(INstruments and NEtworks for developing logistics towards Sustainable Territorial Objectives)

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Internal report on key driving elements, visions and paths for SDL strategies

Contents

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1. Executive summary

This internal report constitutes the Deliverable N° 5 of the INNESTO research project.

The report aims at underlining key driving elements that connect the results of the three main tasks performed in the five local case studies involved in the INNESTO project: Local Context Analysis (LCA), the District Logistics Analysis (DLA) and the Local Scenario Workshops (LSW).

The report presents considerations on how to improve the SDL approach and tools for carrying out new SDL projects in the future, supported by the European Network for Sustainable District Logistics (ENSDL) and the Internet-based "SDL.development" system with clear orientations stated by the EU Charter on Sustainable District Logistics. Both the Network and the Charter were launched by the Final Conference held in Arezzo (Castello di Poppi) the 28th and 29th of June 2004.

This report refers to other basic documents of the SDL approach:
- a Discussion Paper, which provides the theoretical framework for a new perspective in the logistics domain;
- a Handbook, which provides the operational framework giving useful instructions on how to carry out a SDL project in other local contexts of the European Union;
- a Paper on Stakeholder Involvement, which suggests methods to mobilise local actors and to promote their participation in a SDL project.

The correlation between the Local Context Analysis (LCA), the District Logistics Analysis (DLA) and the Local Scenario Workshop (LSW) in the five local areas concerned by the INNESTO-project led to the following main working hypotheses:

- A sustainable accessibility plan for the Casentino Valley (the case study in Italy).

- Virtual networks to increase transport efficiency in the region of Brabant (the case study in the Netherlands).

- Cross-border inter-modal cooperation between public and private actors in the region of Trier (the case study in Germany).

- Global and local logistics between small and medium sized enterprises in the Viborg County (the case study in Denmark).

- Renewable energy and logistics in the region of Vega de Guadalquivir (the case study in Spain).

The complete description of each case study and the results of the three major tasks - the Local Context Analysis (LCA), the District Logistics Analysis (DLA) and the Local Scenario Workshops (LSW) – are present on the "SDL.Development" system.

Each working hypothesis was articulated in a series of specific courses of actions.

The present document is a summary of the application of the SDL methods, procedures and tools, as well as a comparison between the above-mentioned case studies.

The second section deals with the Local Context Analysis and was assembled by Ruggero Schleicher-Tappeser, of EURES. The third section deals with the District Logistics Analysis and was prepared by Michiel van der Leede and Ad Rosenbrand of NEA. The final section is dedicated to the Local Scenario Workshops performed in each case study and was assembled by Thomas Budde Christensen, Leif Gjesing Hansen & Lise Drewes Nielsen of Roskilde University. Filippo Strati only acts as a final assembler of their writings.

A general consideration should be made on the "SDL.development" system.

The online system was not available when most partners carried out their LCA, DLA and LSW. The results were put into the system later. With slight improvements in the editing tools, the system could considerably facilitate the SDL/SWOT analysis, the selection of indicators and the collection of data.
However, some hours of initial training are necessary. The system considerably speeds up structured analyses. However, some minor improvements in the editing tools would be very useful. Better visualisation tools would be very useful.

After 30 months of experimentation, capitalising on the experiences gained in the five local study areas of the INNESTO project, some basic lessons and suggestions can be formulated as an overall result. They refer to all the documents elaborated by the INNESTO team but specifically to the present one, the Handbook and the Paper on Stakeholder Involvement.

The following lessons and suggestions serve to carry out other SDL projects, stimulated by the European Network for Sustainable District Logistics (ENSDL).

The SDL approach is fully based on putting in value the richness that derives from diversity (economic, socio-cultural and environmental).

To meet this expected result, the SDL approach and tools are flexible to be adapted to different local contexts. Flexibility requires consistency in methods and instruments. This aim requires, of course, time and intellectual and operational resources (financing included).

The SDL approach gives unity to the concepts and the methods, but they should be applied in a differentiated manner in each local context to allow stakeholders to create their own good practices.

The ingredients of the general SDL framework (e.g. the number of SDL aspects and indicators) should be selected and combined to arrive at the hypotheses of innovative actions according to the specific characteristics of a local context and to the topics taken into consideration by the relative SDL project.

The full utilisation of all the SDL aspects is generally necessary when the territorial characteristics and logistics issues concern several policy fields; when a limited number of issues emerges, it is possible to utilise a selected number of SDL aspects.

The scheduled work plans and all the SDL procedures should be utilised in a flexible way according to the main hypotheses emerged from the Local Context Analysis (LCA) and the District Logistics Analysis (DLA).

The research efforts should be concentrated in a feasible way, acting on the basic interests of the local stakeholders and simplifying the originally scheduled steps and procedures.

The three phases of Local Scenario Workshop (see section 3) can be further simplified and backcasting (from the future to the present) techniques can be adapted to SDL / SWOT performed by the participant stakeholders.

A specific technical training is necessary to utilise the "SDL.development" system and e-learning methods should be provided in the next future; this will be a task (e.g. tutorial exercises supported by simple modules and examples) to be developed by the European Network for Sustainable District Logistics (ENSDL).

Flexibility in the formation and management of the local groups (e.g. a combination between Local Advisory and Project groups) can be useful in some cases, as well as small groups or enlarged Local Scenario Workshops.

A large variety of stakeholders is necessary when the purposes of a SDL project concern a close relationships between logistics issues and several policy fields of territorial planning.

A core group of stakeholders should be identify when a SDL project needs to be carried out in a short time and, therefore, it is necessary to work in a fast and efficient way, as well as to combine different interests, expertises and professional roles.

The ongoing adaptation of the local groups is necessary to arrive at a well-balanced involvement of a variety of stakeholders.

The involvement of public authorities as key members is of a paramount importance, since alliance with public authorities helps to overcome difficulties.

The integration of competences coming from the research side with those typically offered by local development agents and facilitators is needed in order to permanently motivate key persons and associations of interests.

The traditional culture of the transport and logistics domains, where women have limited access and few opportunities to manage high levels of decision-making, does not favour their involvement in the stakeholder groups (Local Advisory and Project Groups). Therefore the problem can be partly solved in the Local Scenario Workshop where the final debate on the future perspectives can be organised ensuring a fair composition between men and women participants.

2. Local Context Analysis

Outline

The way in which the Local Context Analysis was carried out strongly depended on the initial setting of the project. This chapter characterizes these different settings, looks at the experiences with the SDL/SWOT analysis, the formulation or action hypotheses and with quantitative indicators. The lessons, which are drawn from this comparison for the further development of the system, include the suggestion to distinguish between different types of projects and to formulate corresponding libraries of questions and indicators. Another suggestion is to add a new main task called Analysis of Programme Components (APC) in order to have a clear distinction between LCA, DLA, LSW and very specific action related considerations.

Differences in the initial settings

Many of the differences in the form of the LCAs can be explained by the differences in the initial setting of the pilot projects.

Italy
In the Italian case (Casentino) there was a strong promoter of the project (the province of Arezzo, acting also as partner in INNESTO). The main aim was to carry out a broad analysis of the district and to derive strategies from it. Even though all the six aspects of the SDL / DYNAMICS framework were utilized, analysing the objectives of the pilot project shows that the main emphasis was on

- Enhancing problem understanding (D1)
- Open collective learning (D2)
- Creation of a shared vision (D4)

The local supporters of the project had no clear initial hypothesis on what should be done. The Local Context Analysis had an important role in the whole pilot project.

Germany/Luxemburg
In the pilot project in Germany/Luxemburg (TriLux) there was also a strong promoter of the project (the city administration of Trier). At difference to the Italian case, there was a clear hypothesis about what should be done: to set up a new cooperation in the logistics field. In terms of the SDL Dynamics, the emphasis of the project was clearly on:

- Negotiation and co-decision (D3)
- Client orientation (D5)
- Result orientation (D6)

The local actors involved in the final project had no major interest in the Local Context Analysis; they were convinced to know the situation quite well and were striving for concrete results. Therefore, the support for the LCA was weak. As the project promoter and EURES were looking for a concrete project, large parts of the LCA efforts did non concentrate on getting a broad overview. Basically the LCA was carried out in parallel with a strong emphasis on finding an interesting project, which would make sense in the overall context.
Moreover, in the case of Germany, before moving to the Trier/Luxemburg area there has been an intensive effort to set up a pilot project in the cross-border region of Southern Baden /North-west Switzerland / Alsace. Also here parallel efforts in LCA and DLA concentrated on finding a suitable practical project and building a corresponding LAG. However these efforts were not successful.

The Netherlands
In the pilot project in the Netherlands (Brabant) there was some support from the province but much less than in the first two cases. There was also an initial hypothesis. In terms of the SDL dynamics the emphasis of the pilot project was on:

- Enhancing problem understanding (D1)
- Creation of a shared vision (D4)
- Result orientation (D6)

A long record of cooperation of the project partner with the province considerably facilitated the analysis and data access.

Denmark
In the case of Denmark (Viborg) it had been much more difficult to find strong support for the pilot project. There was also no strong hypothesis of a concrete project to be initiated. In terms of the SDL dynamics the project concentrated on:

- Enhancing problem understanding (D1)
- Creation of a shared vision (D4)

Previous work in the region facilitated the Local Context Analysis by the project partner, but there was no strong local support for and extended LCA.

Spain
In the Spanish case (Vega) the pilot project had a quite strong promoter who had also an initial hypothesis (treatment plant for organic waste) but without a viable concept. In terms of the SDL dynamics the emphasis of the project was therefore on:

- Enhancing problem understanding (D1)
- Creation of a shared vision (D4)
- Client orientation (D5)
- Result orientation (D6)

During the course of the project, provincial officers changed. The LCA was essential for developing a new perception and different options for territorial governance.

Comparing the approaches

The SDL/SWOT analysis

All partners carried out quite an extended SDL analysis. The most extensive analysis was made in the Italian case (Casentino Valley). Only in this case the SDL/SWOT analysis was in detail elaborated and discussed with the local actors. In the other cases the actors were involved to different degrees. Not all did use the Social Potential and Dynamics aspects. In all cases the SDL/SWOT analysis was considered to be very useful for gaining an understanding of the situation – whether it was used by the researchers/consultants themselves or directly in discussion with the local actors. However, the distinction between the context (to be treated in the LCA) and the logistics issues (to be treated in the DLA) was not always clear. The analysis questions should be formulated more precisely.

The Action Hypotheses

Most partners formulated action hypotheses, at least for the ORIENTATION aspects. However, the role of these hypotheses was different according to the project setting (see above). In some cases, as in the Casentino Valley, the hypotheses served directly as a basis for the later construction of an action plan. In other cases the hypotheses helped more to enrich an initial action hypothesis. For details on the later use of the hypotheses see the chapter on the DLA.

The Main Indicators

The way in which main indicators were collected and used differed strongly. Data gathering was generally difficult and tedious. In all projects, using the SDL/SWOT analysis for gathering expert opinions was considered to be more effective for getting a good overview on the region than chasing for detailed data. However, a collection of basic data was considered to be essential in all cases, and – if available – specific data often helped to corroborate or refine the qualitative analysis. The most exhaustive data collection and later discussion with local actors was carried out in the Casentino Valley. On one hand, the direct involvement of the Province as project partner and previous minor projects with a similar approach considerably helped to gather data until now not available for a small district not covered by usual statistics. On the other hand, there was a considerable interest of the province administration and the local actors to have and to discuss these data. However, the reporting method of the LCA did not provide a format for interpreting and commenting these data other than the parallel SDL/SWOT analysis. In some case more specific comments to single data would have been useful. In the other cases, the interest of the project promoters in detailed data was much less developed. In Trier/Luxemburg for example publicly available statistics provide quite a large range of general data and the actors were not interested to collect more in the framework of this pilot project.

Lessons from the application of the LCA in five diversified contexts

Concerning the Local Context Analysis methodology

There is a need to clarify the relation between the context to be described in the Local Context Analysis LCA and the logistics related issues described in the District Logistics Analysis DLA. Revising the questions introducing to the SDL/SWOT analysis can do this. In some projects it could be useful to deliberately carry out in parallel:

- the LCA (Local Context Analysis, general perception of the territory)
- the DLA (District Logistics Analysis, perception of general logistics issues in the territory)
- an APC (Analysis of Programme components, more detailed analysis of already identified structures, institutions, companies that will play a major role in the envisaged action programme)

The APC is a new main task to be inserted in the INNESTO procedure that we are proposing here. The distinction between LCA, DLA, LSW and APC could help to clarify the roles of the single analyses. The emphasis on one or the other would be different depending on the type of SDL project.

For the delimitation between LCA, DLA, APC and LSW, for the depth of the LCA/SWOT analysis, for the procedure for establishing the LCA and for the choice of quantitative indicators, different kinds of projects should be considered. On the background of the INNESTO experience a distinction between the following types could to be useful:

- SDL open territorial strategy project (as the Casentino Valley pilot project)
- SDL targeted public project (as the Vega project, large infrastructures etc.)
- SDL targeted private project (as the TriLux project)
- SDL sectoral exploration project (as the Brabant and Viborg projects)

In cross-border regions a single overall profile is problematic. A combination of several profiles could be useful.

Concerning quantitative indicators

Using the SDL indicators was a first attempt and lessons for the further development of the INESTO tools can be summarised as follows:

- Extensive efforts in finding and analysing quantitative date are not necessary in all kinds of project. Different sets of indicator definitions should be provided in order to meet the needs of different kinds of projects.
- A minimum set of easily available basic indicators should be defined and information should be provided about their meaning and use, as well as about known data sources (public European and national data bases).
- A larger collection of indicators should be defined on the basis of the pilot project experiences. The meaning, the use and probable data sources should be indicated.
- From this larger collection, specific indicator sets should be defined for the different project types (see above)
- Guidelines should be provided for the selection and interpretation of quantitative indicators.
- Examples for the use of single indicators should also be provided. The collection of good examples could grow with a growing experience stock of the SDL network.
- A format should be defined for giving an explicit interpretation of groups of indicators. Growing experience could provide examples also here.
- Comparisons with other areas and time series can considerably help in interpreting data. This should be considered in defining the indicator sets and writing the guidelines.

3. District Logistics Analysis

Outline

After the completion of the Local Context Analysis each of the partners performed a District Logistics Analysis on their local case study regional. The purpose of performing this DLA is to discover the main characteristics of the material flows and the business performances. By using data collection techniques such as questionnaires, this DLA proposed some correlations between the LCA hypotheses and DLA findings.

As stated, an important element of the DLA is the correlation between the logistics analysis and the LCA hypotheses. The DLA findings are (partly) based on the results of the analysis of a questionnaire or interviews of the logistic flows of the case study.

Each partner adopted a different approach to create the DLA, but with the same basic approach and objectives. We report the comparison of the five DLA's these different approaches. A remark must be made for the Trier case, where the LCA and DLA are combined to one report. Comparing this case study with the other four has proven to be difficult, but common elements have made this comparison possible.

Each partners modified the original DLA structure to best meet their case study requirements. The following pages describe several of these modifications in relation to the overall approach.

Denmark

RUC added additional analysis to the overall DLA applied in the Danish case study in the Viborg. This included "A synthesis of logistics flows in the industrial furniture district of Viborg County" which gave an in-depth analysis of logistical flows and organization of the local furniture industry of the region. The intention of this was not only to reach a more quantitative and descriptive type of analysis, but also to provide some possible explanations for the actual findings on the logistical flows. This is performed by looking more closely into the logistical decision-making at the local furniture-producing firms in the Viborg County.
A specific analysis of logistical flows within the furniture industry and the local logistical competencies was thoroughly investigated. According to RUC, additional data was required in the proposed DLA to identify data concerning the environmental effects of the logistics flows and organization. As an example, the available public statistics do not present data that reflect the environmental "burden" of specific transport and logistics chains as for example the furniture transport chains. The furniture producing and transport firms contacted by questionnaires and interviews either do not hold relevant data or keep the data in an aggregated form. The lack of detailed data caused problems when using them in the DLA. The results of a survey conducted by the "Institute for transport studies" in 2002, which tried to assess the significance of environmental issues related to freight transport among firms located in Viborg County, are used to solve this problem of missing (or disaggregated) data. With this additional analysis, RUC provides a more in-dept and clear analysis of the Viborg County, which helps to better understand the results of the DLA.

Italy
In the Casentino study case a special attention was give to utilise the SDL / SWOT analysis techniques in the development and analysis of the DLA information. In particular, the SDL / SWOT analysis of the ten aspects was applied to the regional profile on Orientation and a description of how Sustainable District Logistics (SDL) focuses the corporate strategy towards each of the ten orientators. Second there is the SDL / SWOT analysis of these descriptors (aspects). This analysis is similar to the SWOT analysis in the LCA but this time the analysis focused on the district logistics. This additional analysis aided researchers in obtaining a better understanding into the District Logistics of the Casentino valley.

The Netherlands
Brabant case focuses some key characteristics of the region regarding the surface area, inhabitants and position of Northern Brabant as well as an outline on the characteristics of the transport companies in this province. With this extra information there is a clear perception of the Brabant region can be made. The information forms solid background information for the DLA.

Germany
The DLA approach in the Trier case is substantially different from the other four cases. EURES combined the LCA and DLA analysis into a single report. This decision was based on interviews the operators. From the results it was concluded that a systematic separation between LCA and DLA in the Tier case was not appropriate.

Spain
Grupo Entorno has presented a modified approach in the Vega de Gualdalquivir case study. The main focus of their work as the new methodological approaches used for the analysis of material flows and particularly waste in the Gualdalquivir valley. Existing knowledge set a new way of organizing the analysis in an integrated form without separating the technological social, economic and institutional aspects. INNESTO's contribution is a tool for analyses and in particular for decision-making. This results focus on specific analyses:

- The analysis of the effects of a power plant of biomass and the environmental industry
- The analysis of the economic structure and of the agents involved in the management of the agriculture
- Analysis of the social and institutional structure
- Analysis of the policies and instruments of planning
- The analysis of the technological options
- Synthesis on the effects expected from the development of the integrated logistics of the waste of the biomass

These different paragraphs give a new view on the use of the INNESTO methodology.

Conclusions

Each of the five partners has adopted a flexible approach to the DLA data analysis. This resulted in a modification of the basic methodology that was originally proposed. However, the wide variety of the case studies required that the basic approach be modified to meet the objectives of quantifying the logistics flows within each area.

Correlations

The structure of the cases of Brabant, Casentino, La Vega and Viborg is quite similar. They all start with the LCA hypothesis with a short description, expected results and organisational measures. Next, all analysis approaches focus on the correlations between the DLA findings and the LCA hypothesis of innovative options. In the Casentino Case specific hypotheses are created on the basis of the DLA findings. The resultant list of hypothesis was found to be related to those determined in the original LCA.
RUC, in the Viborg Case also gives a short description of main findings correlated to main hypothesis for the DLA findings. NEA, in the Brabant Case, gives in her 'correlated findings derived from the DLA' options to improve the weak points in the findings. These recommendations give suggestions for taking future action. With regard to the layout there are also differences. The Casentino Case gives separate boxes including the LCA hypothesis and DLA findings, as did Grupo Entorno in the La Vega Case.

Questionnaires

The determination of material and energy flows was approached in all case studies through the use of questionnaires and interviews. The basis of these questionnaires was determined during one of the project workshops and was consolidated in the operational guidebook. Each partner modified the questionnaire to best meet the information requirements for their overall analysis. The logistics flows analysed in all the case studies concern incoming, outgoing, internal and transit flows, except in the La Vega case. The Viborg analysis was divided into two schemes for the logistical flows in the furniture production. These schemes gave a clear outline of actual transport flows as it starts from wood and ends with the customer as it is going in Viborg County. Similar to the Brabant case study, RUC focused on the location of the transport and furniture firms in Denmark. On the other hand NEA acquired information on the distribution of the different commodity groups in Northern Brabant and their related flows. This is done by three descriptions of logistics flows in a percentage of total tons transported. In the Casentino case, there is a clear focus on separating the supply, distribution and total freight logistic flows by ton/kilometres and by a percentage of total ton/kilometres.

The questionnaires are the base of the DLA analysis. Differences and similarities in the questionnaires among the five study cases affected the specific results of the DLA while the overall approach remained similar. While the finalized report was focused in each case study, it should be noted that much of the information from the questionnaires was not directly used in the final DLA. This may be due to the fact that in several cases the questionnaires were set out before the LCA and its resultant hypothesis were finalized.

The correlation between the LCA hypotheses of innovative options and the DLA should allow for the completion of the first (LCA) prior to the construction of the second.

There are still some particular aspects in the questionnaires that each case study utilised. For example, NEA utilised three different questionnaires on three different subjects in their DLA report on the Brabant region: Transport modes, Difference between road transport and intermodal transport, Modal shift. NEA also used information available from the NEA COST INDEX.
SRS and Province of Arezzo included questions on the assets and liabilities statement and profit and loss account of companies in the Casentino Valley.
In their Viborg County Case RUC extended their questionnaire with questions on the opinion of the respondent.
Grupo Entorno included questions on the special aspects of the goods to be transported in the La Vega del Quadalquivir region.

Conclusions

All the cases provided an extensive outline of the logistics flows in the different regions, with the exception of the Spanish case study. All these cases focused on transportation in the whole region and sometimes a focus on particular sector.
All the partners had a different view on their DLA, but the goals of INNESTO were nearby in mind. The questionnaires were the starting point of the different District Logistics Analyses and set a base for this analysis.

Business performance / logistics organization

Another part of some DLA was focused on the analysis of the performance and the characteristics of the business organizations present in the case study area. This analysis usually focused on firms, which are the pivots in a particular sector, no matter what kind of sector this might be. There were little similarities on the economic actors that were analysed from the business performance point of view in the case studies.

Viborg
RUC focuses on the logistical organization of the furniture industry in Viborg County. This was done by analysing the development of the number of different firms within this sector. They develop an analysis of the localization and development of the Danish furniture industry from 1972 to 1992, along with information on the size (expressed in number of employees) of the firms and the variation of overall density over this 20-year period.

Casentino
Logistics flows in the Casentino Case study are complemented by the analysis of 'Business performance' (focusing on logistics) of 37 of the major businesses in the study area. This analysis is structured according the SQM/SDL orientators. The aggregated and anonymous results concerning the business performances are presented. The results are based on the methodology of aggregating financial information according to the PLEASE[1] and SEALES[2] models.

Brabant
The performance aspects of the NEA analysis of the Brabant region focus on the performance of the Dutch transport companies in Northern Brabant regarding three different points:
- Capacity utilization
- Costs
- Profitability

La Vega de Gualdalquivir
In the analysis of the technological options, Grupo Entorno analyses the logistics organization of the agricultural waste as one of the two fundamental aspects considered by the DLA. In the La Vega de Gualdalquivir Case there are some limitations on this topic, which developed into a set of priorities related to biomass.

Conclusions

Each case study required a modified approach to the study of the local economic or logistics operators. Each partner utilised the same framework while making specific modification to meet research objectives. All the partners kept in mind the goal of the INNESTO project when making the DLA report as a result of the questionnaires.

[1] PLEASE: Profit and loss economic account with social and environmental dimensions.
[2] SEALES: Statement of economic assets and liabilities with environmental and social dimensions.

4. Local Scenario Workshop

Outline

The aim of the Local Scenario Workshops (LSW) in the INNESTO-project was to develop qualitative scenarios for future sustainable logistics in five selected regions. Furthermore the LSW served to reinforce and debate the main hypothesis of the Local Context Analysis and District Logistic Analysis.

The five LSWs were conducted on the basis of a methodological approach developed in the INNESTO-project. In each of the LSWs the methodological approach was adapted to the specific context.

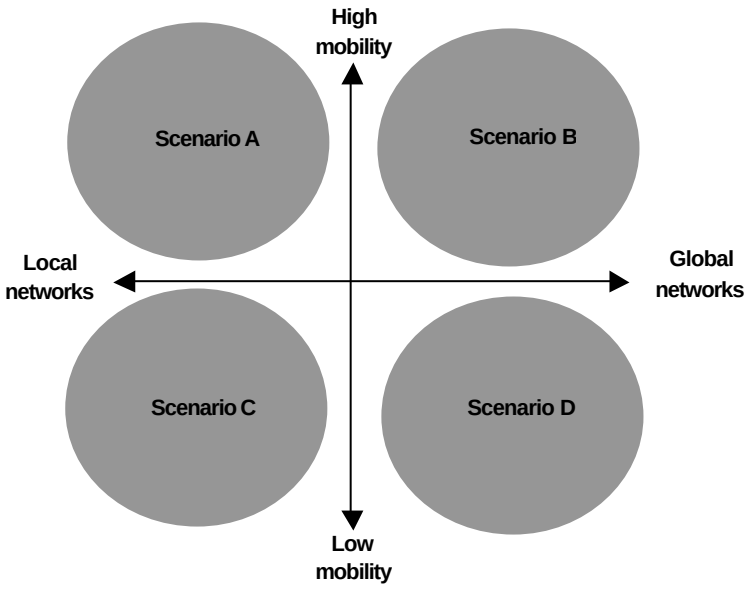
The purpose of the LSWs

The Local Scenario Workshop approach was used with different purposes throughout the INNESTO-project.
In the German and Dutch cases the LSW was used in an action oriented manner. In the German case the LSW was used to debate models for future cooperation between private companies and public authorities and in the Dutch case a special "action team" was established as a result of the LSW. The main task of the Brabant action team will be to set up plans to prevent the region of Brabant from loosing importance as a logistical link in a European transport network.
In the Brabant LSW the focus was narrowed to potentials for inland waterways whereas the Italian LSW focused more widely on a lager range of problems concerning sustainable district logistics. The Viborg LSW focused on the link between development in the transport sector in Denmark and the influence on the furniture industry in Viborg County.
In all the different cases the LSW were used to reinforce, debate and validate the hypothesis of the Local Context Analysis and District Logistical Analysis.

Themes in the LSWs

In the Danish and Italian LSW's specific themes were chosen to guide the discussions among the participants in the workshops. In the Italian LSW two frame scenarios were chosen: Integration of economy and environment and integration of the three equity aspects from the SDL-framework of INNESTO.

In the Danish LSW the participants were asked to debate the future scenarios of sustainable regional logistics and transport networks in the region of Viborg County. The scenarios were developed along dimensions of high/low mobility and local/global networks. In the phase of realization the participants was asked to relate their suggestions for realization of the scenarios to the following model using the two dimensions:



Participants in the LSW

The numbers of participants in the LSW's were varying from 5 (Germans case study) to 22 (Dutch case study).

	NGO	Public servants	Research institutes or universities	Companies	Organizations	Total
Italian LSW	9	4		1	4	18
Dutch LSW		12	3	5	2	22
German LSW		2		3		5
Spanish LSW		1		2	2	5
Danish LSW		2	3	2	1	8

The participants involved in the LSW's came from private companies, research institutes, universities, local- regional and national authorities, branch associations and NGO's. In most of the LSW's the majority of participants were either local or regional stakeholders. In the Danish LSW a more national oriented approach was followed and therefore only one of the participants came from the regional area under study. The differences in the number of participants and the differences in the participants' backgrounds also illustrate the diversity in the set-up of LSWs in each case study. Whereas the German LSW had a very limited number of participants and a very action oriented approach the Italian LSW had a large number of participants with a broad diversity of backgrounds and the LSW had a more explorative approach.
In all the LSW the participants were reported to have reacted positively to the LSW.

The methodological framework of Scenario Workshops

The methodological framework of scenario workshops is a mix of three elements:

- An action oriented approach where the local actors are involved in the process of change and development
- The workshop is facilitated in keeping specific rules of supporting creativity and communication
- The workshop is facilitated in keeping specific rules of communication in order to create equalized communication and eliminate the influence of power relation in the communication between the actors

To support these three basic elements the workshop is divided into three phases: a phase of critics, a phase of vision-making and a phase of realization. The three phases are established to secure a free and open debate.

Each of the phases is organized by a specific set of rules. In the phase of critics the rule is "we are consequently negative". In the phase of vision-making the rule is "Reality is out of function. We are situated in a perfect world, where everything is possible" and in the phase of realization the rule is "We keep our wishes and dreams, how can they become reality".

The use of the LSW methodology in the INNESTO case studies

In all the INNESTO-cases the LSW methodology was adapted to the specific context of the case study and in most cases carried out in one day.

In the Italian and Danish cases the LSW methodological framework was more or less used as described in the previous section - though smaller adjustments were made. Both the Danish and Italian LSW's used a structure with "phase of critics", "phase of vision-making" and used backcasting techniques in the "phase of realization".

In the Danish case the participants were divided into groups and asked to relate their visions to a scenario for year 2030. The participants were asked to imagine a future scenario for 2030 where the utopias had become reality. In this phase, the participants debated which actions needed to come through and which stakeholders had to be involved in realising the visions.

In the Italian LSW the backcasting technique was adapted to the SWOT methodology and the results of the LSW-SWOT were compared with the SQM/SDL SWOT analysis in a plenary debate. In both the Danish and Italian LSW wallpaper was used to organize the key words in the different phases (see Illustration 1).

The Dutch and German LSW's were less structured by the framework of the scenario workshop methodology and primarily organised as thematic workshops. Instead of using the scenario workshop framework, the cases in the Netherlands and Germany used the LSWs to work out a platform for cooperation and concrete action plans in relation to the results of the SQM/SDL SWOT analysis.

In the Dutch LSW the workshop was organised by three themes defined by the NEA research team:

- Do you (i.e. the participants) agree with the conclusions on the (logistical) future of N-Brabant (as derived from the DLA) in which the linking position of the province is under threat?
- If so, do you want to alter this future (the conclusion stands under the condition: "all DLA- model settings remained the same", or, in other words: no special stimulation activities are undertaken)?
- If so, what can we (i.e. policy-makers, economic actors, etc. in N-Brabant) do to alter this future (thus: altering the (model) settings by adopting certain policies concerning active (economic and/or social and/or political etc) stimulation)?

The three questions were used to initiate discussion among the participants in order to identify alternative strategies for the region of Brabant.

The integration of the LCA, LDA and LSW

In all the LSWs the main hypothesis of the LCA and DLA were presented to the participants and used to draw a picture of the situation in the regions and thereby used as a reference during the workshops.

The Italian research team decided to briefly introduce the participants to the purpose of the INNESTO project but not to introduce the results of the LCA and DLA until the second of two sessions. Thereby allowing the participants to identify problems and solutions without influence from the research team.

In the Danish LSW the session started with a brief presentation of the INNESTO-project, the partners and the key findings of the LDA in Viborg County. The result of the LSW was a development of three alternative scenarios reflecting different challenges for realising a strategy aiming at promoting sustainable regional logistics and transport networks. Each alternative scenario involved different elements of the original hypothesis for innovative action developed in the LCA and elaborated in the DLA.

In the Dutch case the LCA was used to describe problems the region is facing. The fact that major transport flows are bypassing on the edge of the province of Brabant without adding value to the province was debated in plenary sessions during the LSW. The main hypothesis I of the Brabant case LCA was: "By setting / upgrading of the Virtual Transport Company, the Province of Brabant will create added value to the community and improve the quality of the environment". This hypothesis was debated during the LSW. In the phase of realization the first main hypothesis of the LCA (that the region of Brabant should evolve into a Virtual Transport Company) was used to set up a special action team.

In the Italian LSW the problems that was highlighted by the LCA and DLA were used to debate the future of the Casentino Valley. The problems, which were highlighted, were the lack of coherent approaches, methods and tools to evaluate and plan logistics according to a holistic view.

Major issues were a high rate of energy consumption in the economic fabric of the region - especially in transport; an unbalanced modal split with a prevalent (nearly absolute) role played by road both in freight and passenger transport; a high pollution due to road transport with the related impact in terms of social and environmental costs; a lack of integrated logistics and inter-modal transport system as well as a low degree of ICT (Information and Communication Technologies). These issues reflect a lack of services for all typologies of local inhabitants and for a flowing connection between local communities within and outside the Valley.

In the German case the LSW was used to work out specific models for cooperation between the participants as a result of the LCA and DLA. In the LSW the SWOT analysis and the general description from the LCA was presented to the participants.

The Results of the LSWs

The main points of the discussions in the Dutch LSW were: Overall transport policy of the Province of Brabant; active stimulation of transition of transport performance from "own account" to "professional" haulier organizations; position of the Province of Brabant in the international transport chains; relation between (the ports of) Rotterdam and Antwerp and the Province of Brabant; strengthening the Provinces position on the market of (semi) manufactured products. In the Brabant LSW the conclusion of the workshop reinforced the main hypothesis of the LCA. The infrastructure is suffering from congestion and major transport flows are passing the region without adding value to the community. Therefore a special action team was established. The role of the action team is to clarify the relation between the results of the exploration and to define some first global strategies to "alter the future".

In the Italian LSW the results of the LSW were used to reinforce the main hypothesis of the SQM/SDL SWOT analysis.

The results of the Danish LSW were three future scenarios for the transport sector in Denmark and the furniture industry in Viborg County. Two of the scenarios took opposite views on the relation between marked and regulations. One of the scenarios dealt with the possibilities for integration of environment and economy in a scenario where use of networks between transport companies had strengthen the flexibility for the transport sector. Another scenario dealt with the possibility spatial planning and of public investments in terminals and infrastructure to promote growth in intermodal freight transport. In the plenary debates the role of different stakeholders in the transport sector was a crucial element during the whole workshop. Furthermore the enlargement of the European union and the outsourcing of furniture industry to eastern European countries was a central theme.