft: EURAC).

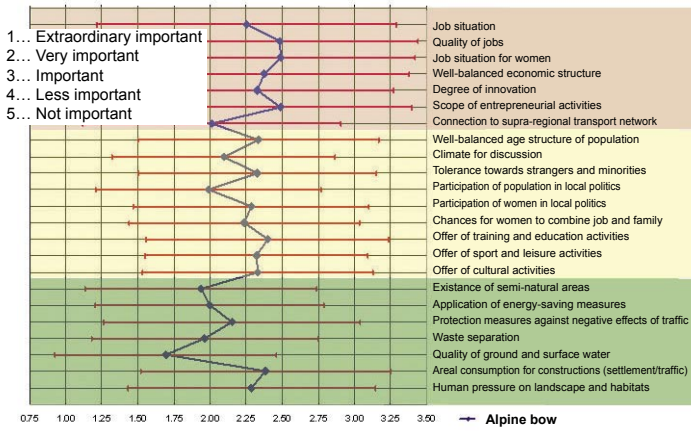

Fig. 5: Estimation of importance for political work – Alpine wide average and standard deviation, n= 1325 (draft: EURAC).

Despite of this similarly-structured range of answers the results show a clear pattern: the Alpine municipalities focus on environmental issues. Like in the first part of the questionnaire quality of water, natural/semi-natural areas, and waste recycling are heading the ranking. They are considered to be politically most important. Whereas economic and social aspect are obviously put on second place. This result is quite surprising as the analysis of part A of the questionnaire revealed that the economic situation is seen relatively problematic. The reasons for this divergence are still to be investigated. Moreover it strikes that the economic aspects altogether show the highest values of standard deviation, which means that the given estimations are quite controversially.

In general nationality does not serve to explain sufficiently the differences of estimations neither for the status quo nor for the importance of aspects. A simple variance analysis confirms that the differences between single municipalities within a country are more obvious than the differences between the Alpine nations, although the latter were significant in all cases.

Coming soon…..

After having completely analyzed the results of the survey the answers of the mayors will be confronted with the data sets from national statistics. This approach offers the opportunity to directly compare the subjective position of each municipality with its objective status quo. The detected differences between the inside and outside perception could possibly represent the basis for a better understanding of barriers or stimuli which influence the sustainable development in the Alpine bow.

New DIAMONT collaborator (AMGI)

Janez Nared

Janez Nared (AMGI, Slovenia) has joined DIAMONT project to deal with the scientific content of the WP10. He is already looking forward to gaining some new experiences about different regional policy instruments on Alpine-wide scale as well as to cooperating with the vibrant international team.

After he had finished study of geography and sociology in 2001, Janez joined the Scientific Research Centre of the Slovenian Academy of Sciences and Arts. He has focused his research on regional development, regional policy and economic geography. He has participated in different research projects as »Monitoring of the regional development in Slovenia«, »Factors of sustainable regional development of expected provincial organisation of Slovenia«, »Research as a factor of a successful development of the town« and »Appraisal of the instruments and mechanisms of regional policy in Slovenia«.

He is a member of Regional Studies Association, Ljubljana geographical society, the organizing committee of the biannual symposiums “GIS in Slovenia” and of the Statistical Advisory Committee for Regional Statistic on Statistical office of the Republic of Slovenia.

The DIAMONT "main trend" – synergies with the ESPON-Project "The Role of Small and Medium-Sized Towns (SMESTO)"

During the meeting in Ljubljana in March 2006, the DIAMONT partnership agreed on dedicating its further work to urbanisation issues, in particular to "Local centres and fringes between competition and cooperation – Steering towards sustainability". Later in the year, at the meeting in Munich on 8th and 9th November 2006, it was decided to concentrate the activities more generally on the development of urbanisation zones (up to 30.000 inhabitants) in the Alpine regions (DIAMONTs` revised "main trend"). In test regions the relevant processes will be examined, problems detected and instruments provided to steer regional development towards sustainability.

Regarding this DIAMONT main trend it seemed promising to have a look for synergies on the activities in the European Spatial Planning and Observation Network programme (ESPON), especially to the ESPON 1.4.1 project dedicated to the small and medium towns.

The ESPON was launched after the preparation of the European Spatial Development Perspective (ESDP) and is designed as an applied research programme covering a wide range of spatial issues . All projects in this programme have a clear territorial dimension and cover in general the 25 countries of the European Union, Norway and Switzerland. Project 1.4.1 "The Role of Small and Medium-Sized Towns" uses the ESPON "three scale approach" focusing at European scale (macro scale), a diversity of transnational spatial contexts (meso scale) and each national territory (micro scale).

Threefold approach for SMESTO definition and delimitation

Based on a extensive literature review concerning small and medium towns and their spatial development and results from other ESPON projects, the project 1.4.1 points out the different approaches to define a SMESTO (morphological, functional, administrative, see Fig. 6).

The analysis in the European countries shows a broad variety of definitions for urban entities, each following at least one of the three named approaches. The project sketches a way to define SMESTOs that could be used on a pan-European scale. This process of identification, delimitation and classification of SMESTOs is carried out in a case study for the NUTS3-region Villach-Klagenfurt (AT). As this process requires a complex analysis it would need high efforts to accomplish it for the whole area of the Alpine Convention, but it could be considered for application in the test regions in the DIAMONT project.

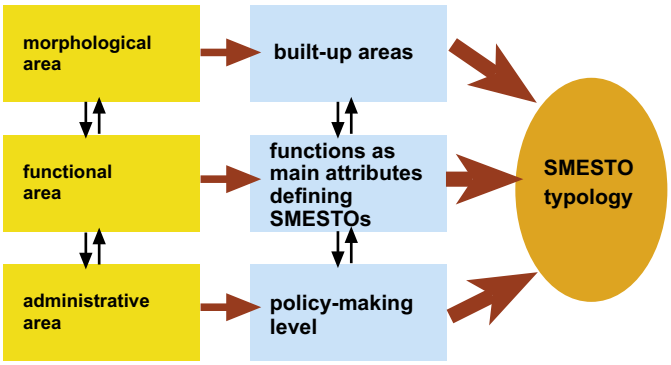

Fig. 6: From SMESTOs' functions to SMESTOs' typology, (ESPON 1.4.1 Final Report, p. 134)

Functions and roles of SMESTOs

The ESPON project has also identified diverse roles and functions of SMESTOs from different perspectives. This research is not only based on historic and state-of-the-art literature but also backed up by insights from several case studies (one of them Salzburg as medium sized town and Hallein as a small sized one). For the selection of the case studies a set of 28 hypotheses concerning the role of SMESTOs in spatial development was sent out to each country. They were finally translated in a criteria set for case study selection and deepen the general insight into European SMESTOs. These hypotheses may also enrich the DIAMONT discussion on topics in the test regions.

Typology of SMESTOs

A main objective of the study was to develop a SMESTO typology. The scope of this typology in the ESPON project is to serve as an instrument for guiding the policies. Therefore the dynamic character of a SMESTO (growth or decline) will define the SMESTOs qualitative appreciation. It was decided to base the typology on simple fundamental findings that give some indications for concrete policy targets at present but also for potentials in the long term perspective. The typology is considered as a first approach to indicate a framework of fundamental factors. This SMESTO typology may also give some guidance for the envisaged DIAMONT approach to develop an Alpine wide typology of urban centres.

Typology of regions

As the regional embeddings of SMESTOs matters, ESPON 1.4.1 proposes a typology of SMESTO regions based on a wide range of typologies of regions and territories from different perspectives found in other ESPON projects. ESPON 1.4.1. defines as main components for a typology of regions appropriate for SMESTOs (Source ESPON 1.4.1 final report, p. 129):

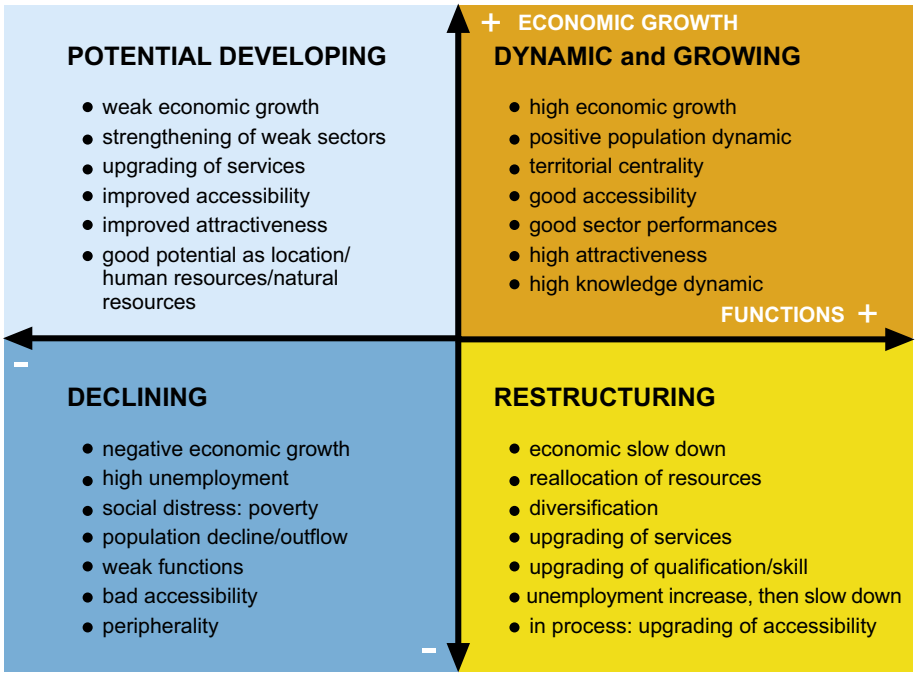

Fig. 7: From SMESTOs' functions to SMESTOs' typology: dynamic trends, decline or growing potential for a possible typology of SMESTO entities (Source: ESPON 1.4.1. final report, p. 135).

- A regional typology at NUTS 3 level, based on the spatial polarisation/hierarchy, for the positioning of SMESTO within the existing regional urban structure to clarify the spatial relations of the SMESTO in its territory, their degree of mono- or polycentricism and the hierarchy following different spatial functions;
- The relevance of accessibility and its impact on the regional economic performance;
- The population density within the region as it has a significant impact on identifying the SMESTOs as structuring elements of the region, as well as the degree of integration between urban and rural areas.

As a simplified example, the following typology of SMESTO regions was built (see table, Fig. 8).

The idea of different regional types is also included in the DIAMONT initial main trend draft "Local centres and fringes", and the ESPON exemplary typology could give an additional background for further discussion. At the meeting in Munich it was suggested to do further work within the spatial limits of the urbanisation zones (Perlik 2001, see contribution on WP7).

SMESTO-region type	Description
(1)	Densely populated region, with several SMESTOs of various size: weak hierarchy and strong polycentric structure. Good accessibility and good economic performance.
(2)	Densely populated region, but mono-centric with one large agglomeration and several SMESTOs around: strong hierarchy, lower degree of accessibility in the periphery of the region, whilst good to the metropolitan core, relatively good economic performance, but concentrated on the large agglomeration (dominating concentration).
(3)	Peripheral region, low population density, few SMESTOs, low hierarchy with surrounding rural areas, weak economic performance. The SMESTOs with smaller population numbers play a service function in the area.
(4)	Highly rural dominated regions with very low population density and one or few SMESTOs. Low accessibility and low ecnomic performance.
(5)	Rural region in central areas, with large agglomeration and few SMESTOs around: good accessibility, residential function, good economic performance.

Fig. 8: Example for a typology of SMESTO regions (Source: ESPON 1.4.1. final report, p. 130).

What is the appropriate spatial reference for SMESTOs?

Another very interesting impulse comes from the proposed indicators and the data researches for SMESTOs, which were included in a questionnaire sent out to the case-study countries. In this context the question of the appropriate spatial reference for the assessment of urban entities and their different aspects is discussed and two different approaches are shown which could be seen as complementary:

- One approach is the representation of SMESTOs as urban centre-points, which helps to reveal structural characteristics of an urban system (the relations between urban nodes).
- The other is to base the analysis on the smallest administrative entity (LAU 2), which has some advantages e.g. regarding data availability. But it is necessary to keep in mind that this approach has some weaknesses as the formula "one municipality = one urban entity" is not true everywhere. This is illustrated in Fig. 4 a-c, which shows three different types of morphological-administrative relations from the case study region Klagenfurt/Villach.

Three SMESTOs in one municipality (NUTS5)

One SMESTO across the border of two municipalities.

One SMESTO spreading over several municipalities.

Fig. 9 a-c: Relation of morphology and administrative areas; source: ESPON 1.4.1 Final report, p. 143.

The two approaches are taking different viewpoints on the identification of SMESTOs in Europe. "The first approach considers towns as nodes that structure the European territory, while the second stresses the importance of towns in the governance system and the implementation of territorial development policies, thus identifying them in groups of local administrative units (primarily municipalities/NUTS 5). The implementation of both approaches is dependent on the availability of data." (ESPON 1.4.1 Final Report p. 139) In the DIAMONT project so far we started working on the basis of municipalities, but it should be worthwhile to consider whether the other approach can complete the picture in the case study areas.

This very brief extract puts only some small spotlights on one project of the ESPON research programme – doubtless some other ESPON projects would deliver also more interesting background information for DIAMONT. All final and interim reports of the about 30 different projects are available for free on the ESPON website www.espon.eu. Additionally several data are accessible (as far as data rights are not infringed) in the HyperAtlas which can be drawn from the internet or explored in a Web-GIS from the ESPON site.

We think the value of the ESPON project 1.4.1 lies in its preparative character. It provides an excellent base of literature review, suggests some new methodological approaches and shows pathways to do further research work. Certainly it is an important additional input for our further work in DIAMONT, especially in the test regions.

Results of the 9th Alpine Conference

On November 8th/9th 2006 the Ministers for Environment of the Parties of the Alpine Convention met in Alpbach/Austria. They dealt especially with the consequences of climate change, one of the most urgent threats for the ecosystem of the Alps. In the following years the Alpine states will develop adaptation strategies and distinguish the Alps as a model region in climate protection ("climate change declaration"). Another declaration was adopted with respect to "society and culture".

Safeguarding the water balance was another important issue. A report dealing with water supply changes in Alpine regions as a consequence of global warming shall be presented until 2008. Main focus shall be the occurrence of natural hazards, like floods, mudflows, partial lack of snow and the melting of glaciers. The mandate of the "platform natural hazards (PLANALP)", an international network of decision makers and experts from the Alpine countries, was extended until 2010.

The draft of the "report on the state of the Alps" with a focus on transport issues was presented during the meeting; it will be released in June 2007. The working group on "transport issues" reported further on the results of a study investigating how the good experiences of the "Brenner action plan" could be transferred to seven other railway corridors in the Alps.

Some years ago, the foundation "pro natura – pro ski" in Liechtenstein developed guidelines for auditing ski resorts. These were already adopted by the 8th Alpine Conference as one possibility to implement the protocol on tourism. The contracting states are now asked to support the voluntary appliance of the audit approach in ski resorts. The Austrian Federal Minister Josef Pröll awarded a prize to four model regions for the development and implementation of the audit.

Representatives of other mountain regions were invited to stimulate the international dialogue. The cooperation area of the Alpine Convention (Carpathian and Caucasus Mountains as well as Central Asia) shall be extended to the Balkan Mountains in the future.

On November 9th the rotating presidency of the Alpine Conference was transferred from Austria to France. The French Ministry informed the representatives that ecotourism, climate change, biodiversity and transport issues will be chosen as key activities for the next two years.

Finally, the Italian Marco Onida was elected as General Secretary for the next four years, the Swiss forest engineer Regula Imhof was nominated as Vice General Secretary.

Source of informationen (German website): http://www.bmu.de/int_umweltpolitik/weitere_multilaterale_zusammenarbeit/doc/38178.php.

The climate change declaration can be downloaded (in German language) at DIAMONT Homepage (see public relation, newsletter).

diamont calendar

January 25th to 27th 2007: 5th project meeting in Grenoble/F

November 29th 2006: coordination meeting of WP7/8 in Innsbruck/A

November 8th/9th 2006: 4th project meeting in Munich/G

November 13th 2006: Submission of 4th "pogress reports"

4th accounting period in DIAMONT: March – August 31st 2006

web-site

The DIAMONT web-site provides up-date information on the project. **http://diamont.uibk.ac.at**

contact information

Leadpartner and official responsible:
Leopold Franzens University of Innsbruck (LFUI)
Institute of Geography, Innrain 52, A-6020 Innsbruck
Contact:
Univ.-Prof. Dr. Axel Borsdorf
Phone: 0043-(0)512-507-5400
Email: Axel.Borsdorf@uibk.ac.at

Dipl.-Biol. Sigrun Lange
Phone: 0043-(0)512-507-5413
Email: Sigrun.Lange@uibk.ac.at

Scientific project leader:
Univ.-Prof. Dr. Ulrike Tappeiner (EURAC, LFUI)
Phone: 0043-(0)512-507-5923 or 0039-0471-055-301
Email: Ulrike.Tappeiner@uibk.ac.at

Dr. Erich Tasser (EURAC)
Phone: 0043-(0)512-507-5978
Email: Erich.Tasser@eurac.edu

Dipl.Geogr. Christina Seidl (EURAC)
Phone: 0039-0471-055-319
Email: Christina.Seidl@eurac.edu

Co-financed by EU - Interreg IIIB, Alpine Space