

Critical analysis of the ESPON project 2.4.1:

Territorial Trends and Policy Impacts in the Field of EU Environmental Policy

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For UMS RIATE, Paris

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1 Introduction

For understanding the ESPON project 2.4.1, it has to be seen in the context of the other projects of the ESPON programme. The terms of reference were written in June 2005, the final report was finalised in December 2006. Therefore its question and objectives were built on the results of the ESPON coordination project 3.1 “Integrated tools for European Spatial Development” and other ESPON projects which had dealt with the issue of Territorial Impact Assessment TIA, mainly the earlier policy impact projects of programme priority 2. From the beginning it was conceived so as to cooperate strongly with ESPON project 3.2, in charge of coordinating ESPON projects from January 2005 to December 2006 and itself developing a TIA methodology.

The present critical review was based on the documents published on the ESPON website, i.e. the final and the interim report as well as the terms of reference. These did not include the Annexes referred to in the final report.

2 Main results of the report

2.1 The terms of reference

The [terms of reference](#) given by the ESPON management committee for this project are quite ambitious. The project was supposed to include 3 main elements:

*(1) **Presentation of territorial trends, situations and structures** at European scale in relation to the main environmental issues of relevance for the development of regions and larger territories. The presentation should rely on a review of existing literature related to environmental trends and policies at EU level and be based on existing sources and geo-referenced data, indicators and information systems. It should display the state of existing environmental knowledge relevant for territorial analysis, as far as possible presented on European maps.*

*(2) **Proposals on feasible Territorial Impact Assessments (TIA)** of EU Environmental Policy based on a test (case studies) related to 3 major elements of European environmental policy, such as habitats, biodiversity, air quality and water management. The model for TIA conceived for the 3 cases should take into account relevant policy assessment tools at European level as well as the experiences gained carrying through territorial assessments of EU sectoral policies by other ESPON projects.*

*(3) **Recommendations and proposals on future applied research** projects linked to environmental trends and EU Environmental Policy that can foster the integration of environmental concerns into territorial development strategies at different scales (European, transnational/national, regional/local scale). Improvement of knowledge on regional diversities of the European territory shall therefore be reflected in the proposals.*

In addition to quite specific requirements concerning these areas, the TOR give guidance concerning Indicators to be developed and relative data collection, concerning Maps to be drawn and concerning relations to other ESPON projects. Especially a strong coordination with [ESPON project 3.2](#) is required.

2.2 Overview on the report

The final project report is basically structured along the requirements of the terms of reference.

Chapter A presents the results of environmentally relevant European policy documents and identifies areas of EU environmental policy which have a territorial relevance or a spatial planning dimension. The conclusion of the chapter lists the policy areas that will be considered in the Territorial impact assessment case studies in Chapter C.

Chapter B reviews models and tools related to the envisaged Territorial Impact Assessment of EU policies. It first looks at impact assessment guidelines and directives of the EU, then reviews the findings of ESPON projects and finally looks at various scientific impact assessment approaches before making some general considerations on the chances of political realisation of TIA schemes.

Chapter C is the centrepiece of the report, proposing a Territorial Impact Assessment (TIA) methodology and presenting five case studies in which this methodology has been tested. At the end it makes recommendations for a successful application of the TIA approach.

Chapter D, according to the terms of reference, defines a series of new indicators deemed to be useful in the context of the proposed TIA and presents corresponding data and maps. Propositions for indicators to be developed in the future are presented in chapter E.

Chapter F, finally, makes proposals for future applied research themes.

Overall, the report structure is logical, but the effective connections between the different chapters are not always convincing. An introductory part explaining the background of the report and clearly formulating the project objectives would have been very helpful for the reader and could also have improved the integration of the different parts. The division of labour and responsibilities between this project and the coordination project 3.2 is not always clear.

2.3 Introductory reviews and their conclusions

The initial review of some EU policy documents concerning spatial development, environment and impact assessment gives a kind of a general background. However, without clear guiding questions, the result remains rather diffuse. One would expect a summary of EU policy targets in these areas which could guide the development of a Territorial impact assessment methodology. Subsequently, the territorial relevance

and the explicit spatial planning dimension of environmental policy areas are presented in a table without really explaining how these assessments were made (p. 19). Based on this table some policy areas are selected for analysis in the case studies (Chapter C). (Climate change – the top environmental issue – has not been included in this list, although this would have been most interesting both concerning climate change adaptation issues – which vary considerably across Europe – and concerning the impact of climate change mitigation policies – which also differ considerably as the difficulties in defining a common strategy have shown.)

The following discussion of EU impact assessment guidelines and directives (chapter B1) is very short and gives no consistent methodological hints for a TIA methodology. More extended are the notes on relevant ESPON projects (B2). However, also here, a systematic approach, which could provide a synthesis and methodological input to the project, is largely missing. The interactions and trade-offs discussed in project 2.1.1 concerning territorial impacts of transport policies could provide an insight into the difficulties of impact modelling. The excellent background provided in project 3.1 (FR, part C, p. 425) is only partly summarised. Project 3.2, with which a close cooperation is required in the TOR, is referred to the extent it was possible at a point in time when the project was not yet concluded.

The third introductory review concerns existing scientific impact assessments and projects. It does not seem to reflect the advancement of discussions in the last decade as e.g. it proposes to simply transfer the approach of impact pathway analysis stemming from environmental impact assessment models to territorial impact assessments – without mentioning the much larger complexity to be considered when dealing with extended socio-economic systems and without reflecting two decades of discussion concerning strategic impact assessments.

Finally, the conclusion of chapter B, which reflects on the chances of political realisation of informal or binding TIA, seems not to be appropriate at this place of the report where one would expect a conclusion of the reviews providing an input to the development of a methodology in the following chapter.

2.4 The adopted TIA model

The Territorial Impact Assessment methodology adopted in project 2.4.1 and described in chapter C2 is a simplified version of the approach developed in ESPON project 3.2.

The methodology is based on the following elements:

- Concerning the objectives of territorial development against which the assessments are to be carried out, the final report only mentions the triangle which is then used throughout the following analysis: territorial quality, territorial efficiency and territorial identity are the three dimensions of the overall objective

of territorial cohesion. This approach is developed and described in more detail in the ESPON project 3.2 final report and in Camagni (2006) – it is part of the TEQUILA model. These sources also specify a set of criteria for each of the three dimensions. Project 2.4.1 does not make this differentiation.

- The impact model behind the TEQUILA approach is corresponding to a multi-criteria analysis. The assumption is made that a series of cause-effect chains between policy elements and territorial criteria can be identified, quantified, weighted and summed up so as to give a unique measure for the overall impact of the policy on the different dimensions (territorial quality, territorial efficiency and territorial identity).
- For constructing the cause effect relationships, project 2.4.1 additionally operates with a set of so-called general territorial trends which are not documented in the final report (reference to the unpublished annex and to project 3.2 where they cannot be found in the final report, see p. 74 of the interim report of project 2.4.1)¹ and an additional set of specific environmental trends (not documented either). The results of the scoping phase are presented as diagrams of cause-effect chains.
- The assessment is carried out in two steps: In a first step, the Potential Impact (PIM) is determined at the EU level (first level). In a second step, based on the results of the first one, the Territorial Impact (TIM) is evaluated at the level of a specific territory (second level).
- The Potential Impact (PIM) is determined on the basis of expert opinions: the impact of a policy element on a (territorial or environmental) trend and the impact of the trend on one of the three objectives is given a value between -2 and +2 (only -2, -1, +1, +2 allowed). Multiplying the values of the two steps of a cause-effect chain gives the PIM value.
- Indicators only come into the play when assessing the specific territorial impact TIM: each of the cause-effect chains leading from a policy element to a territorial objective needs to be associated with an indicator.
- The result of the assessment at the territorial level is a value for the TIM for each territory and each of the three “objectives of territorial development” – presented in the form of maps. This value is obtained by summing up – over all cause-effect chains – the products of the potential impact PIM, the normalised indicator (=1 for the maximum value) and a weighting factor (determined by local experts).

This approach differs from the TEQUILA method described in project 3.2 (final report, vol. 5) in the following points:

¹ The final report makes reference to the unpublished annex. The list can be found on p. 74 of the interim report (http://www.espon.eu/mmp/online/website/content/projects/243/383/file_610/1.ir_2.4.1.pdf). In the project 3.2 reports the concept of territorial trends and the list cannot be found.

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- The TEQUILA method does not explicitly use the notion of cause-effect chain. The potential impact PIM is defined for every combination of a policy dimension (or policy element) and a criterion. The PIMs for every combination of a policy element with a criterion could in principle be derived from empirical data of a multi-criteria analysis without postulating specific cause-effect chains.
 - With a weighting factor TEQUILA intends to combine the impacts of several policy elements (p.70) – however, the final report does not explain how exactly this is done. Summing up the impacts of different policy elements with a weighting factor is a deliberate decision for a specific model which assumes simple additionality of policy elements and does not take into account feedback effects or synergies between several policy elements. Project 2.4.1 uses this mathematical model and additionally postulates to establish a list of cause-effect chains which then are used to choose indicators. (The remark on page 54 of the report, saying that this approach was inspired by the systems analysis approach of WBGU, is misleading: systems analysis and also the quoted WBGU report insist on the importance of feedback loops and synergies – explicitly at difference to a simple adding up of single cause-effect chains.) Project 2.4.1 does not discuss the relative importance of the different policy elements – in the territorial level assessment it simply sums up all results for the different cause-effect chains.
 - In the TEQUILA method, the relative importance of the criteria is expressed by a weighting factor at the abstract level – independently from the specific region (p.70). Project 2.4.1 does no such explicit weighting at this territory independent level, as criteria it only uses three objectives deemed to be of equal weight.
 - At the territorial level TEQUILA uses a sensitivity factor which is a function of a single indicator – it is composed of two parts, one expressing the vulnerability/receptivity of the territory to the impact and the other standing for the desirability of the criterion in the specific circumstances of the territory. In project 2.4.1 this idea seems to have inspired the two-step construction of a cause-effect chain at the general level which gives hints for the definition of more complex indicators.
 - Therefore, in the TEQUILA approach there is a clear methodological distinction between the abstract level (PIM) and the territorial level (TIM): All weighting considerations concerning criteria are made at the abstract level, while at the territorial level all additional factors regard regional specificities (policy intensity and policy applicability) with the exception of the mentioned sensitivity factor based on an indicator. In contrast, in project 2.4.1 the indicator value is multiplied by a not further defined weighting factor for each criterion which is assessed by regional representatives. As a consequence of this undefined multidimensional weighting factor left to local judgement the resulting territorial impact of a policy element could become meaningless.

Overall, the TEQUILA method has a consistent, rather abstract approach – which however is not carried out transparently in the example provided in project 3.2 – whereas project 4.2.1 is a less consistent simplification combined with the concept of cause-effect chains using a set of territorial trends and undefined weighting factors. As far as understandable from the final report, the theoretical foundation of the TIA approach developed in 4.2.1 seems somewhat fuzzy.

2.5 The pilot assessments carried out

The territorial impact assessments carried out with this approach in project 2.4.1 show a series of difficulties both in the applicability of this approach to environmental policies and in the actual way the assessments were carried out. As already project 3.1 pointed out, one main problem of such an overall quantitative approach – especially in the wide field of the environment – is the difficulty to define meaningful indicators for which suitable data exist.

As explained in the introduction to the assessments carried out at the EU level (p.61), project 4.2.1 therefore simply excludes some cause-effect-chains from the assessment while still summing up the results of the remaining chains. This can produce questionable results.

In the example of the ex-ante assessment of civil protection policies, the system was originally described with 15 cause-effect chains. Eventually nine were used with the help of four indicators of which three indicated the extent to which the policies were carried out (e.g. percentage of inspected establishments in relation to overall amount). Why such a choice was made for an ex-ante assessment is not explained in the report. No structural indicators for the industry structure, for the contribution of risky industries to the GDP, or for population density were used as one might have expected. The results presented in the maps do not seem to contain a new message – apart from the weak enforcement of the policy.

The tentative ex-ante assessment of the Water Framework Directive presents a more convincing structure of cause-effect relationships. However, because of missing data it has not been carried out at the EU level.

Concerning Nature and Biodiversity Policy, only nine cause-effect-chains were identified, of which six were used with the help of six complex two-dimensional indicators. While the single indicators are explained in the following chapter, the information provided in the final report is not sufficient for understanding the full procedure resulting in detailed maps. It would be interesting to discuss how rather negative impacts on territorial efficiency come about in a series of regions. Some aspects which are potentially relevant to the sub-criteria for territorial efficiency (as presented in project 3.2), such as tourism industry or urban sprawl, have not been considered. A detailed discussion of the results, trying to draw conclusions for the policies under examination, is

missing. Overall this seems to be the most carefully executed and most interesting TIA example of the project.

An interesting further use of parts of the results is made in the following assessments in the Slovenian case study. It explicitly confirms the problems with indicators and data.

The Finland case study on Civil Protection Policy confirms the critical remarks made above on the EU-wide TIA for these policies.

In the Emsland case study all three policy areas were analysed using the same story-lines but with more indicators and data, as they were locally available. Moreover, at difference to the other TIA's, the importance of the different cause-effect-chains was weighted. Involving local experts, more insights were gained concerning the need to consider long-term and short-term effects and concerning regional specificities of the cause-effect-chains. The good match of the feedback from local decision-makers with the TIA values obtained was taken as a confirmation of the potential of the proposed TIA approach. However, without knowing the procedure in detail, one might argue that the weighting of cause-effect chains, done by local experts, has considerably contributed to this matching.

The Spanish ex-post assessment concerning the EU Nature and Biodiversity Policy impacts on the construction of a highway crossing a national park is only explained in rather general terms.

2.6 Conclusions for the TIA approach

The conclusions of chapter C proposing a territorial impact assessment method and presenting pilot applications make some interesting points. However they do not pose or answer the central question whether this method is really useful for supporting and improving the development of EU environmental policies. From the critical remarks above one could draw the following conclusions:

- The presented approach as used in the case studies is under-complex compared to the socio-environmental systems and the elaborated policies in question. Looking at the complex processes and detailed discussions that have led to the formulation of these policies, it cannot be expected that results based on such simple models could help to improve policies.
- For a more adequate representation of the complexity in view of the goal of the TIA, the extended scientific and practical experience and debate concerning modelling offers a variety of options, among which the following:
 - introducing a much larger number of cause-effect-relationships including cross-links and feedbacks
 - making use of a more differentiated system of criteria (such as in project 3.2)

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- starting from a more differentiated disaggregation of policy elements
 - putting more emphasis on the discussion of single cause-effect-chains and their ramifications than on an overall assessment figure
 - going back to a mathematical approach using multi-factor-analysis data while dropping the idea of mapping cause-effect relationships
 - using educated guesses where data are missing instead of dropping important cause-effect relations
- Looking at the impacts of environmental policies from a perspective of sustainable territorial development, involves a large number of dimensions and mechanisms which are less understood and more complex than in other policy fields since the perception of these issues is rapidly changing. For many desirable indicators, adequate data are missing. Moreover, many important mechanisms are influenced by human perception and creativity and therefore are difficult to quantify – such as innovation, attractiveness of a territory, risk perception or short-term/long-term resp. intergenerational trade-offs. The idea of reaching a meaningful assessment result expressed in one or three figures therefore seems inadequate. Rightly, project 3.1 proposes to speak of Territorial Impact Analysis instead of Territorial Impact Assessment (part C, p.425).
 - The unavailability of reliable quantitative data has proved to be one major problem for the proposed TIA approach. A more systematic and flexible approach for including educated guesses where data are missing seems most important.
 - In order to make meaningful comparisons between the impacts in different territories in the EU, the use of expert judgements at the different levels has to be very systematic.
 - The strongly varying quality of the case studies seems to be partly due to the incoherent and not well-explained theoretical approach of the proposed TIA method. A better understanding of what is to be done seems to be an important prerequisite for good assessments

As a consequence, a combination of four approaches might be promising for improving the methodology:

1. allowing for a higher complexity of assessment models
2. putting the emphasis on a learning process using partial assessments as scenario tools
3. ensuring a high degree of understandability and transparency concerning the interplay of assumptions concerning causal relationships, indicator data and educated guesses of experts at clearly defined different levels
4. improving data availability for important indicators

Examples for such endeavours are numerous in the literature of the last 20 years. However, developing a comprehensive approach really answering the questions listed

in the minimum requirements for a TIA developed in project 3.1², and delivering meaningful results for improving policies is a huge endeavour. The author of this critical review has been involved in developing more qualitative assessment systems which were partially underpinned with hard data in a second phase.³ Especially the system 'SQM – Sustainable Quality Management' intended very similar objectives compared to the TIA endeavour.

2.7 The presented indicators

Chapters D provides a series of interesting indicators contributing to the most useful overall ESPON endeavour of developing a comprehensive and well-documented indicator database for territorial development.

Reviewing these indicators in detail would be beyond the scope of this paper. Also, it would not be possible without having access to the annexes of the final report which have not been published on the ESPON website. From the final report the link of these indicators to the foregoing TIA's is not intelligible.

2.8 The research recommendations

Chapter F develops a very useful list of research objectives by taking the TIA experience as a starting point and looking here and there a bit beyond. Without question, all listed priorities are valuable. However, the methodology how they were developed and even more the scope of issues this list refers to, remains somehow diffuse.

When talking about research priorities for supporting policy development in a territorial development perspective the following four aspects might deserve more attention⁴:

² See interim report of project 4.2.1, p. 70.

³ See e.g.: Schleicher-Tappeser, R. / Strati, Filippo (2004): Structural Funds and Sustainable Development – The SQM Approach. *Innovation, The European Journal of Social Sciences*, Vol 17, No 1, 2004 pp.75-94. (http://www.schleicher-tappeser.eu/documents/CIEJ_17_1_06lores.pdf)

Schleicher-Tappeser, R. (2003) *Sustainable Quality Management pour les Fonds structurels – Expériences en Midi-Pyrénées / France*, Bruxelles, Rencontre annuelle de la Commission européenne avec les autorités administratives allemandes, Bruxelles, 13 novembre 2003. (http://www.schleicher-tappeser.eu/documents/Schleicher_SQM_Midi-Pyrenees_fr.pdf)

Schleicher-Tappeser, R. (2002): Assessing Sustainable Development in the EU - The SQM approach in the context of structural funds. *Greener Management International*, Issue 36.

Schleicher-Tappeser, R. & Strati, F. (1999) *Progress towards Sustainable Regional Development. A review of results from the EU Research Programme on Human Dimensions of Environmental Change*, Luxembourg, Office for Official Publications of the European Communities. (www.eures.de/de/download/SRD_review_final3_99.PDF)

Schleicher-Tappeser, R., Lukesch, R., Strati, F., Sweeney, G. & Thierstein, A. (1998) *Instruments for Sustainable Regional Development. The INSURED Project - Final Report.*, Freiburg, EURES Institute. (http://www.eures.de/de/download/insured_en.pdf)

Moss, T., Fichter, H., Glimm, D. & Kraemer, C. (2000) *Regional Pathways to Sustainability*, Luxembourg, Office for Official Publications of the European Communities

⁴ See footnote 3, last source

1. The understandable and most important effort to supply better quantitative data and related concepts in order to support a territorial perspective in European policies, should not lead to neglecting the importance of understanding the dynamics of territorial development. Describing the preconditions for innovation and creativity, for discovering synergies and for predicting risks is at least as important as more static descriptions with rather conventional cause-effect chains.
2. We are living in a social, political, economic and ecological environment characterised by increasingly rapid changes with witch decision-makers and the large public have increasing difficulties to cope. Therefore, explicitly developing improved learning mechanisms for coping with change is becoming more important. All kinds of assessments should be explicitly designed to support such learning processes clearly specifying the addressed users, the intended process and the political context.
3. Introducing a territorial perspective, in many discussions has broadened an environmental or an economic concern towards a more comprehensive concept of sustainability. The concept of territory is an integrative concept, territorial objectives are sustainability objectives. Therefore, many present discussions under the label of spatial/territorial development could take advantage of earlier discussions on sustainable development. This could also help to clarify the relationship between SEA and TIA.
4. Optimisation of policies often occurs in policy packages containing a series of elements which not as single ones but in their entirety bring about balanced results for different target groups and territories. Such packaging is often considered to be a result of the art of political bargaining and marketing. Assessment procedures should more explicitly consider the packaging in the policy-making process appreciate synergies and complementarities and point to negative side-effects.⁵

2.9 Conclusion

The method of Territorial Impact Assessment TIA, especially in the field of environmental policies, has still a long way ahead for becoming a useful tool for improving EU policy development. Not only the details of the methodology, but also the aims of the TIA and its conditions of use, need to be reconsidered. Project 2.4.1 has provided a series of interesting results. However, the rich experience in elaborating them is not fully reflected in the final report – future projects intending to further develop the methodology should be able to make full use of the unpublished annexes.

⁵ For policy packaging see chapter 11 in: Banister, D., Stead, D., Steen, P., Akerman, J., Dreborg, K., Nijkamp, P. & Schleicher-Tappeser, R. (2000) *European Transport Policy and Sustainable Mobility*, London, Spon Press

The endeavour to develop an integrated Territorial Impact Assessment tool should be re-examined in its orientation and its objectives in order to set realistic targets for the next development phases.

3 Lessons for the French context

There are no very specific lessons for the French context. Different kinds of impact assessment of policies have been carried out in France since many years.⁶ The French tradition of planning and “prospective” has been supportive for promoting a systematic approach in ex-ante evaluations. Since more than a decade, European regional policies have promoted efforts and experience exchange concerning ex-ante-policy evaluation throughout Europe. In France, the DIACT is one of the most important organisations in this field. Given the complexity of the issue and the necessity of involving a large number of institutions in the improvement of data collection, many projects in this field are too short for really bringing substantial progress. Usually, the ‘policy cycle’ of policies and programmes has a high time pressure at the beginning, when ex-ante evaluation could make a difference and strong political interests are dominating. Therefore, the long-term effort of ESPON is most valuable in this context and the comparisons made possible by a European prospective provide an opportunity for giving more weight to a transparent approach in comparing stated objectives and policies in order to develop more efficient policy approaches. The ESPON approach merits to be strongly supported, especially also in the tedious process of improving the collection of comparable data.

⁶ See e.g.: Corinne LARRUE (1999). Evaluation environnementale préalable des contrats de plan Etat-Région et documents uniques de programmation 2000-2006. Guide méthodologique. Ministère de l’aménagement du territoire et de l’environnement. Paris.