Institutional Analysis on Sustainability Impact Assessment by Policy Makers

SENSOR Project Deliverable Report 7.2.1
The Integrated EU project SENSOR aims to develop ex-ante Sustainability Assessment Tools (SIAT) to support policy making regarding multifunctional land use in European regions. Land use represents a key human activity which drives socio-economic development in rural regions and manipulates structures and processes in the environment. At the European level, policies related to land use intend to support the efficient use of natural resources and to improve socio-economic developments. The project is financed by the EU 6th Framework Programme. Project duration is four years, starting in December 2004. The project is carried out by a consortium of research institutes, led by the Leibniz-Centre for Agricultural Landscape Research (ZALF).

This document contains the report on the Institutional Analysis conducted in the first phase of the project run time. This was undertaken to uncover current practices of policy assessment in the European Commission in order to adapt the tool to the requirements of the end user. The report is to support the insertion of a tailormade Sustainability Impact Assessment Tool (SIAT) into its institutional environment by enhancing its institutional fit and to increase the possibilities for its application at EU level.

Keywords

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Institutional Analysis on Sustainability Impact Assessment by Policy Makers

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Executive Summary
This report is to support the insertion of the SIAT (Sustainability Impact Assessment Tool), into its institutional environment by enhancing its institutional fit. Any policy assessment procedure encounters existing implicit or explicit policy assessment practices. Its introduction necessarily reconfigures them (institutional change). In this context the report aims to uncover the current practices of policy assessment in the European Commission.

- The SIAT may be used as part of the European Commission’s Impact Assessment practices. The quality of Impact Assessments varies across sectoral administrations and policy domains. ‘Good’ Impact Assessments are integral to policy development. They are undertaken with strong engagement of the Commission and stakeholders and they undergo the Impact Assessment steps iteratively. Only Impact Assessments regarding salient new regulations, substantial revisions or expenditure programmes require in-depth modelling (principle of proportionate analysis). Salience depends on the type of issues and interests a proposal impinges upon and their political significance at the European level.

- Individual desk officers have different reactions to Impact Assessments. DGs and units that are intensely involved in Impact Assessments recruit economists for Impact Assessments or establish units that provide back-up capacity.

- The quality of the Impact Assessment is of increasing importance for getting a policy adopted by the hierarchy and other European legislative bodies.

- Formal and informal in-house (inside of and among Directorate Generals) and external participation and consultation (stakeholders, concerned parties and implementing bodies) are undertaken. Additionally the gathering of expertise plays a significant role.

- Desk officers have a preference to get the Impact Assessment procedure right in order to guide policies to adoption, motivated by a career advance which implies gains in remuneration and prestige. They have considerable influence on the substance of proposals. They are instructed about content-related sectoral preferences by their colleagues, the hierarchy and the ‘client group’ of the sectoral Directorate General through participation, consultation and knowledge gathering. Superiors often have less technical know-how but more sensitivity for the political aspects of a proposal.

Desk officers apply a heuristic of criteria (partly codified in guidelines) that indicate how to steer policy development and Impact Assessment:

- Does the tool answer questions regarding significant impacts? Will these questions emerge during the policy development process (e.g. SIAT assesses: development of land use, landscapes, multifunctionality)?

- Issues and policies shaping land use are relatively clear to Commission officials. Nonetheless, desk officers seem to have limited interest to do this kind of assessment. Principally, DG Agriculture has considerable interest in assessing land management and socio-economic implications of its policies.

- Concepts such as “landscapes” and “multifunctionality” are little understood across the overall Commission. The concept “landscape” is associated with aesthetics instead of ecosystems. The concept of “multifunctionality” is only known to those who are involved in agricultural policy making and it seems to be discredited (Garzon, 2005:16).
The impression arises that some of this scepticism towards the concept is based on semantics and lack of an agreed definition.

- Does the tool produce plausible results which withstand intuitive scrutiny or expert knowledge? Desk officers occasionally check directly for plausibility with experts rather than with (potentially biased) policy makers or stakeholders.
- The tool must either be user-friendly or it must be well explained to desk officers, so they are able to explain the results of an assessment themselves.
- Transparency of the overall assessment process and the tool are key. This includes the data, the scenarios, the assumptions made and the calculations. Desk officers prefer tools that have a good track-record in scientific and preferably political and EU assessments.
- Numerical data is of increasing significance in European policy making and generally favours modelling where this is technically justifiable. Data sources have to be reliable (e.g. official European data sources Eurostat or ESPON).
- Mapping is welcomed as a way to represent data.
- Regions have a marginal role in policy development and assessment so far.
- The Commission itself models priority impact dimensions of policies. e.g. market development (DG Agriculture) or macro or sectoral economic development (DG Regio, DG Enterprise). Reputation, flexibility, reliability, and time constraints are decisive here. DG JRC runs more specialised models of strategic relevance. Consultants or experts are contracted for specific one-off studies.
- In order to assure that the above mentioned criteria are met by the tools, desk officers highlight that they are open to advice on modelling tool development.

From the wider field of Integrated Assessment studies with which Impact Assessment is associated and the study of modelling tool use in other contexts we can derive the following:

- The SENSOR consortium should strive to be aware of issues external to SIAT development. E.g. INSPIRE, role of regional actors, the relationship between science and policy, the changing approach to Impact Assessment by the European Parliament and the Council, the role of land use, landscape and multifunctionality issues in different sectoral policies and agendas such as competitiveness, environmental and social interests.
- Depending on the specific policy domain, it should be evaluated whose interests the SIAT may impinge upon. Specific actors may be included deliberately to enhance the acceptance of SIAT results. Actors that may threaten the credibility of the assessment due to a specific bias they represent may be better be excluded.
- Consultation and participation should be limited, balanced and focussed on the representations and organised interests at the European level.
- Participation could also entail an institutionalised “plausibility check” of the modelling results. This would address one of the concerns of European desk officers.
- The frequency of application of the SIAT will most likely be relatively low. Depending on its complexity, it is unlikely to be used by desk officers themselves. Running the SIAT should include training activities, including stakeholders and desk officers, to increase legitimacy and credibility.
- To enhance the openness of actors to the SIAT it may be useful to use concepts, definitions, and methods that are in line with those used in the respective European policy domain.
- For introducing the SIAT into Impact Assessment and the various policy domains, an elaborate communication and information strategy should be launched. It should promote the perception of the relevance of land use and landscapes for policies.
1 Introduction

This report considers the requirements of a process of constructing an ex-ante policy assessment tool to be used in the European Commission. Therefore, some of the findings may well clash with the ambitions of a community that is established by scientists and that constructs such a model. Lee writes: “science and politics serve different purposes. Politics aims at the responsible use of power; science aims at finding truths, results that withstand the scrutiny of one’s fellow scientists” (Lee 1993, quoted in Farrel et al. 2006:14). These problems are well known to scientists working on Integrated Assessments which frequently deal with the problems of science and policy interaction, given the nature of Integrated Assessments. Parson for example writes: “Assessment normally does not mean doing new science, but rather assembling, summarising, organising, interpreting, and possibly reconciling pieces of existing knowledge, and communicating them so that they are relevant and helpful for the deliberations of an intelligent but inexpert policy maker” (Parson 1995:462).

A purely scientific endeavour is not used to orientate itself towards a specific user environment or client group. Rather, scientific research is an end in itself for many scientists. These are the tensions under which science funded by the European Commission develops nowadays. Scientific requirements and clients’ or users’ demands are mutually exclusive motivations many people would argue.

SENSOR took on the challenge of trying to combine the two aims. The Institutional Analysis is one of the work packages at the heart of this effort. However, it is very likely that inbetween the day on which this report is submitted and the day of the completion of the SIAT by the SENSOR Consortium many issues will change significantly in the user environment. In fact innovations developed in sciences themselves are among the drivers of these changes. Therefore, to some extent the scientific community and the SENSOR consortium itself may decide to make efforts to shape the user environment in a way that makes it open for the innovations that are part of the SIAT.

Most difficult to handle in this respect are situations where innovations influence decision making processes in a ‘political’ or biased fashion. To some extent the SIAT will always be political. “Assessments can have many different impacts on the policy process. Some assessments change the framing of a particular issue … Assessments can change the terms of a policy debate, or identify needs for research and development. They can prompt new participants to be concerned about an issue, or change the interests, behaviour, or strategies of participants who are already engaged” (Eckley 2001:6).

The most important argument of this report is that any policy assessment procedure encounters already existing implicit or explicit policy assessment practices. Therefore, it necessarily reconfigures them and leads to what we call institutional change. The Institutional Analysis aims to uncover the current practices of policy assessment in the European Commission.

This report is structured into four sections: in the next section we will briefly introduce the project components and rationality in a way that shows the relevance of the Institutional Analysis. Second, we will apply institutional theory to the work of SENSOR raises and and describe the methodology. Third, we present and interpret the empirical reply. Fourth, we derive contextualised recommendations and conclusions.
2 Background of the Institutional Analysis

The objective of the Sensor consortium is “[t]o develop integrated Sustainability IA Tools (SIAT) to enable EU policy makers to analyse the impact of land use policy options on regional sustainability issues” (SENSOR 2004:3). The SIAT is to be “designed interactively with the end user to ensure the practicability of the outcome” (SENSOR 2004:3). As part of this remit the Institutional Analysis seeks “to support the integration of the SIAT model at EU level to increase its application”. Rather than working with the end-users and their environment in an “action research fashion”¹ the Institutional Analysis adopts the position of distant observer of this setting. With the objectives of SENSOR in mind the Institutional Analysis assesses the status quo end user environment. The reasons for this strategy lie in the underlying rationale of an institutionalist approach to understanding social interactions. The benefit of this approach is that the outcome is likely to paint a picture consistent with the realities of the end user environment.

More specifically, for analysing the institutional environment and how models are used by decision-makers two directions of inquiry are indicated by the DoW: “(i) the institutional fit of models like the SIAT at EU level and (ii) the participatory linkages to the regional level to generate the data” (SENSOR 2004, p118). The research focuses on the perspective of the European Commission on institutional fit and participatory linkages. The DoW details the first point as follows: “Past experience with sector and integrated policies will help to detect requirements for the use of future models. The practice of using models will indicate the influence of power and organisational structures. The compatibility of the SIAT with decision making structures relies on the institutional fit, which [as outcome of the Institutional Analysis] will be improved.” (SENSOR 2004, p118).

As outcome the Institutional Analysis is to deliver a “[r]eport on Institutional Analysis of model use by policy makers and definition of process requirements for successful participatory implementation into institutional environment as an input to SIAT construction”. The Institutional Analysis narrowed down the research agenda to the following question: what makes the European Commission use a specific quantitative modelling tool for ex-ante policy assessment?

¹ Action research: “a flexible spiral process which allows action (change, improvement) and research (understanding, knowledge) to be achieved at the same time. The understanding allows more informed change and at the same time is informed by that change. People affected by the change are usually involved in the action research. This allows the understanding to be widely shared and the change to be pursued with commitment” (Electronic Resource: Resource papers in action research, accessed: 29.3.2005, www.scu.edu.au).
3 Research Design and IAD Framework

We opted for gathering data through the Institutional Analysis and Development (IAD) Framework devised by Ostrom et al. (1994). The IAD provides an adequate stylised description of the choice situations of individuals in the European Commission and in which they select a specific ex-ante assessment tool. It is a well-established framework of variables guiding data collection. “Frameworks [such as the IAD] bound inquiry and direct the attention of the analyst to critical features of the social and physical landscape. ...they cannot in and of themselves provide explanations for, or predictions of, behavior and outcomes. Explanation and prediction lie in the realm of theories and models” (Schlager 1999:234). “Theories place value on some of the variables identified as important in a framework, posit relationships among the variables and make predictions about likely outcomes” (Schlager 1999:240). For this study we confront two alternative "theories" suggesting the way actors relate to their institutional environment, as described through the IAD. On the one hand the logic of appropriateness2 on the other hand the logic of consequentiality3 (see also Annex 3). The IAD framework “most clearly specifies the individual as actor and posits a set of general variables that structure the individual” (idem).

Usually, applications of the IAD are not interested in the way preferences are formed. However, we introduce the possibility that actors’ preferences may be the outcome of the endogenous interactions of the community that an actor is part of (e.g. the policy domain). We aim to clarify to what extent actors behave either following the logic of appropriateness or the logic of consequentiality. An important question therefore is that of understanding European Commission officials’ preferences, “[s]ome scholars are sceptical about the value of researching preferences because they harbour unrealistic expectations about their causal power” (Hooghe 2001:11). However, we still open the possibility of endogenously forming preferences. We do not decide on the way we relate the variables of the IAD ex-ante but we need to assess the role outcomes or ‘value shaping’ interaction plays in selecting ex-ante policy assessment tools, the stability of preferences or the processes that make them change. Hooghe makes clear that researching preferences is an empirical matter rather than a deductive endeavour. “If preferences help to shape action, then it makes little sense to infer them from action” (Hooghe 2001:8).

Frameworks have several classes of variables. The IAD focuses on what it calls ‘rules in use’. Furthermore, if in the IAD “the analyst chooses to focus on an action situation exclusively at the operational level4, the collective choice, and perhaps the constitutional-choice level is nevertheless included because the rules-in-use that structure the operational level originate from the other two levels (Schlager 1999:238). The setting that the analyst wants to examine and the questions that the analyst wants to address determine the unit of analysis. In our case it is the European policy development and assessment context and the structures that influence the operational choice with regard to modelling tool use. The IAD framework provides “a metatheoretical language for thinking about diverse theories and their potential usefulness in addressing questions of relevance to the analyst” (Ostrom et al. 1994:25). Using the IAD framework to structure the data gathering enables us to answer questions with regard to the behaviour of actors in the European Commission concerning assessment tool selection and their underlying logic of action selection. For this purpose we need to a) describe the action

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2 The logic of appropriateness implies a “matching of identities, situations, and behavioural rules.” To act appropriately is to proceed according to institutionalised practices of a collectivity, based on mutual, and often tacit, understandings of what is true, reasonable, natural, right and good. It implies a relatively complicated cognitive process involving thoughtful reasoning behaviour[2]; but the processes of reasoning are not primarily connected to the anticipation of future consequences as they are in most contemporary conceptions of reality“ (March and Olson, 2004:6).

3 It focuses on “those aspects of human behaviour that are instrumental and based on strategic calculation” (Hall and Taylor:7).

4 This is the case of this Institutional Analysis.
arena/situation through the IAD framework (details of the framework see below) b) gather the data to justify in a bottom up fashion the way we relate the variables in the framework in the specified domains (dialogue of logic of appropriateness and consequentiality). Based on this data we come to conclusions on the question if the logic of appropriateness of the logic of consequentiality applied.

In what follows, we will order the empirical material regarding ex-ante tool selection in relation to the variables the IAD singles out (see details also Annex 3) in order to subsequently make inferences about the behaviour of actors. The presentation of the results below answers the various research questions. It draws on, or details, the overall description of its context, IA procedures in the European Commission, that we provide in section V.1.-V.7. and Annexes 5 and 6.
3.1 The operationalisation of the research setting from an institutionalist perspective

The Institutional Analysis asks the question: what makes the European Commission use a specific quantitative modelling tool for ex-ante policy assessment? In the last section we broadly introduced the IAD framework for conceptualising the research setting (see also Annex 3). In this section we want to describe the specific research setting from an institutionalist perspective and conceptualise ex-ante policy assessment tools in a way that helps us to detail the research question.

For transposing the IAD we want to focus on the definitions of the object of analysis of the various approaches, i.e. institutions, their emergence and change and the way they influence individuals’ behaviour (logic of action selection – logic of appropriateness or logic of consequentiality).

The IAD framework has frequently been applied to collect data for applying rational choice types of analysis (logic of consequentiality). It inherently provides the adequate categories therefore. It defines rules as “shared understandings by participants about potentially linguistic entities…that refer to enforced prescriptions about what actions (or outcomes) are required, prohibited, or permitted…. [R]ules are the result of implicit or explicit efforts to achieve order and predictability among humans by creating…positions…who are the required, permitted, or forbidden to take classes of actions in relation to required, permitted or forbidden outcomes or face the likelihood of being monitored and sanctioned in a predictable fashion” (Crawford and Ostrom 2000; V. Ostrom 1991, quoted in Ostrom 2005:23).

Sociological institutionalism (here associated with the logic of appropriateness) expands institutions to rules and routines defining “…appropriate actions in terms of relations between roles and situations” (March and Olsen (1989: in what is an institution). It defines institutions much more broadly “…to include not just formal rules, procedures or norms, but the symbol systems, cognitive scripts, and moral templates that provide the ‘frames of meaning’ guiding human action” (Hall and Taylor 1996:14). Institutions can therefore be situated internally or externally to the actor. In our application of the IAD they are implied in the ‘rules structuring the action arena’ (rational choice institutionalism) as well as they are part of the ‘features of actors such as preferences, way information is acquired, processed, used and retained and actions are selected’ (sociological institutionalism). They can be endogenous reflecting changes within the features of the community of which an actor is part. As features of the community, Ostrom singles out values of behaviour generally accepted in the community (often referred to as culture), level of common understanding of participants, degree of homogeneity of preferences, size and composition of community and level of equality of assets (Ostrom 2005:35). In sociological institutionalism any of these elements are institutions and can affect people’s behaviour. They change as a consequence of changes in the wider cultural and community environment.

Institutional change is the consequence of changes in what are considered to be ‘appropriate’ or legitimate actions in a specific community. It shows how sociological institutionalism conceptualises institutional change as partially interactive and creative process whereby institutions are socially constructed. Which logic of action selection applies and therefore what institutions are and how they influence people’s behaviour remains subject to empirical data in this research. Therefore, we adopt an inclusive definition of institutions.

The Institutional Analysis of SENSOR looks at practices in the context of policy development in the European Union. The ‘community of people into which the action arena is embedded therefore are those actors across Europe that participate in policy development. The formal and informal rules and routines that govern the coordination of actors and their viewpoints throughout policy development are the institutional setting of policy development.
Actors have different ways of interacting with the policy and influencing it at various stages of policy development. The choices that they make are assumed to be the outcome of the contingent set of variables that the IAD draws out. If a new assessment procedure/tool is successfully introduced into policy development, it changes the established institutional configuration of policy development/assessment. The opportunities of the actors involved to influence the policy development process are altered.

Introducing a new assessment tool implies that different data are introduced, different dimensions are looked at or they may be valued differently. Channels of influence are granted to actors who did not have influence beforehand. Once designed, quantitative ex-ante modelling tools are relatively inflexible. They rely on relatively stable input, follow fixed procedures in assessing policies and present their outcome in a pre-structured fashion.\(^5\)

The tool is most flexible during its design stage. Afterwards the institutional environment of modelling tools has to adapt to the configuration of the modelling tool. If a consequentialist logic described actors’ behaviour best, actors will only do so if the benefit from changing their practices outweighs its costs. Costs in this case are what Challen calls “transition costs”\(^6\) (Challen 2000:7). Furthermore, political costs (loss of legitimacy and influence) may emerge. Their preferences would remain stable. From a social constructivist (logic of appropriateness) point of view, actors will choose a new assessment tool implying institutional change if this was in line with the values, prescriptions and routines of the community with regard to which individuals seek to legitimise their actions. It would be legitimised within the community that the individual is part of, and in regard of the actors that take part in the assessment exercise in which the specific tool is used. Alternatively, the assessment tool itself or the assessment process of which it is part has changed the communities’ preferences in a way that favours the application of the tool. It is crucial to assess which specific mode of action selection follows vis à vis tool selection in order to come to predictions about the behaviour of individuals and develop an appropriate strategy to bring about the introduction of the SIAT in European IA practices.

The Institutional Analysis in the context of SENSOR should be useful to the consortium and according to the DoW it should give guidance to its design. On a conceptual level and following a consequentialist logic the aim would be to either minimize transition costs which means to make the tool fit to current practices as much as possible or to maximise benefits from its use. In this case, we either limit the scope of innovation of the tool or justify it with an outstanding value for policy making. Following a social constructivist approach the aim would be to design the tool in line with the values, prescriptions and routines the community involved currently holds or to shape these values in a way that legitimates the use of the SIAT. Throughout policy development, many choices have to be made. Each of them implies an action situation and is embedded into different institutional contexts. They are organisationally interlinked and pre-structure the choice of the actors.

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5. Below we specify what characteristics of the policy development cycle are of relevance to judging the institutional fit of the SIAT.

6. The costs of decision-making for institutional change and the costs of implementing institutional reforms (Challen 2000:7).
3.1.1 The SIAT and the IAD

Policy assessment tools are a specific way of assessing the impact of policies. In our case, we do not know, what the tool, whose institutional fit we try to assess, looks like. Therefore, we conceptualised policy assessment tool use and described the SIAT in terms of this conceptualisation and based on the principles that guide SENSOR and SIAT design. The core of the SIAT will be a modelling tool. However, in the tradition of integrated assessments it may be extended by participative methods. “Modeling is certainly one part of the [Integrated Assessment] process and probably the most developed component up to now. However, the way in which integrated assessment practice defines itself depends on how approaches for modelling are developed” (Gough et al. 1997).

Policy assessment tools are situated in an action arena which varies with the characteristics of the policy assessed. The community involved in the policy domain varies, the interests that it impinges upon vary as well as the way their representation is organised. A key variable describing policies is salience. It varies for example with the type of policy (regulatory or fiscal), the type of the interests it impinges upon, the level of certainty of its effects (and the output from policy development – e.g. white paper, regulation in the EU), their quantifiability, the political resources of the groups and actors affected, if they are targeted or not and the type of rules they affect. Kohler-Koch (2005:15) writes for example “[a]n impact of interest politics on the EU level …is most likely to happen when controversial issues are at stake and political responsibility is attributed to the European level”. Finally, assessment tool selection is part of a broader process throughout which policies are developed. Specifically, since 2002 the Commission introduced Impact Assessment (IA) as formalised procedure to structure the way policies are developed and their implications are assessed. Below we graphically represent this conceptualisation of assessment tool use in the context of the European Union:

![Diagaram](image-url)
We distinguished (a) the context, (b) the features of the policy that is assessed, the assessment tool itself is conceptualised through (c) the features of the input into the assessment tool, (d) the way the tool was constructed and the characteristics of operating the assessment tool and (e) the characteristics of the output of the assessment tool. Emphasis on specific features is to provide focus to the reconstruction and analysis of action arenas, which are similar to what the SIAT would encounter. A panel of members of the SENSOR Consortium identified the following characteristics of the SIAT:

**BOX 1  The ‘key’ features of the SIAT**

**a. Context:**
The SIAT is to be used as part of IA procedures in the European Commission.

**b. Policies:**
The SIAT is to assess different types of policies/issues in different policy domains.

**c. Input:**
The SIAT draws on cross-sectoral data at NUTS x level (combination of NUTS 2&3) regarding the issues that constitute the specific multifunctionality of landscapes.

**d. Tool:**
The SIAT is a computer-based ex-ante modelling tool constructed by scientists. The construction of the tool involves an empirical validation phase. The SIAT aims to involve regional level actors in its construction. The SIAT will be constructed in a way that is sensitive to the needs of end users. It is open who will run the tool for IA in the European Commission.

**e. Output dimension:**
The SIAT analyses the impact of European policies on the multi-functionality of regional landscapes/land use. Therefore it builds on the assessment of regionally delimited landscapes in terms of multifunctionality. The object of assessment, landscapes, are shaped among others by the interactions of multiple sectoral policies – landscape assessment makes policies aware of their interactions with other policies and their effect on the multifunctionality of landscapes.

The SIAT intends to present its results in the form of maps or 3D simulations of impacts on landscapes.

The SIAT will provide quantitative output with qualitative qualifications (e.g. probability levels).

This research setting relates to the IAD as follows: The community, in which the action arena for tool selection unfolds, is constituted by the participants in policy development and assessment. Its configuration depends on the characteristics of the policy. Stable members are the European Commission officials and the other European entities that formally have to be involved. European Commission officials/desk officers take the decision with the backing of the overall Commission the policy assessments unfold and what assessment tools are used as part of it. This Institutional Analysis is interested in the latter decision. The way desk officers decide is exogenously structured by formal and informal position, authority, scope, transformation, information and payoff rules that govern their decisions/actions.

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7 Meeting at ZALF, Müncheberg between M7, M4 and M1 members of the Sensor Consortium.
Desk officers and the European Commission as collective actors have specific preferences with regard to the outcome tool selection influences. We subscribe to Hooghe’s operationalisation of the question if European Commission officials act according to the logic of consequentiality or appropriateness. Hooghe writes that rational Commission officials would be motivated primarily by individual career concerns (Hooghe 2001:21). On the other hand she would equate behaviour of socialized Commission officials with “officials preferences reflecting internalized norms, values, and principles embodied by the groups or institutions that have been important in the life” of the official (Hooghe 2001:22). The question, which logic of action selection Commission officials follow may well be complex as “human motivation is complex” (Elster 1989).

Hooghe similarly hypothesises:
1. Basic preferences on EU governance are likely to reflect a mix of socialisation and rational (utility) factors. Most people are, most of the time, both rational and moral.
2. These preferences are likely to be shaped by experiences outside as well as inside the Commission” (Hooghe 2001:25).

They may be influenced by the surrounding policy assessment community and the ongoing assessment process or not. The role career outlook plays is key for answering the question with regard to the underlying logic of action selection. Furthermore, desk officers hold and develop limited information about the policy assessment and have capacities to acquire further information. They have resources in function of which they take their decision or influence it. Finally, they hold selection criteria (heuristics) that inform their action. We assume that these criteria may change as the assessment process unfolds. Understanding this process is key for the Institutional Analysis. We set out to uncover the generic criteria guiding tool selection and the process by which they are formed, and at the same time, we test in our empirical work, how the features of the SIAT relate to overall policy development practices in the EU and to tool selection.

The IA context and the action arena in which ex-ante assessment tools are selected are organisationally interlinked. We presume that the practices that govern IA also relate to ex-ante tool selection choices.

The above-described results in the following overall research question and subquestions for the Institutional Analysis of the SIAT.
BOX 2 Research Questions of the Institutional Analysis

What is the institutional setting (action arena and action situation – in terms of the variables of the IAD framework) into which the SIAT will be introduced? Based on this data the following questions are to be answered.

**Overall research question:**
What makes the European Commission use a specific quantitative modelling tool for ex-ante policy assessment?

**Subquestions:**
1. How does IA work as context of policy assessment/development in the European Union in which the SIAT is to be applied? What indications can we draw from this for the organisationally interlinked arena in which ex-ante assessment tools are chosen?

2. What logic of action selection underlies the selection of a specific tool: Logic of appropriateness or logic of consequentiality or a combination of both?

3. What features of the policy, that is assessed, matter to the selection of a specific assessment tool? Which features of an assessment tool influences if it is selected?

**SIAT specific:**

4a. What determines if a scientific, computer-based, quantitative, ex-ante modelling tool is used?

4b. How do the features of data influence the use of a policy assessment tool?

4c. What difference does the fact make that the tool has been empirically validated?

4d. Is policy assessment interested in the assessment of policies with regard to multi-functionality of regional landscapes/land use?

4e. What role do interlinkages between EU Com and regional stakeholder play for a successful introduction of the SIAT into its institutional environment?

4f. What role does participatory tool construction play for successful introduction of a tool?

4g. What role does it play if an assessment presents its empirical results in the form of maps and if quantitative results are to be qualified qualitatively?

5. Who is likely to run a quantitative ex-ante assessment tool like the SIAT, and how?

The specific research questions of the International Dimension of the Institutional Analysis were:

1. Which of the international comparisons can be used to inform the SIAT design process? How and why can they be used?

2. What tools have these countries used to assess policy impacts? How have they worked? What can be learnt from their design process? How can those experiences inform the SIAT design process?

3. Who is involved in the design process? How and why are they involved?

4. What data does the tool use? At what spatial and societal disaggregation/resolution?

5. What are the outputs of the tool? How and why are these useful? Who and what do they help to inform?

6. How will the tools be used in the future? How could their use be improved (i.e. in terms of user, spatial or societal resolution, data input/output?)
4 Methodology

Institutional Analyses imply various methodological difficulties. Many authors criticize institutional analyses for the lack of rigour and accuracy (see for example Rhodes 1995, McCann et al. 2005). Much work on institutions is case study based as institutional analyses would address largely unchartered territories (see also Yin 1994; Gomm and Hammersley 2000). The Institutional Analysis in the context of SENSOR changed iteratively between empirical and conceptual work: At the outset the basic research question has been defined. From there on the research proceeded in a three-stage process: first, the institutional setting regarding policy assessment tool selection was uncovered. Focus was laid on uncovering policy assessment practices. In this context we tried to derive which logic of action selection individuals follow in policy assessment practices. Thereafter, the institutional setting was analysed through the focus provided by the issues identified as key features of the SIAT. We started to focus more specifically on policy assessments that looked at policies relevant to SIAT or that used similar types of assessment tools.

When we wonder about the logic of action selection and the way preferences and criteria of selection are developed, we ask if actors follow a rationalist or a consequentialist approach. Hence we focused on the question about the role an outcome plays in assessment tool selection process and to what extent criteria and preferences change throughout the policy assessment process. Such a study requires careful design (see for example Checkel 2000). A further difficulty was introduced as our unit of analysis involves high-level policy experts/officials. High-level experts like to be in control of the interview situation to some extent and the interview actually resembles some kind of negotiation of what is disclosed and what is not disclosed. It is more difficult to make a high-level policy expert talk and in the interview itself the interviewer would address similar issues each time ordered by topic fields and talk them through more freely, applying expert interviewing techniques such as outlined by Gillham (2000). Confidence of the interviewee is key in this process. The aim is in-depth understanding of the action situations with which high-level European official are confronted. This data would then be triangulated throughout further interviews and with written documents in order to increase reliability.

Hereby two further difficulties come into focus: First, as IA is a very recent practice the number of cases of IAs that illustrate the issues the study was interested in, is very limited. Second, the SIAT is innovative to an extent that the issues it touches upon have hardly been considered in policy assessment practices in the European Commission before. Therefore, it was opted for assessing several of the features of the SIAT in relation to European policy making more in general. It became specifically important to understand the institutions governing IA as an organisationally interlinked arena of almost identical characteristics. This way we tried to overcome the lack of a sufficiently large sample to generalise the way modelling tools are used in the European Commission in IAs related to similar issues as the SIAT. Following the same strategy, we looked at broader issues in European policy making (the role of assessments of the performance of regions, representation in the form of maps, multifunctionality participation and participation of regions, modelling tools for policy development and assessment).

The Institutional Analysis included a review of documents and literature with regard to the various issues SIAT application touches upon. Empirical work consisted of 26 interviews. Eight interviews were carried out in DG Environment, four in DG Regio, one in DG Research, three in DG Agri, three in DG Enterprise, one in DG Joint Research Centre, one in DG Tren, one in the Secretariat General of the European Commission, one in the Secretariat of the European Council, one in the administration of the European Parliament, one in the European Environmental Bureau and one on the European environmental Agency. Additionally, two experts in EU IA practices were interviewed.
Sometimes the research relied on the snowballing approach for identifying the interviewees, sometimes people were targeted on the basis of their specific tasks in the Commission and the IAs, modelling tool use or issue arenas within a policy domain\(^9\) in which they are working. We focussed our work on the perspective of the European Commission. As it emerged throughout the research, IAs on some substantive policies were of specific interest\(^{10}\).

Expert interviews were semi-structured and transcribed or notes where taken directly after the interview (see also the example interview guidelines in Annex 1). The interviewees were promised confidentiality so that no information will be given that could lead to their identification and transcripts are confidential. The qualitative data analysis software “Atlas ti” was used for coding the data in regard to the IAD and the research questions and for analysing it. The findings presented below derive from these interviews, from a report of another European Project working on IA in the European Commission and relevant literature.

For the international dimension an initial review of SIAT-like tools and projects was conducted and five projects were selected for evaluation (Ecological Sustainability Tool (QUEST), Canada; INSURE, EU; INSIGHT, EU; INSPIRE, EU; EvoLand, Australia).

The criteria for this selection were that the tools should be similar to SIAT in one or more of the following characteristics:

- Should be related to land use;
- Should be related to Impact Assessment;
- Must involve stakeholders in part of the process;
- Must be scientifically robust; Must have a regional focus with data disaggregated to regional scale;
- Must use qualitative and quantitative methods; and,
- Should have an interactive interface design.

A review of literature was used to analyse the five projects and to examine their history, modelling and development, and use. As the most similar to SIAT and SENSOR, telephone interviews were held with a variety of project participants, including Principal Investigators, Co-Investigators and Investigators in QUEST and INSURE. These included interviews with three QUEST project members and two INSURE project members. The interviews were analysed and triangulated as far as possible with evidence from available literature.

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\(^9\) Policy domains are umbrella issue arenas. We define policy domain as “a group of actors that are organised to participate in a collective debate with the goal of affecting the content of legislation or agreement”. It features “agreement that domain is legitimate focus of policy oriented actors, a set of shared meanings, …to understand who is a “player”, who has power, and why, …organised governmental actors that consider the domain their “turf”, other nongovernmental actors who participate in policy construction in the domain. Institutionalisation here means that organisations and meanings are shared and operate to structure subsequent cooperation” (Fliqstein and McNichol 1997:3-4).

\(^{10}\) The Cafe (Clean Air) IA, the Reach (Chemicals policy) IA, the Soil strategy IA, climate change policy, the five thematic strategies that DG Env issued in 2005 (urban environment, sustainable use of resources, protection and conservation of the Marine Environment, Prevention and recycling of waste, air pollution) and land use and environment related units in DG Regio, Agri, Enterprise, Transport and Energy and Environment, horizontal units dealing with IA, participation, modelling and evaluation in the same DGs and in the Secretariat General of the Commission.
5 Empirical results

In this section we will present the empirical results of the Institutional Analysis. Part I will examine IA as the context into which the use of the ex-ante assessment tool feeds. Part II will detail and complement these preliminary insights with regard to the specificities of modelling tool selection and specific issues relevant for SIAT.

5.1 Impact Assessment in European Policy Making

The Commission has the exclusive right of initiative in European policy making. For realising their legislative projects the other two bodies (the European Council – representation of the MSs and the European Parliament11) depend on the European Commission to draft a policy (Nugent 2001). The way in which they have to agree depends on the issues a policy tackles. Voting mechanisms are fixed in the European treaties. The European Commission’s task of policy formulation (or the development of a specific dossier) includes: acquisition of detailed technical knowledge of the topic, research and policy analysis, liaison with interested parties, the creation of support groups and networks within and outside Community institutions, the organisation and management of the procedures and timetable for the development of the proposal, the presentation and defence of policy proposals, the marshalling of arguments into detailed submissions, drafting of documents (Stevens and Stevens 2001:141).

IA practices in the European Commission are evolving fast. The number of IAs undertaken each year increases illustrating that the process is being taken more serious each year. Last year for example 77 have been undertaken and in the year before a little less than 30. New guidelines have just been adopted (CEC 2005). They follow claims made by a document that the Commission issued and in which it reviews the sustainable development strategy12 (CEC 2005a). The new guidelines are said to be more accessible and practical for use by desk officers but hardly differ on substance. Generalisations with regard to how an IA goes are impossible to make as all desk officers highlight. Every IA is different. Formally, it depends on the type of document that is being assessed, and some characteristics of the policy, i.e. the interests that it impinges upon, and its specific implications.

Also, outside of the Commission and in the other EU bodies that participate in policy development (European Parliament and European Council of Member States) IAs are increasingly scrutinized in formal sessions (Int. 9,10). In 2003 an agreement has been adopted between the Commission and the other European Institutions (Institutions here: organisations or entities, i.e. European Council of Member States (MSs), European Parliament – EP) (CEC 2003). This agreement states that “on the basis of jointly defined criteria and procedures … IAs are carried out prior to the adoption of any substantive amendment… the three Institutions…will consider the possibility of establishing a common methodology.” This clause has been introduced due to the intervention of the Commission. After the Commission has been asked to provide for ‘better lawmaking’, in turn it asked the other institutions to cater for the same standards of lawmaking (and IA) with regard to their substantive amendments (Int. 9).

The European Parliament and the European Council currently deal with implementing these provisions. In the European Council no resources are allocated to IA. One pilot project has been undertaken (Batteries Directive) driven by the Competitiveness Council. However, rather than carrying out its own IA the Secretariat of the Council together with the Presidency re-evaluated and scrutinized the IA carried out by the Commission (Int. 9).

11 For further description see: Peterson and Shackleton (2002) and Hayes Renshaw and Wallace (1997).
12 The document demands: more effective implementation of a balanced IA mechanism, an improved method, better consultation, and the implementation of the inter-institutional agreement on better law-making which asks the EP and the Council to undertake IA as well (CEC 2005a:19-20).
In the case of each policy proposal at least one session of the representatives of the MSs in the Council is dedicated to the technical evaluation of the IA. Increasingly IA provides arguments, which have to be dealt with by the representatives of the MSs. On the whole the presentation of knowledge based, or even quantitative evidence seems to become more important in political discussions, at least in the environmental policy domain (Int. 9,3).

A significant problem for the Council to undertake its own IAs is the lack of resources and the lack of time as the policy adoption cycle among the legislative entities follows a tight schedule. Besides reshaping the verbal political debate and the way arguments are presented it is presumed to be unlikely that IA will gain much greater significance in the European Council (Int. 9).

The European Parliament has been asked increasingly by the Council and the Commission to support its stance on policy proposals with quantitative data and studies. Consequently, the administration of the European Parliament has been re-organised recently not least in order to provide scientific backup to the Parliamentarians with regards to IA, if requested. One entire unit now deals with IAs. Significant budget has been allocated to provide for a long-term framework contract. The contracted consultancies are to provide quick IAs on amendments and issues requested by the EP. However, the attitude of parliamentarians varies with regard to accepting knowledge-based arguments and they insist on the weight of their “political” arguments (Int. 10). A key role in the way knowledge-based arguments are treated lies with the rapporteurs who coordinate the negotiations of the Parliament with the Council and the Commission.

5.2 Impact Assessment and the European Commission

In regard to past practices desk officers distinguish two types (or qualities) of IAs: On the one hand, there are those that are to justify political decisions that have already been taken by the time the IA is done. In these cases the desired outcome of the assessment dominates the way the assessment was undertaken. Consultation and participation is of less relevance in these IAs. Reasons for such an attitude can be manifold. Some of these policy domains are subject to more inter-governmental styles of policy development (see also: Fligstein and McNichol 1997)13. None of the actors involved in policy adoption is inclined to unravel these agreements at a later stage. In these cases the content of IAs becomes less relevant for policy development and they are undertaken for formal reasons. Their outcome supports the adopted policy. Also, it may be a matter of DG-wide attitude that DGs emphasize political bargaining before a policy is issued.

On the other hand, we can distinguish those IAs that influence the outcome of policy making at least to some extent. They are an attempt to design the most effective policies to reach a specific goal and to minimize its negative effects on the various stakeholders and sustainability. In these cases it is open to some extent what policy option the Commission will finally adopt. Also, it already happened that proposals were halted completely because of an IA (Int. 3,4,22). Often the policies and IAs in the category of good IAs were driven by the Commission. ‘Good’ IAs are equivalent to the policy development process. It is acknowledged in reality that the process is iterative.

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13 Consultation: the council is the final decision maker but European Social Council and Committee of the regions have to be consulted; Cooperation: two readings, much more difficult for the Council to ignore the EP; Co-decision: similar to cooperation but the council has to adopt come common positions by unanimity for rejecting EP’s position rather than qualified majority; Assent: EP has no right to amend. Except for the final stages of the co-decision procedure the Commission has the right to withdraw amendments that are made by the other bodies.
The Commission and stakeholders are aware of these differing standards. Inadequate practices are excused with the implementation problems that an ‘administrative culture change’ like introducing IA in the Commission implies. Implementing IAs involves “learning by doing” as much as persuasion of the services (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety 2004).

Desk officers furthermore state that in the future it will be more difficult to propose policies and bring them to adoption if they are not accompanied by an IA. Providing good justifications and at best quantified arguments for the proposed measures and specifically for contentious issues becomes more and more important (Int. 24,4,12).

In the following we exclusively look at ‘good’ IAs.

#### 5.3 Policy development cycle and IA

Policy development practices in the European Commission are structured by the “Policy Development Cycle” (for a review of the overall characteristics of the European Commission and its functioning see also: Nugent 2001 and Stevens and Stevens 2001; Egeberg 2002a). The Commission would start developing a policy in regard to an issue that has emerged on its agenda (Nugent, 2001: 236). It is not the first mover as origins of legislations usually lie elsewhere.

The formal policy development cycle prescribes the following: once priorities and strategic objectives have been specified by the College of Commissioners (the gathering of all Commissioners) the services provide input for the annual policy strategy which sets out political priorities for the oncoming year. Issues that are included in the Annual Policy Strategy have to be accompanied by a “roadmap”, which indicates the basic elements of the IA (in the previous guidelines: preliminary IA; see also below). In a dialogue with the Council and the Parliament these priorities are then developed into the Commission work programme which translates policy strategies into a concrete action plan and deliverables. The roadmap needs to be updated in the process of the elaboration of the work programme. For each major item on the Commission’s work-programme a roadmap/IA has to be done.

![SPP Cycle – 2006-2007](image)

**Figure 2** Strategic Planning and Programming Cycle 2006/07

Source: see footnote 27
Before an item is put on the Commission’s work programme the issue is prepared inside the Commission following an internal procedure. At each level, proposals have to be signed off. That way the hierarchical compartmentalisation of the Commission is respected. Senior people have very different approaches to dealing with the work of desk officers. Some sign it off without in-depth understanding while others try to control everything at great length. Cini (1996:152) highlights the iterative nature of vertical communication where drafts may be returned from senior to junior levels for re-working several times. Senior officials maintain control over their directorates through managerial procedures, as they cannot be sure of their loyalty (see also: Stevens and Stevens, 2001). If a proposal goes onto the work programme, for cross-sectoral proposals, a group needs to be installed that accompanies its development.

The IA has to be finalised by the time a policy proposal goes formally outside of the service and into formal inter-service consultation. Within inter-service consultation the other DGs get a further chance to have a say on the proposal, or to amend it. Usually it deals with the objectives and the overall implications of the legislation rather than the specificities of the IA (Int. 2).

5.4 Process and organisation of Impact Assessment

IA is part of the ongoing policy development process. It makes prescriptions on certain analytical steps and on how to gather information for developing and assessing policies.

When a proposal goes onto the Commission’s Annual Work Programme, the accompanying IA is laid out in the roadmap. In case of good IAs the roadmap simply documents a certain stage integral to the policy development/IA cycle. The roadmap has to be circulated among the DGs and agreed upon among the Commission services, at the latest by the time the issue becomes part of the annual policy strategy. The actual assessment and policy development would already have started much earlier. For cross-sectoral policy proposals the roadmap establishes a steering group (besides the one working on the draft policy itself) that accompanies the IA. The unit that is in charge of IA and the policy also selects the members of the Inter-Service Steering Group. The roadmap launches the IA formally. The Secretariat General and IA units inside the DGs check for the completeness of the roadmaps and later on the IA. They would make sure that the guidelines are broadly complied with.

The overall IA process and its results are documented in the final IA report which has to be submitted for inter-service consultation together with the draft proposal. It is recommended that this report should not exceed 30 pages. In the case of policy proposals in fields on which the Commission has done little work that far it should not exceed 100 pages. The IA report is only a summary of the overall process that led up to the policy proposal. It is made public. For those who were involved in the IA process, such as stakeholders or Commission officials, many words and considerations made in it have a very specific meaning (Int. 4). IA guidelines along with several units that are in charge of accompanying this process help explicitly on policy development procedures. The IA is to be carried out in 6 steps.

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14 The roadmap is to include an “initial IA screening & planning of further work” including the problems a policy proposal addresses, the objectives it pursues, the options that are considered, and the likely impacts; with regard to the assessment it is to include, what information and data is already available, what further data needs to be gathered, by when and what type of analysis is envisaged. Furthermore, it is to be looked at which stakeholders and experts are to be consulted, how and at what stage, and if an inter-service steering group will be set up. In a second section, which is only communicated within the Commission, the roadmap includes a time line of the IA, the configuration of the inter-service steering group, if external contracts are planned, the timing of the inter-service consultation of the draft proposal and the IA report, and the foreseen timing and procedure for the approval of the proposal. Finally, an indication is to be given about the human and financial resources necessary for the assessment.
(1) Identification of the problem, (2) definition of objectives, (3) development of policy options, (4) analysis of impacts, (5) comparison of options, (6) outline of policy monitoring and evaluation. What seems to be a linear sequence of steps is in practice an iterative process where officers may have to go back to previous stages several times throughout the process. In order to guarantee a certain standard, IA guidelines make specific suggestions on how to deal with each step in this process.

In most DGs IAs are coordinated by the desk officers that also develop the policy proposal. In DG Agri, in cases where a policy proposal concerns several units, the IA is managed by a coordination unit or where it concerns rural development in a specific country, it may be undertaken by a country unit (Int. 16). While the European Commission can outsource studies as part of policy development and IA it still has the full responsibility for the way it develops its content. This is a point which the European Parliament specifically emphasized.

Inside of each DG several horizontal units assist desk officers in preparing the IA. They provide advice on how to undertake the IA, where to get advice on it, how to consult stakeholders, how to assess the various policy options, how to analyze them in economic terms and which tools to use for this purpose. The Secretariat General (SecGen) of the European Commission, which organizes the work process for the overall Commission, has a key function and most expertise in regard to the IA process (see also Nugent 2001:146-155)\(^\text{15}\). The Strategic Planning and Programming Unit of the SecGen is also involved into the Inter-Service Steering Groups (ISSGs), and it is to be kept informed about the advance of the IA. Throughout an IA the ISSG meets regularly to discuss the evolving assessment. The guiding principle of all IAs is the “principle of proportionate analysis”\(^\text{16}\): It highlights the role of quantification in IA where this is possible and considered necessary (for further details see CEC, 2005).

As several desk officers claimed, the latest guidelines provide the most important innovation in the form of tables, which provide questions, which desk officers can use to assess policy options (Int. 3,4). Their final version is open ended and includes 32 fields in the categories of economic, social and environmental impacts. They are to give guidance to desk officers to “think outside of the box”. Unintended consequences, impacts on distribution and public opinion, lack of acceptance by important groups of society incentives and obstacles to compliance with the measures are looked at (schedule, ability to comply, sanctions).

\(^{15}\) Nugent broadly describes the functions of the Secretariat General as: Memory Bank, Watchdog and facilitator of coordination, procedural monitor, promoter of organisational efficiency, manager of relations with other EU legislative and consultative bodies.

\(^{16}\) The principle of proportionate analysis states “[t]he more significant an action is likely to be, the greater the effort of quantification and monetisation that will generally be expected. Furthermore, this depends on the political and legal nature of the proposal under preparation, its sectoral particularities and the point in the policy making process at which the IA is undertaken, some aspects of the analysis will have to be developed more than others” (CEC 2005, p8).
5.5 Sectoral Directorates, Desk Officers and Impact Assessment

Desk officers and sectoral DGs (not those horizontal DGs administering the work of the Commission) had very different reactions to the introduction of IA. The DGs directly involved into its shaping (specifically DG Environment and DG Enterprise) were committed to its implementation. Other DGs were much more lenient and slow in adhering to the practice and specifically in insisting on proper IAs (Int. 1,2,3,4,13,24). DG TREN for example is one of the DGs with relevance to SENSOR that seems to stick out in terms of weak performance with regard to the implementation of IA (Int. 24,13). This seems to be related to the overall culture of the DG and specifically its administrative leadership, which values political negotiation over knowledge-based arguments and IA. After a recent change at senior official level training of staff in IA has become one of the top priorities of the new leadership (Int. 24). It is generally figured that policy proposals will have great difficulties to successfully pass the policy development process unless accompanied by meaningful IAs. On the other hand DG Agri for example states that it already had procedures in place that catered for policy assessment of IA quality (Int. 17,16) in the form of ex-ante policy assessments.

Similarly, DG Regio was always obliged to do ex-ante assessments (Int. 11). Regional policy is only allocated every 6 years. Assessments are carried out relatively rarely, regular practices hardly emerged. For the latest funding allocation regulation a “weak” IA has been carried out. Time previewed was insufficient and the policy itself had already been agreed beforehand. DG Regio Structural Funding programmes provide a typical example where political negotiation prevailed (Int. 11,5).

On the whole however, IA gained in importance and was continuously improved in the past. Overall, the Commission strives for achieving the treaty and policy objectives of the Union. Each DG has a clientele. DG Regio for example identifies itself with an economic growth and development agenda. DG Environment stands for environmental and sometimes public health policies. DG Enterprise is associated with growth and competitiveness (Int. 3,18,12,11). The orientations of DG AGRI17 and TREN18 did not come out as clearly. To some extent they seem to be associated with the respective economic sectors. Within the objectives of the overall Commission each DG would represent its agenda throughout the policy development process. (Stevens and Stevens 2001:196, Cini and McGowan 1998:52 quoted in Stevens and Stevens 2001:197). The attitudes of desk officers to IA varied significantly. Many saw the culture change of the Commission towards more participation and assessment as unnecessarily slowing down policy making. Many desk officers in the Commission are trained lawyers with little familiarity with one of the principal aspects of IA, the economic analysis of policy options in order to find the most effective one, with regard to the various policy goals (obviously, this presupposes monetisation). Similarly, in a DG like Environment many natural scientists working have little experience with this type of analysis. However, there seems to be a general recognition that IA is becoming more important for developing policies which will be adopted by the Commission and later on by the legislative process involving the Council and the Parliament (see also above). Desk officers seemingly changed their attitude towards stakeholder participation and IA as they see better, more implementable and acceptable policies emerging.

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17 “European agriculture sector must be competitive…. environmentally sound, meet animal welfare concerns, ensure product safety, and supply the quality products demanded by the consumer. The important role …in the sustainable development of rural areas should be reinforced, as should be its role in the preservation of landscapes, habitat and biodiversity. This should form the basis for rural development policies that promote thriving communities, capable of generating and maintaining employment within and beyond agriculture” (DG Agriculture 2006).

18 “Contributing to the EU’s competitiveness …Encouraging sustainable development …….encourage a modal shift from road transport to more environment friendly modes. Reducing energy demand and renewable energy sources. developing the use of clean vehicles and, more generally, pursuing action in the field of clean energy and urban transport” (DG Tren 2006).
One of the main objectives of desk officers developing policies is to have their proposals pass the legislative process. Success in developing a policy leads to recognition and career advance (see also below and Hooghe 1997; Stevens and Stevens 2001). Desk officers will increasingly have to develop proper IAs in order to pursue their career objectives. They will steer the IA in a way that makes the draft policy successful in the policy process. This hints at the role of consultation and tool use. In preparing or collaborating on an IA, desk officers presumably follow two motivations: They represent the agenda of their sectoral DGs.

Coordinating the development of an IA, they will try to shape it in a way that helps the proposal to be adopted by the hierarchy and the other legislative bodies (Int. 4,13,24). Specifically, desk officers’ educational background, previous work experience and value set serves as a background to the way they approach these tasks. Economists and economic units clearly feel that the IA approach of the Commission plays into their hands (Int. 15,24,22,16,18).

5.6 Stakeholder and expert participation

“The Commission is a bourse where problems, policies, and interests are traded in an extremely complex and varied network of relationships involving EU institutions, MSs, and interests. In the relationships, the Commission may seek to act as a ‘broker of interests’ in favour of policy change” (Mazey and Richardson 1997:181). More influential interests …control information and expertise, provide information quickly and concisely, have sufficient resources to permit lobbying, economic and political weight, convincing representational claims, internal cohesion and access to relevant Commission representatives” (Nugent 1999:313-315).

Similarly, IAs are subject and object of participation and interest representation. Good IAs continuously accompany the policy development process. Participation and consultation are therefore supposed to be integral, continuous parts of IA and policy development. They serve information gathering and communication purposes. Some desk officers know the policy domain for long (Int. 2,4,18). They are well aware of the issues involved, and the interests and stakeholders and units in other DGs that are of relevance to the proposal. The formal IA procedure therefore rather targets desk officers that do not know the policy that well. In this case participation and consultation are to generate a minimum standard of information about the issues involved. Implicitly, IA guidelines avoid that policies are developed further which have little chance of passing in the overall Commission. They avoid wastage of resources of the Commission and desk officers’ work19.

In the context of IA and where desk officers know the policy domain, informal in house consultation often starts very early in order to get the opinions of other DGs and units on board. In order to overcome the compartmentalised and hierarchical structure of the Commission communication is indispensable. It is incentivised by various formal structures (Stevens and Stevens 2001). ISSGs only give a formal structure to in-house consultation among desk officers. Desk officers usually communicate informally with their relevant colleagues in other DGs about the critical issues in a policy proposal, ways to assess them and the reactions of stakeholders. At this stage further studies may already be launched with contractors (Int. 14,15,18). Sometimes, there can be heated debate about what to assess, how and about the results of assessments. Issues are usually discussed for as long as it takes. Only in few cases higher ranking officials will be involved to decide these issues (Int. 22).

19 On EU level interest representation see also Webster (2000)
External stakeholders are not directly included into the formal structures guiding the development of a policy proposal and IA. However, stakeholders have other channels of influencing European policy making for example throughout stakeholder consultation processes or via lobbying the various entities that directly shape policies. The Commission is in “an ongoing, and for the most part mutually beneficial dialogue with a host of nongovernmental interests” (Nugent 2001:199).

Three main interest clusters exist around EU decision-makers: private and public companies, national interest groups and “Eurogroups”, which draw their membership from several countries (in 1992 altogether 10,000 lobbyists, 3000 interest groups, idem: 198). The Commission is the main target for most interests. The Commission is mostly lobbied in areas where it has significant competencies: DG Enterprise and DG Internal Market are lobbied by industry and DG Environment by environmental groups and business; DG Agriculture by the farming lobby. If proposals are met with opposition by influential stakeholders they may well be halted by the Council of the European Parliament (Nugent 2001). Some have such good access that they acquire insider status and become part of policy networks (see for example: Mazey and Richardson 1999:122 quoted in Nugent 2001:200).

The Commission has developed specific guidelines on the minimum standards for consultation (CEC 2002b). In 2002 these guidelines were complemented by a Commission working paper on an “Ongoing and systematic policy dialogue with local government associations” (European Commission 2002d). The purpose was to “give interested parties the opportunity to express their views without undermining the decision making process” (idem: 9). Various associations welcomed the initiative and stressed the need to include the regions and the CoR (the official representation of the regions in Brussels) into such a structured dialogue. They call for greater involvement of local and regional associations in the advisory committee system of the European Commission (AEBR et al. 2003). The IA guidelines refer to this process and to the dialogue with the European Economic and Social Committee and the CoR as they can provide “useful information on impacts” (CEC 2005).

All interviewees and the guidelines mention stakeholder participation and consultation as a key component of IA. For some DGs it is more innovative than for others. Some have ample previous experience in consultation due to their existing policy making practices (e.g. DG ENV (Int. 5,4,9), DG Agri and DG Regio organise consultation through specific channels (structured dialogue with CoR, Working and Advisory Groups). (Committees in the case of Agricultural Policy (Int. 17), and the MSs and regional representatives and the CoR in the case of Regional policy (Int. 11)). Details on participation are presented in the Annex 6.

No independent external quality control of IA exists although this was demanded by several documents (see for example Federal Ministry for the Environment, Nature Conservation and Nuclear Safety 2004, Int. 24). Desk officers see in-house and stakeholder consultation and participation as (sufficient) quality control mechanisms. Those processes, if properly done, would scrutinize the IA and lobby for the inclusion of all relevant issues an IA needs to look at. (Int. 4,13,18). However, as also the Commission admits, consultation results can be biased as not all stakeholders have equal access to consultations. They therefore insist that consultation cannot be a substitute for in-depth analysis (CEC 2005).
5.7 Impact Assessment and Integrated Assessment

SIAT development has to be situated in the context of the scientific strand of development of Integrated Assessment. Integrated Assessment can be described as “a structured process of dealing with complex issues, using knowledge from various scientific disciplines and/or stakeholders, such that integrated insights are made available to decision makers” (Rotmans 1998:155). This definition exactly encapsulates what has been described above as ‘good’ IA. However, institutional set-ups differ. Essentially, IA is lead by the politico-administrative domain that is involved in European policy making whereas Integrated Assessment gives the impression of an exercise that is more independently and scientifically guided. Rotmans and Van Asselt refer to three sets of criteria to judge Integrated Assessments: analytical quality, methodological quality and usability. IA does not imply the same rigorous criteria as Integrated Assessments. The emphasis seems to lie on usability for decision making. Interviewees emphasised that the SIAT should by no means interfere with this larger process of IA or duplicate steps (Int. 13). At best the SIAT makes use of the IA process into which it is embedded in a smart fashion.

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6 Empirical results – tool selection arena

The focus of the Institutional Analysis of SENSOR is to uncover the regularised, informal or formal rule-guided practices and routines that guide ex-ante assessment tool selection. For this purpose and using the IAD framework we need to describe the action arena in which this choice of ex-ante assessment tools is undertaken. Above, we extensively treated the context of the action arena, general IA practices, for three reasons: (1) Assessment tool selection contributes to IA. The actors and the purposes are almost identical due to this organisational interlinkage. (2) The SIAT does not exist yet. It is innovative to an extent that we need to extrapolate experience from overall policy making/IA processes to indicate the potential reaction of IA practices to the SIAT. (3) So far modelling tool use in policy areas relevant to SENSOR is limited. A good understanding of IA provides a basis for describing the action arena of ex-ante assessment tool use.

6.1 Action Arena

6.1.1 Participants

Participants are actors that contribute to the outcome ‘tool selection (or not)’ in the context of IA. Inside of the European Commission those are the individual desk officers, the Heads of Unit, their Directors, the General Director of the specific Directorate General, the Commission that is politically responsible for the DG and the College of Commissioners that takes the final decisions on what the Commission officially issues. Furthermore, the drafting of policies by the European Commission is indirectly influenced by a large number of stakeholders which may be MSs, regions, localities, representatives or associations of economic sectors or specific groups of society. Experts and consultancies may have a role in specific IAs. Once a draft policy is issued by the European Commission, it enters the formal decision making process among the European legislative bodies.

Economists would conceptualise the relations between these various participants as a typical principal agent configuration. Simplified, one could say that the European Union is the agent (or representative) of the European populations (represented) in European Policy making. However, the deeper we go into this set-up, the more we find the re-iteration of this relation. The desk officer that prepares the policy in a specific unit is the agent of the head of unit (principal in this relation), who is the agent of the Director, Director General and Commissioner and the overall European Commission. At each level of the hierarchy we find someone who works on behalf of (agent) the higher level (principal). From an economic theory point of view the problem that we need to look at within this relation is that of asymmetric information. Usually, agents have better information about their output and the way they need to produce it than the principal. Dixit (1997:61) writes “each of the participants has some divergence of interests from that of the others, some informational advantage, and some freedom of action. Therefore, the institutions or processes must evolve to ameliorate the problems like opportunism, either with feasible external enforcement mechanisms or with credible internal ones”. In order to avoid such behaviour principals introduce control mechanisms which are associated with transaction costs. From this point of view rules and institutions should serve the purpose of economizing on transaction costs. These costs result from the need to monitor the actions of agents and to steer them in a way that is consistent with the interests of the principal (see also: Richter and Furubotn 1999:25). In policy making furthermore transaction costs are more pervasive and external enforcement mechanisms are less available or effective. Dixit goes on to show different kinds of political transactions costs and examines ways to cope with them (Dixit, 1007: 62-107).

The action situation with regard to assessment tool selection in ‘good’ IAs is described by looking at the several actors groups (desk officers, hierarchy, stakeholders, other legislative institutions (European Parliament and Council), and experts and consultants). We look at common features of the community and the selection criteria that desk officers apply with regard to tool selection.
6.2 Rules and actor characteristics of participants

6.2.1 Desk officers

Desk officers have no political programme (Hooghe 1997, Interviews). They develop a policy proposal and the IA following certain policy development practices. “Officials see themselves as having a particular duty to initiate and draft legislation and to promote integration. They are expected to shake up things and policy formulation is one of their principal tasks (Hooghe 1997 quoted in Stevens and Stevens 2001:139). Commission staff shifted their policy formulation role to ‘catalytic research activities’ and the use of policy analysis as a means of persuasion, while always seeking as far as possible to extend the scope of the Commission’s role (Cram 1997:37). They have the obligation to coordinate and steer the IA process also in regard to assessment tool selection. They are constrained by the hierarchy that approves most of their actions. Nonetheless, they have relatively best access to information specifically with regard to the technicalities of a policy proposal, the impacts it has on stakeholders and their interests. Some desk officers have long standing experience, others only learn about it throughout the IA process (Int. 15,18,4,13,22). Desk officers are at the crossroads of the hierarchy, the various DGs which represent sectoral opinions and which are consulted in the IA process and the consultation of stakeholders. Stevens and Stevens (2001:175) bring this out when they quote a Commission official: “The Commission works only because it is able to put hierarchy aside. (...) the only way to make this thing work effectively within the deadlines that are fixed by politics is to do it fast and by relying on a certain key number of people…. You have to form allies in the cause of a particular advancement of the policy.” (quoted in Hooghe 1997).

The selection of a specific tool can influence the outcome of the assessment and the draft policy developed. Desk officers have technical information advantages. Therefore, they have significant influence on the content of IAs, policy proposals and overall policies. However, this control is relatively low and probably decreasing (Stevens and Stevens 2001). Their success depends on the approval of the hierarchy and the legislative process. While able to estimate the reactions of the hierarchy desk officers are relatively little in control of policy adoption. Lower ranking desk officers “may lose sight of broader political context” (Stevens and Stevens, 2001:178). A successful policy may lead to a professional promotion increasing wage and prestige. In comparison to the costs of running an assessment tool, doing an IA or developing a policy, the benefit of each can be assumed to outweigh its costs.

In order to get recognition and professional promotion desk officers try to develop policies that are successfully adopted by the Commission and later by the legislative bodies (see also Stevens and Stevens 2001:141-143). Hooghe writes that rational Commission officials are motivated primarily by individual career concerns (Hooghe 2001:21). Younger officials’ chances for promotion depend on whether commissioners notice them. The surest way to draw attention is by furnishing creative solutions to political puzzles. … Older officials are probably by inclination more cautious and conservative…[and] focus more on administration and management” (Hooghe 2001:159). The hierarchy, lobbying and the legislative process make desk officers take issues on board that are raised throughout this legislative process.

Sectoral DGs and desk officers, as a tendency, adopt a substantial position in line with their mandate. We can assume this is an outcome of a mix of personal convictions, and values, DG culture and influence of stakeholders that are close to the respective DG.

To make it short, desk officers can be assumed to do a great deal as long as it promotes the adoption of a policy. In regard to salient issues this may include strengthening the argument with regard to its position in order to convince other members of the Commission, stakeholders or participants in the legislative process. Alternatively, they may work towards changing the
position that the proposal adopts. Desk officers therefore have a procedural preference regarding policy proposals aiming at successful adoption. Their substantive preferences vary in relation to the positions that the policy development process prescribes and their substantive previous knowledge. Hooghe writes for top EU officials: “They are extraordinarily diverse…. Their educational, professional, and cultural background is far more heterogeneous than that of top officials in any national bureaucracy” (Hooghe 2001:199).

This seems to be also valid for desk officers. While desk officers are at the crossroads and steer several information flows, they are still very limited in their capacities and sometime qualification to process this information. Nonetheless, they usually acquire significant expertise in their fields but do not have the time to enter into detailed analysis themselves. Money is usually not a problem if an exercise is expected to be useful for policy development (Int. 4,22,18,15). Therefore, desk officers rely on heuristics to structure the information. We conceptualised these heuristics as criteria for selecting an assessment tool. We look at them at the end of the description of the action arena.

6.2.2 Hierarchy within the Commission

Policy proposals follow the initiative of senior officials which hand them down the hierarchy before they come back up. The policies and IAs desk officers develop are dealt with by the hierarchy within the Commission. Heads of Unit, Directors, Director Generals, the Commissioner and finally the overall Commission need to approve the IA and the policy proposal before it goes into the legislative process (see also Nugent 2001:235-260). They deal with the issues between the services’ sectoral interests that were not resolved at lower levels. Where agreement is not possible the issue is referred to the next level. If a policy proposal does not look promising it can be put on hold (Int. 2,22).

More senior officials have more control over the outcome of policy proposals, IA and tool selection. Hooghe writes “[s]enior Commission officials have always been conscious of their vulnerable position at the intersection of politics and expertise” (Hooghe 2001:8). “Yet, as unelected officials appointed for their expertise, they are presumed to be above the political fray. If they do not handle these tensions well, they may weaken their legitimacy” (idem: 12). On the technical level they have less access to information and therefore less expertise in shaping the overall content of the proposal. They have better access to the political implications of a proposal. Hooghe writes “[T]op Officials work in an environment where competition for attention from principals, agenda setting, resources, prestige, influence, and promotion is harsh. To be ignored or by-passed by their principals may publicly taint an ambitious official” (Hooghe 2001:21). On the other hand costs to the decision maker are little.

We assume that preferences of the more senior officials are similarly ‘procedural’ as those of desk officers and impregnated by their values, education and actors attributes. Preferences regarding specific policy outcomes of IAs seem to be secondary. The way substantive issues are resolved is instrumental to making the policy adoptable by the overall Commission, the Council and the European Parliament. More senior appointments in the Commission are more political. Therefore, more senior officials need to pay attention to the political implications of policy proposals. In terms of information processing capabilities and time availability, senior officials can be assumed to be even more constrained. A heuristic of selection criteria guides their decisions with regard to using an assessment tool for IA, the overall IA and the policy proposal. They are laid down in the guidelines for IA etc.
6.2.3 The European Parliament and the European Council

The council and the parliament have the authority to put draft policies on hold. Their authority depends on the type of policy which determines the voting procedure. They may have decisive control over the outcome of policy drafting. They only have indirect means to influence the technicalities of a policy. The Council has access to national administrators and experts. The information available to it is therefore much better than that of the European Parliament. The latter buys in advice on IAs from consultants. Both are intensely lobbied by national and European stakeholders. Broadly, we can assume that Parliamentarians benefit in terms of gains in prestige and political support by their constituents. Neither Parliamentarians nor council members incur direct monetary costs nor benefits.

European Parliament and Council are supposed to do IAs of the amendments they propose for policies. The information they gather throughout IA is focussed on the issue in hand. European Parliamentarians have substantive basic values which are founded on their political affiliation. With regard to the specific policy at issue we can assume that these preferences are moulded to some extent throughout the ongoing policy making process.

The Council has no means to do an IA itself, but may in the future supplement the Commission’s IA with its own appreciation of the same material (Int. 9). The Parliament reorganized in order to dispose of the necessary expertise to evaluate the Commission’s IA. It established framework contracts with consultants to provide IAs of the amendments it suggests. The strongest constraint in this respect is the time available to the Parliament. No experience exists yet with regard to how the parliament steers this process of IA (Int. 10).

6.2.4 Stakeholders

Stakeholders have no direct influence on policy drafting or IAs. They are consulted and lobby the various sectoral DGs and later on the European Parliament and Council. Diffuse interests search for access to the European Parliament (also preferably targeted by environmental NGOs) rather than the Commission while the reverse is true for specific interests. Beyers (2002) writes: “Technocratic features of European policy-making arise when the position of the DGs is investigated; actors are somewhat less disposed to combine voice with seeking access to the EC and, in addition, when specific interests gain access to DG’s they tend to avoid making themselves publicly heard” (Beyers 2002:35). The Council on the other hand attracts considerable public pressure. Stakeholders influence tool selection, the IA as well as the draft policy and the overall outcome. They often have deep knowledge of the issues at stake. Their professional success and remuneration is linked to the way sectoral interests find their way into policies. We can assume that the preferences of stakeholders and their representatives are relatively fixed. Their information processing capacities depend on the resources that the sector provides for interest representation. The representation of environmental interests is often much less resourceful than the representation of economic interests (Int. 20,21). For specifically salient policies private sector interests would resort to producing their own IA studies.

6.2.5 Consultants and experts

Consultants and experts have no direct way to influence tool selection, IA, draft policies and policy outcome. They contribute in a narrow remit. Their information with regard to the overall process is limited. They are not interested in the outcome of the process. In order to receive their remuneration they have to fulfill the conditions fixed in the contract. Their professional preference must be to perform the tasks to which they are contractually bound. Experts act on behalf of their subject knowledge. They are assumed to have preferences for the best way to assess, and the best technical solution available, based on their subject knowledge. For consultants as well as for experts, information processing capacities are relatively high on technical issues and much less on political issues. They do not shape selection criteria for selection of tools directly.
6.3 Attributes of the community

The European policy development/IA community is principally established by the actors described above. The informal and formal norms of behaviour of this policy community are determined by the actors that contribute directly to the development of the policy: the European Commission, the European Parliament and the European Council. However, these rules need to be acceptable to stakeholders and those legitimising the Commission and the Council. This was one of the main motivations behind the reform of the European Commission in the beginning of this decade. The level of common understanding among actors is assumed to be little where a policy is specifically salient and stakes are high. For example, sectors frame issues very differently, either from an economic, environmental or social perspective looking at it from a cost-benefit or ethical point of view. Similarly preferences with regard to outcomes and the way they should be assessed vary greatly.

Resources among the members of the community vary greatly. The Commission has ample financial resources but little human resources. Environmental NGOs have little human and financial resources to contribute to this purpose. Some parts of the private sector have extensive resources for influencing the policy development. The Council lacks time and human resources. In the European Parliament human resources dedicated to IA are increasing while it similarly operates within a very tight time schedule (Int. 9,10).

Actors use these resources to influence policy-making and preference formation of the Commission and the other legislative bodies of the EU. The research showed that in ‘good’ IAs desk officers are not sure about the best way to solve a problem. They find out as they develop the proposal and the IA. Stakeholders have an important role in this. Issues that the overall policy may stumble over are evaluated in order to fine-tune or justify the policy. Policy development and IA are therefore iteratively intertwined. Desk officers and the hierarchy prefer to produce successful policy proposals.
6.4 Actors’ selection criteria

From the above, we conclude, that with regard to the use of ex-ante assessment tools, a key question is, if the tool answers a question that is relevant for developing/assessing the policy and making it acceptable. Given the limitations in information processing capacities, desk officers will apply a heuristic set of selection criteria to select a modelling tool. They are the outcome of their experience of the political process. Partly, they are codified in the IA guidelines of the Commission. Others were ‘institutionalised’ on the basis of the experience of desk officers. Following them makes sure that the tool is more beneficial for successful adoption of a policy.

6.4.1 Quantitative modelling tool use?

The principle of proportionate analysis states that “[t]he more significant an action is likely to be, the greater the effort of quantification and monetisation that will generally be expected. Furthermore, this depends on the political and legal nature of the proposal under preparation, its sectoral particularities and the point in the policy making process at which the IA is undertaken, some aspects of the analysis will have to be developed more than others” (CEC 2005, p8). So far the use of quantification is minimum (Toritti 2005). Furthermore, the IA guidelines and its annexes provide in-depth guidance on the models that are available on the market. In the future this information will be included in the IQ Tools software that will be available to desk officers.

Modelling tools will only be used when they answer a question that is relevant to policy development. With regard to ex-post evaluation for example an expert meeting in Brussels concluded: “there are a very large number of various types of modelling tools available while on the other hand, their applicability to the questions relevant for evaluations of public policies is limited” (CEC 2002d). Therefore, we have to wonder what types of question are relevant for policy development, and if the question that SENSOR puts is relevant for desk officers. Desk officers and the hierarchy are interested in assessing the issues that are relevant and significant for policy development.

The empirical work confirmed that extensive modelling is only done for salient policies, where significant impacts are expected, and where we deal with a new regulation or substantial amendment or expenditure programme. Extensive assessments are justified where the implications are significant and not sufficiently understood. It is unlikely that extensive modelling will be done for white papers for example. The principle of proportionate analysis furthermore suggests that some parts of IA will be more developed than others. Quantitative analysis can be done on its own or complemented by qualitative assessment. Questions that emerge as relevant to a policy proposal, also outside of the issues that a sectoral administration focuses upon, will be assessed. Unintended impacts and issues over which the Commission does not have any competence are specifically important (Int. 18).
6.4.1.1 Issues assessed – multifunctionality?
IA is to assess the economic, social and environmental impact dimensions of policies. Each DG tries to bring the issues it represents in the Commission into the assessment. One of the issues that seem to be of great importance is the macro-economic impact of policies and the impact on specific economic sectors. DGs Agri and Regio have specific units doing this type of modelling. The guidelines mention several issues that are strongly related to land use, landscapes and multifunctionality, such as, soil quality or resources, biodiversity, flora, fauna and landscapes, land use, environmental risks, mobility and use of energy, animal and plant health, food and feed safety, social inclusion and protection of particular groups, public health and safety (CEC 2005:29-32).

Looking at the current work programme, land use implications are unlikely to be assessed. An observer may find such an assessment useful in maybe a handful of cases. In most DGs desk officers understand the key relevance of land use implications of many policies (Int. 2,11,16,17,24). On the other hand, in practical policy making it seems to be of less relevance and is perceived as unnecessary by most DGs, except DG Agriculture. In DG Environment, the reaction to the assessment of land use implications was sceptical. It is seen as principally associated with biodiversity protection, soil (and therefore agricultural) policy and with the environmental dimension of regional policy (Int. 4,7,2). With regard to soil policy, there seems to be the attempt to keep land use issues (or the territorial dimension, as it is called in EU jargon) out of the regulation that is currently being developed. In the soil Communication (CEC 2002) the territorial dimension was to be looked at. However, the currently developed strategy excludes it. Similarly, it is highly contentious if sealing of soil should be tackled as part of the soil strategy as well as it is contentious as indicator for monitoring environmental programmes (see for example: EEA 2005) (Int. 20).

Land use is considered to be a touchy issue for European policy making, as it is an issue of unanimity voting. An assessment of land use implications was not undertaken as part of the IA for the new Regional policy instrument, the Structural Funds covering 2007-2012 (Int. 5,11). Land use implications are said to be a matter of implementation of the funds which has lately become the exclusive responsibility of the MSs (Int. 11,5,7). Tourism development which is one important land use implication of many Structural Fund projects is a ‘negative priority’ of the Commission (Int. 7). This means that they do not have the resources to deal with it and find it unnecessary.

DG Regio itself similarly seems to have little explicit interest in assessing impact on land use at the regional level. Previously it had a framework contract with a model that could evaluate the spatial implications of fund allocations on the regional level. It has meanwhile withdrawn from this contract and now concentrates on modelling macro economic impact and regional economic growth as a consequence of the regional funds (Int. 11,12).

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21 Selection of potential multifunctionality impacts from the Impact Assessment guidelines: Does the option: Affect acidification, contamination or salinity of soil, and soil erosion rates?; Lead to loss of available soil or increase of amount of usable soil?; Reduce or increase use of non-renewable resources?; Reduce the number of species/varieties/races in any area or increase the range of species?; Affect protected or endangered species or their habitats or ecologically sensitive areas?; Split the landscape into smaller areas or in other ways affect migration routes, ecological corridors or buffer zones?; Affect scenic value of protected landscape?; Have the effect of bringing new areas of land (greenfields) into use for the first time?; Designated land as sensitive for ecological reasons?; Lead to change in land use?; Have significant effects on certain economic sectors or certain regions or SMEs?; Affect involvement of stakeholders?; Affect equal opportunities?; Affect gender equality?; Affect public health and safety?; Have on impact on services in terms of their quality and access to them?; Facilitate new jobs?

22 Rime
DG TREN also seems to have little explicit interest in taking up the issue of land use implications (Int. 24). DG TREN and REGIO have contracted some studies of spatial implications of projects from the JRC. Some of them are confidential (Int. 23). DG Agriculture is most explicitly trying to look at implications of its policies for land use. However, in fact they refer to land management on agricultural land.

The assessment of impacts on landscapes is deemed to be much less relevant for policy making (Int. 2, 5, 7, 19). Most respondents associated it with the aesthetics of landscapes rather than with the systemic component of landscapes used in SENSOR. Landscapes in the former sense, as well as the European Landscape Convention, are not of great relevance to policy making for the Commission, now and in the near future. They are assumed to be mainly a national issue.

Finally, multifunctionality is hardly known in the European Commission. People in the agriculture policy domain are aware of the concept but give decreasing relevance to it for policy making. Semantics matter in this regard. For the European Commission multifunctionality is associated with supranational negotiations in the context of the WTO and for the changing role of agriculture for society (see Garzon 2005). It was to justify subsidies on the basis of public goods the Common Agricultural Policy provides due to the multifunctionality of European agriculture. However, as a consequence of these negotiations today the concept seems to be avoided by the Commission altogether. In this perception we follow Garzon (2005) who studied the effect of the concept of multifunctionality on policy design. Such an approach implies that semantics and discourse matter in policy making.

Garzon (2005) analyses the ambiguities of the concept, many of which she refers to as politically desired. She traced the three substantive normative meanings multifunctionality adopted in European policy making: “it justifies the existence of agricultural policy, the need for change and the necessity to underscore environmental and rural development concerns” (Garzon 2005:16). Furthermore, she writes “while the understanding of its components seems stabilized and helped devise new reforms under the influence of new national and international debates, the label is no longer so prominently used. In fact, Europe seems to be hesitating between multifunctionality – with its emphasis on the functions of agriculture – and sustainable development – and its emphasis on policy goals” (2005:16). It is criticized by some European officials: some associate it one-sidedly with the environmental side of sustainability, or see it as not clearly defined. As a descriptive concept it is too vague and as a normative concept it makes unclear prescriptions. Furthermore, a normative version of multifunctionality is not supported politically by the MSs (Int. 17, 19, 20).

The European Environmental Agency, the Joint Research Centre and DG Research seem to be much more interested in the analysis of land use issues and multifunctionality.
6.4.1.2 Further criteria for tool selection

Desk officers value further issues in a modelling tool useful for policy development. Of great importance in this regard is that the results of the use of the tool are plausible. This means that the results make intuitive sense (Int. 4,6,14,16,23,24). Plausibility is more important for models that the EU uses than the degree of innovation they achieve. Experts from MSs and regions question the overall model because of some specific results. Where plausibility is not achieved, desk officers would contact modellers to see what they can do about it. DG Agri, for example, would be reluctant to contact MSs, as they would try to influence the process politically. Instead this DG relies on independent experts to verify the plausibility of their results.

Accuracy is of less importance. It may be more useful to give a range of results or even to run several models and explain the results (Int. 11). Also, sensitivity analysis is a good way to evaluate the results.

At best models are ‘user-friendly’. This means that desk officers can use them themselves after brief training. However, desk officers are aware that often the assessment of a specific issue requires complex modelling. In this case it is important to take ‘the lid off the black box’ (Int. 22). This implies extensive training of desk officers with regard to the underlying assumptions of the model, its drawbacks and potential, so that they are able to defend the results of a modelling tool in a political process. In ‘good practice IAMs’ such training also involves the main stakeholders. However, such efforts are usually only spent on very salient and significant policies (Int. 22,13).

Modelling tools, that are used by the Commission should be transparent, which means that the way in which impacts are estimated has to be made explicit. Furthermore, they must be reproducible by others, and data, results and methods have to be double-checked. Finally, all problems of the tool, the assessment, the assumptions, the restrictions, risks and weaknesses associated with the tool have to be made explicit (CEC 2005). The Commission in fact sees the “intelligent combination of quantitative and qualitative methodologies” as good practice (all interviews).

This brings us to a further key issue. The tool must be transparent with regard to the data that goes in and the way the data is modelled, the scenarios, the validation and baselines etc. After a modelling tool has been used, much of the discussion within the Commission and with stakeholders focuses on these issues. The tool obviously has to be up to date.

Models should have a good track record, also in the scientific community (Int. 6). Often they are specifically peer-reviewed by experts nominated by various sectoral interests. Such a review may also include the way the tool is run by the consultant and the data that is used etc. (Int. 15,22).

If possible desk officers tend to rely on tools with which the Commission has already gathered experience or which were co-funded by the Commission (Int.15,16,22). They would rather try to adapt a tool that has been used elsewhere before they search for a new tool. Preferentially, such adaptations are done by the European Commission’s DG Joint Research Centre (Int. 16,22).

Furthermore, desk officers state that they appreciate it if they are consulted throughout the development of a model (Int.6,16,24). This can make the model more relevant to their needs. However, the problem is lack of time and the fact that only their successors would benefit from their cooperative tool development. In order to increase the acceptance of a model within the policy development community, desk officers suggest to present models for future use by the Commission to stakeholders and the MSs (Int. 24).
Cooperation on products, regions, instruments, impacts, different levels of analysis of modelling tools is to enhance their use. “Good communication of the research teams with the European Commission on the availability of statistics, statistical requirements and new developments in statistical systems at the European Commission will also foster the use and development of ex-post modelling tools” (CEC 2002d). What is claimed in this report to be valid for ex-post modelling, we can assume to be just as valid for ex-ante modelling.

Where a tool fulfils these criteria, desk officers acknowledge that modelling can be very useful in policy development. It changes the debate and makes it focus on technicalities of how to achieve an objective most effectively.

Use of the SIAT would imply the use of quantitative scenarios. The EEA studied the strengths and weaknesses of scenario exercises (Greeuw et al. 2000:91-92) (Annex 8). This study confirms some the conclusion we derived from ex-ante modelling tool use in the Commission, such as inclusiveness, transparency, issues addressed, interactive use, participatory development of tools and legitimation needs of scenarios. Scenarios and the way they are created and the assumptions that they make have to be laid open as well. Inside of the Commission scenarios may be circulated among the services in order to give them legitimacy (Int. 24).

6.4.2 Data

Information is a vital component in any political system (March 1987 quoted in Sverdrup (2005:3) and providing a space of common measurement, within which things may be compared, is part of creating a polity. Trust in the quality of information, and the institutions generating information, is important for securing trust in government and democracy. In turn “[n]umerical information has become increasingly important in EU decision making…[as] European statistics are distributed more widely, are more frequently used and are generating increased attention” (Sverdrup 2005:4). Claims on numerical data differ and can be conflicting: Access rights must be balanced against data protection, harmonisation against specificity, resources must be secured for the production of statistics and free access must be provided for the ordinary citizen (Sverdrup 2005:24).

All desk officers as well as the guidelines consider data one of the most important constraints to the application of modelling. Often data is not available at all or it is not reliable and accepted by the policy development community (Int. 4,5,6,11,12,15,16,17,18,20,24). In fact the motivation behind the foundation of Eurostat was to provide for independent, credible and autonomous data for improving the credibility of the EU and the Commission’s proposals, as well as for monitoring and implementing policy within the Union (idem: 14). However, if the input of modelling is flawed the tool itself and the results it produces are useless for policy developers. Also, desk officers warn of data that comes from stakeholders as they may try to influence the process (CEC 2005, Int. 16). At best modelling relies on ESPON or EUROSTAT data23 or official national statistics. Consultants should only gather their own data in exceptional cases (Int. 15). In some case the needs of an assessment may be too short term to be met by the data available so that an assessment has to justify its arguments differently (Int. 4,15).

Commission officials take great care in specifying the terms under which data is collected and used in studies that have been outsourced. Salience of the issues at stake matters, as Sverdrup writes “the issue of statistics in Europe is large – ranging from the low attention, refined and highly specialized discussions on methods and modes of measurement, to the high-attention decision, for instance, determining which states may qualify for membership in the Economic and Monetary Union” (2005:5).

23 Even Eurostat data has been accused in the past of providing systematically biased statistics in favour of specific policies or outcomes (Sverdrup 2005:26).
With regard to the availability of Europe wide spatial data sets the Commission describes the situation as rather poor on the European and national/regional level\textsuperscript{24}.

In order to tackle these problems, which should be of great relevance to SENSOR, the European Commission initiated INSPIRE (Infrastructure for Spatial Information in Europe). INSPIRE provides the platform on which EU spatial data requirements resulting from the environmental reporting requirements, implementation of environmental policies such as the thematic strategies and other activities will be co-ordinated and structured (CEC 2005b).

This policy initiative was adopted by the Commission. The European Council opposed it vehemently and it was sent back. It was argued that data was property of certain entities which would need to charge for its delivery (as opposed to the previsions of the Inspire proposal) and that similarly the efforts for adapting data formats to those required by the INSPIRE proposal would result in significant costs (Int.3). If Inspire was agreed or not, its final form and the arguments which are presented throughout its development could be of great relevance for SENSOR and the way it deals with spatial data.

6.4.3 Visualisation of results and disaggregation

DG Agri and DG Env underline that the way in which data is presented depends on its characteristics (Int. 6,12,16). In both policy areas this often includes mapping of impacts. Environmental NGOs see mapping and highlighting the effects of policies or status quo with colours as beneficial for their policy aims. Mapping is viewed to be specifically effective in making policy makers aware of issues and giving them an incentive to act (Int. 21).

The Commission seems to be free to choose the way they want to present the results of their studies. In DG ENV sometimes maps are deliberately used publicly, to put pressure on badly performing regions and MSs (DG Env). In DG Agri their use does apparently not pose any problems at all which may have to do with the fact that this is a policy that is the competence of the Commission. The only policy domain, that seems to be more sensitive in this respect, is Regional policy. Studies that take recourse to maps have to be transparent about their origin and make the unofficial character of maps explicit. Often, DG Regio decided to only present very descriptive dimensions in the form of maps, such as for example population or demographic statistics.

Where maps are used as a basis for policy-making, they are highly contested by various stakeholders and best to be avoided altogether. This would for example be the case where maps become the basis for the allocation of regional funds. Similarly, where future spatial development is mapped, such as for example in the case of the European Spatial Development Perspective (ESDP) MSs become very sensitive (Dühr 2003). This is one of the reasons why ESPON was founded as study centre initiated by the MSs (Int. 11,12,5).

The reasons why spatial studies and mapping of future development perspective are viewed as sensitive specifically in regard to regional policy seem to be twofold: Land use planning is a national competence that is to be maintained that way (Int. 5,7,12,24,20,21). Land use development mapping and planning is associated with economic development perspectives which may gain a symbolic character when they rank regions. The empirical work could not clarify to what extent these issues play a role in mapping in the context of IAs.

\textsuperscript{24} “absence of agreed and transparent policies and mechanisms for access and reuse” of data, “project based approach to data that leaves gaps and, at the same time wastes resources by duplicating data collections that cannot be fully re-used; no framework for regular updates, ..., patchy interoperability of data; poor return on investment because projects are always one-off and not well integrated (CEC 2005b)).
The data and its representation can be disaggregated by the Commission as necessary for its purposes. Sometimes disaggregation is done in a way that groups together important parties to the negotiations of a directive, so that their negotiation position can be estimated. However, the principal constraints to the way a model disaggregates are the capacities of the model and the data available (Int. 6).

The assessment of policy impacts on landscapes or land use could very well bring environmental conflicts to the fore as overlapping claims to the same land or landscape would become evident. This may be one of the reasons why multifunctionality is perceived as strongly associated with environmental claims. Similarly, specifically desk officers in DG Environment and in environmental NGOs stress the outstanding value of a tool that maps land use/landscape implications reliably could have. Such a tool may be associated therefore with EPI (Environmental Policy Integration), a process that aims at enhancing the consideration of the environment in European policy making. This process only advances very slowly in the Commission. Lenschow diagnoses an “overall tardy – though slowly accelerating yet sectorally varied process towards EPI in the EU” (Lenschow 2002, p18). Its future development is open. Desk officers seem to agree that with the current Commission and in terms of the Lisbon Agenda, environmental issues may be sidelined further in the future. When asked the question directly, desk officers did not see a problem for modelling tool use where they had an EPI implication (Int. 3,12,14,22).

The empirical work similarly asked how regions or nation states react to assessing their performance, specifically in regard to policies. Desk officers see no problem with such an assessment at the stage of policy design. On the other hand, the way regions and MSs are assessed, including which indicators are used, may be contested in the context of monitoring the performance in terms of implementation of regulations and programmes (Int. 19,10,12, 4). In the context of IA this step would be part of outlining the problems a policy initiative aims to tackle.

6.4.4 Interaction with regions and regional stakeholders

The role of the regions and regional stakeholders in overall structured consultations is very limited (Int. 4,5,11,12,16,18). Thielemann (2000) comes to a similar conclusion for the case of German regions and Regional policy. German regions are among the more active ones in European policy making (Int. 3). Nonetheless, he concludes that despite the fact that European Regional policy adheres to the ‘partnership’ principle25 the role of regions varies throughout the policy making process. It has had little impact on the policy design stage while it has been significant at the planning and implementation stages of European policy making (Thielemann 2000). IA is part of policy development or policy design. The regions are entitled to participate in all ways of consultation in the same way as other entities. Specifically, some of the experts in the advisory bodies and working groups will come from the regions (Int. 2,5,8).

Furthermore, for several years, DG Regio and the CoR host a yearly large public event, which brings together the European regions and the European Commission. The occasion is specifically used to discuss European Regional policies (Int. 5). The CoR is “to mobilise additional input for European decision-making. Bottom-up and top-down developments led to its foundation (see for example Keating and Hooghe 1996). Members are drawn from the various European regions (members of regional governments, or councillors of districts). It is consulted on specific policy initiatives with specific relevance to the regions26.

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25 One of the Structural Funds principles which implies the closest possible cooperation between the Commission and the appropriate authorities at national, regional or local level in each member state from the preparatory stage to the implementation of the measures (CEC 2006a).

26 Mandatory referral to the CoR comprises the fields of education, training and youth, economic and social cohesion, Structural Funds, trans-European networks, public health, culture, employment policy, social policy, environment and vocational training.
However, the CoR has little effect on European policy development. One problem for the regions is to formulate a coherent interest they wish to pursue jointly at the European level. Often they are competing and joint interests are subordinated to the interests of individual regions. Keating and Hooghe see the following joint interests of regions: institutional matters, design of partnerships in policy implementation, the principles of subsidiarity, inter-regional cooperation and cross-border initiatives (1996:219). While the Commission seems to be open to take the views of the CoR on board, the Council gives less importance to it. In regard to the European Parliament it stands in rivalry with the Regional Committee of the EP. “[W]eak, consultative powers, unclear roles, and highly diverse memberships establish an unenviable set of barriers which have to be hurdled to be able to exert any genuine collective influence – whether generated through technical expertise or a plausible claim to representativeness” (Jeffery 2002:343).

Regions themselves rather target their national governments or the European legislative bodies themselves than looking towards the CoR in order to influence policy-making (1996:220). Their overall involvement in EU policy matters has increased over the years. Currently, DG ENV is running a pilot process involving the CoR in the development of a policy initiative and IA with regard to landfill, which is considered to be of specific regional significance (Int. 3). Besides the CoR numerous networks of regions exist in Brussels, which are to enhance exchange and contact among European regions and regional actors (Int. 7). Regional policy was always a main stimulus for the Commission to try to enhance the role of the regions in European policy making. It promoted the role of the regions in European policy making and sometimes led to the creation of administrative structures on the regional level. Nonetheless, the national level was understood to maintain its role in steering European regional policy (Keating and Hooghe 223-224).

In accession states regional level representation is very weak and often incentivised by European policy developments like for example Regional policy (Hughes et al. 2001). Many European regions (regions from federal or unitary states) have representations in Brussels to monitor European policy developments as well as influence them through lobbying. Their active role in European policy-making depends on their resources and interests (Int. 5). Regions, like for example the German ‘Bundesländer’, are perceived to be among the most active ones. In some federal states (e.g. Germany and Belgium) regions agree on a common stance in the Council as overall MSs before a council meeting (Int. 3).

Regional stakeholders usually only get involved with regard to certain specific regional issues (e.g. environmental problems) or projects (e.g. projects co-funded by the European Union) (Int. 3). Formally, when the Commission wants to find out about a region or deal with a problem in a specific region it has to address the “competent authority” on the national level (Int. 3,5,12). In DG Regio the role of direct contact with the regions may well decrease as a consequence of increasing decentralisation of the implementation of regional policies which is part of the latest regulation of the regional funds (CEC 2006). One DG ENV official was very enthusiastic about the potential a tool like the SIAT would provide to synthesise and strengthen the assessment of impacts on the regions. The gap of information on impacts of European environmental policies on the regions could be closed that way (Int. 3).

At the time IA was highly welcomed by the CoR. It specifically pressed for a regional dimension of IA practices27.

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27 Presentation by Commission desk officer on IA in the European Commission refers to the opinion of Retureau on better law-making.
6.4.5 The set-up of modelling tool use in the Commission

Every IA is different due to the specificities of the policy in question. As many interviewees underlined, assessing the impact of policy options on land use, landscapes or multifunctionality may be a question that is relevant only for a minority of policies. From a transaction cost point of view asset specificity\(^{28}\) and frequency with which a modelling tool is used has implications for the way its use is set up. The empirical work with regard to the way modelling tool use is set up in the Commission confirmed the relevance of a transaction cost perspective. The work reveals that actors place stress on transaction costs and suggests ways of minimising them (see also: Richter Furubotn 1999; Dixit 1996). We return to this perspective below (only final report).

Three alternative set-ups for modelling tools use can be distinguished. Modelling can be done by the sectoral DGs themselves, it may be done by the Directorate JRC or the European Environmental Agency or it may be contracted out to consultants or experts. All desk officers confirmed that it is very exceptional that desk officers in the sectoral DGs would do the modelling themselves due to time constraints. Instead each DG needs to have experts that understand modelling in general or that are familiar with the modelling tools in their area of work (Int. 4, 6, 18, 22). In these cases the modelling would be done by external consultancies or experts.

In some fields, modelling tools are regularly used. This seems to be specifically the case where the economic, macro-economic or sectoral economic impacts of policies or market developments are estimated, such as for example in DGs Regio, Enterprise or Agriculture. DG Regio, for example, has a unit that specifically evaluates the implications of Structural Funds for economic growth in the regions and macro economic development. DG Agri has a unit that regularly models the market development of agricultural products on the level of MSs and regions. The advantage of modelling inside the Commission is the flexibility and the spontaneous reactive capacity for the Commission. Modelling tools could be run ‘back and forth’, testing many different scenarios and assumptions (Int. 11, 16, 22). On the other hand, DG Agriculture stresses the need to maintain a reputation of independent modelling, as otherwise the overall analyses, leading to EU agricultural policy measures, would be put in doubt. Where modelling is done by the Commission itself, it tends to rely on adaptations of the same tool. On several occasions sectoral services took the models used by another sectoral service with a reputation for reliability.

DG Environment frequently uses modelling tools in climate change policy. However, the modelling itself is done by consultants with whom the Commission is in close contact. In this case they need to go through time consuming tendering procedures for a specific study (Int. 6). Sometimes the timing of policy development and IAs does not allow for such time consuming processes (Int. 15, 18, 22, 24). In the past, framework contracts providing for stable Commission consultancy relations between the DGs and consultancies were not so common. DG Regio had such a framework contract that granted access to certain assessment tools (Int. 11).

More specific modelling tools are run by the DG JRC. They do more strategic, sectoral studies and run specific agricultural, transport and air pollution models which were so far used for specific IAs and policy development (Int. 14, 15, 16, 24). These policy sectors seem to have specifically intense relationships with DG JRC. Flexibility and direct communication with the JRC are constrained as they are far away from Brussels. Commission officials ascribe the following advantages to modelling done by the JRC. The JRC is one of the DGs of the Commission. The level of trust between the JRC and the Commission services is high. Often personal relationships exist between officials. It enjoys a good reputation among the services.

\(^{28}\) Asset specificity describes the fact that certain activities are associated with specific investments which are lost once an activity ends as the assets into which the investment was made are lost (no more benefit is generated from it) once a different activity is pursued.
The advantage of having the modelling done by the JRC, is that it can react much quicker to the needs of the sectoral DGs than an external consultant. However, the JRCs are not located in Brussels. Therefore, they can be used less flexibly than the quantitative analysis units of the Commission. Modelling capacity of the JRC provides essential back-up competence to the Commission’s sectoral services (Int. 4,16,22,24).

The Commission relies on external consultants or experts in modelling, where it does not have internal access to modelling capacity. The tendering process for such a study is lengthy. If the file is important desk officers would be trained by the consultant in order to reach a basic understanding of the modelling tool (Int. 15,22). Desk officers have to be able to explain the way results of modelling were communicated to stakeholders (Int. 4,11,16).

6.5 Tool use – IA

The way the use of modelling tools influences the outcome of IAs and policy development varies significantly and was not dealt with explicitly in the research. In this section we want to summarise the implications of modelling tool use for IA.

In ‘good’ IAs concerning salient policies, the tool, the data and the scenarios that are used would be extensively discussed within the Commission (see also Sverdrup, 2005). Scenarios may be approved within a directorate before use. The outcome may be checked with experts from the MSs with regard to its plausibility. Key is that desk officers themselves are able to explain the way a model produced its outcomes in a convincing fashion. Assumptions are also regularly subject to extensive scrutiny and discussion. For this purpose the Commission would hold meetings among the services involved, with participation of the consultants that did the modelling. Such discussions may also include stakeholders.

Stakeholders have, on occasion, sought further studies from consultants, to include modelling. These studies may show discrepancies with the results of the Commission studies. In such cases the Commission would offer stakeholders and consultants a meeting to discuss the different modelling tools and the results they produced. Consultancies and the Commission would be asked to “open up the black box”. Differing results would not be considered if the modelling tool was not sufficiently explained. Throughout this process the Commission aims to “close issues”. This means that it adopts a final position on what is the best way to model certain impacts or how the results of modelling should be viewed. It may also agree with stakeholders on how to study unresolved issues in more depth (Int. 4,15,22).

In the case of specifically salient policies, modelling tools and their results may also be discussed with representatives of the MSs or the parliament within the legislative process between Council and Commission (see also above). Such a discussion would involve the technical staff of the MSs (Int. 9,10).

Tool use is never unquestioned where policies involve significant stakes. Tool use changes the discussion and focusses it on the assumptions that are made throughout policy development (Int. 9,10,14,15,22,21,11). Additionally, “[c]ompared with textual information, figures are particularly effective in reducing complexities and enabling comparisons…Numerical value also seems to affect the value and trust attached to the information. …[o]n the other hand […] in the EU the lack of a common language makes textual information even more difficult and costly…[b]ut numerical information creates a form of communicating across fairly heterogeneous member states” (Sverdrup 2005:5) Some political representatives instrumentalize them. Others are reluctant to take their results on board altogether. The latter argue that decisions, once they reach the political level, should be made on a political basis rather than on the basis of quantitative evaluations (Int. 9,10,11).
7 Trends

Altogether the above developments seem to indicate that IA and IA techniques in importance and political salience. IA may well reconfigure the way political debate is undertaken also between the various entities of the European Union that participate in law-making. At the same time IAs may be scrutinized more in the future and their contents become more sensitive. Modelling tools are likely to be used more extensively as technical and data availability develops.

In the near future, desk officers will have access to an instrument with the name IQ tools, a software tool that can be used as guide to undertaking an IA. It indicates impacts and ways to assess them. It gives some indicative guidance on the selection of modelling tools, indicators and participation. The inclusion of modelling tools like the SIAT into this overview tool may be important. Several desk officers in the Commission wish that the tools and the data that are used would become more standardized, so that disputes about the characteristics of the different tools would be less (Int. 24). So far, the hierarchy has resisted such trends. Further web-based tools are to support IA such as the participation tool IPM, the expert database E-synapsse and the stakeholder database Conneccs.

The European Parliament adopted a framework contract with consultancies that contribute to their evaluation of IAs. Several European Commission DGs, specifically DG Enterprise and DG Tren seem to be increasing in-house modelling capacities at the moment. In-house modelling capacities seem specifically to concern economic impacts of policies (Int. 22,24). The main purpose is to provide greater flexibility and shorter reaction times to the DG.

DG Agri has a deepening interest in land use and land cover implications of policies. Desk officers are well aware of the methodological difficulties of modelling land use and the data constraints. Nonetheless, DG Agri officials expressed specific interest in the socio-economic implications of land use changes. They feel that this dimension is specifically underdeveloped in modelling. Furthermore, they argue for the relevance of such tools as in the future, land management will be less influenced directly by the EU, due to de-coupling (Int. 16,17,19). In other words, despite decreasing influence of the European level on land use changes, the European level would like to have tools at its disposal that model these developments.

DG JRC may expand its role in IA and modelling for the Commission. It may provide a pool of backup knowledge on modelling and specific tools which are of occasional relevance to the Commission. DG JRC is likely to study more strategic issues that the DGs are interested in. Specifically DG Tren and DG Agri seem to intend to use DG JRC that way. The role of consultants will possibly change accordingly as the Commission re-arranges its capacities with regards to IA and modelling.

Regional Impacts are likely to be looked at less by DG Regio. On the other hand, DG Agri is increasing its capacities in this regard. The development of the directive of a common data infrastructure (INSPIRE) will be of great interest to SENSOR.

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29 “The I.Q. TOOLS software is firstly a tool that supports the collection of information among a group and organises their discussion while providing background information on IA, good practices, indicators, data, references, etc. This constitutes Part I of the I.Q. Tool (I for Indicators). Secondly it is a tool that guides the user through the use of economic models. This constitutes the Part Q of the I.Q. Tool (Q for Quantification). Economic modelling is not relevant or feasible for all aspects of IA. I.Q. TOOLS guides the user to those models that could be useful for the planned IA and provides background information out of a comprehensive model inventory. For certain models that are relevant for the IA, scenarios might be explored by the user” (ZEW 2006).
8 Results International Dimension

The "international comparison" showed that there were many common issues and problems experienced in each of the five projects investigated (see Annex 4 for description). Nonetheless resources for this part of the Institutional Analysis were limited. We cannot assume that the five projects that have been researched paint a representative picture of the use of modelling tools for policy impact assessment on land use. Nonetheless, some of the conclusions are also of significance for the development and use of the SIAT. Interface and interpretation of modelling results were one such commonality between the projects and tools.

In QUEST, one of the interviewees reported that the biggest frontier in such projects is the interface and how it can be improved. It became clear that engaging with the end user, whether that be local/regional policy maker, professionals, or members of the public, and understanding how, what, and why a tool will be used is fundamental in designing the interface. Indeed, the interface should inform the modelling process rather than vice versa.

The most useful properties of an interface included maps, graphs, photographs and visualisations. A clear connection between the choices made by the user and the consequences of those choices as well as the ability to compare scenarios side by side were important points that came from the review. A tool that has all of these features in the interface will be powerful indeed, but one must consider user fatigue and ensure that the information provided is targeted to the user’s needs.

Interpretation of the information provided in the interface at the end of the modelling process can be problematic. This reinforces the need to have a clear understanding from the end user of how this information will be used and what it will be needed for. Qualitative narratives can aid the interpretation of the results by providing a context for the data and information in the output. A facilitated process, with trained SIAT operators, would ensure problems with interpretation of the output were minimal and make for a more thorough treatment of the policy issue.

The international comparison supports the use of the SIAT throughout IA, at the beginning of the policy development process. However, there were some cases where it was problematic for such tools to be used at regional level by regional policy makers because the tools were too difficult and time consuming. This point illustrates that the use of such tools can be problematic and may only be overcome when used by trained staff.

It quickly became clear that for projects and tools to be successful in their application, engagement with the end-users and local stakeholders was vitally important. The importance of understanding, what it is exactly that the end user wants to use the tool for, cannot be understated. Moreover, their involvement will also create a sense of ownership and a deeper level of understanding about the assumptions of the models and scenarios.

In addition to the engagement of end users, the involvement of partner, community and case study stakeholders is similarly important.

Many of the difficulties mentioned in this review arose because the tools being designed were trying to be ‘too many things to too many people’. It is thus essential that the purpose of the SIAT is narrowly defined, and that such a definition is agreed upon by all parties. The lessons from this part of the Institutional Analysis are incorporated below.
9 Lessons

In this section we want to draw lessons from the above analysis of the empirical setting into which the SIAT is to be introduced. We will take several different approaches to formulating such recommendations in order to come to guidelines for the design of the SIAT.

First, we confront the likely SIAT design features with the institutional context that we described above. We discuss the emerging issues in the light of evidence from other studies that developed criteria for the design of assessment studies.

Second, we will provide indications on the way SIAT use may be set-up based on the above empirical results of what determines the way tools are used and based on insights from a normative transaction cost minimizing point of view.

Finally, after dealing with design issues of the SIAT, we will provide indications with regard to how to introduce an assessment tool given our understanding of the institutional environment (tool selection arena and its context).

9.1 The effectiveness of assessments – salience, legitimacy and credibility

We found two interlinked extensive empirical study programmes that dealt with a question related to that of the Institutional Analysis of SENSOR. They are documented in Farrel and Jäger (2006) and Eckley (2001). Both deal with what makes overall assessment exercises effective with regard to policy development. Farrel et al. (2006) write: “effective assessments are more likely to have significant influences on the corresponding issue domain and its development”. In the light of the findings of these authors we therefore implicitly assume that the SIAT wants to be similarly effective for policy development. Jäger et al. and Eckley look at overall assessment exercises, of which modelling tool use may be considered only one part. The SIAT is also an assessment but most likely it will only be a part of a larger assessment combining several methods.

Farrel et al. as well as Eckley found that three features are relevant in determining the effectiveness of assessments for issue domains: 1) salience 2) credibility 3) legitimacy (see also Annex 7). Often these features are in tension because the easiest way of enhancing any single attribute almost invariably cause declines in another. Thus a crucial job for those who design and manage assessment processes is to balance them. Design choices of the SIAT therefore determine to some extent if it is effective with regard to the institutional structure (IA process in the European Commission) that it is embedded into.

Furthermore, for SIAT design, the above insights imply the need to be aware of development of events external to it, such as those described by Eckley (2001) as historical context and user characteristics. From our point of view, specific attention should be given to issues regarding data policies of the Commission, the role of regional actors in IA, the assessment of regions in policy making and the role of land use, and landscape and multifunctionality implications for the different sectoral policies that the EU develops. Similarly, it should be looked at how agendas related with competitiveness, environmental and social interests are developing and who represents them at the European level. Furthermore, it may be considered if the SIAT could also be of interest for use by stakeholders, MSs or regions themselves and what implications this would have.

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30 Credibility: scientific and technical believability of the assessment to a defined user; Salience: ability of an assessment to address the particular concerns of a user; Legitimacy: measure of the political acceptability or perceived fairness of an assessment to a user.

Subcriteria: a) (external) historical context: issue characteristics, linkage, attention cycle; b) (external) user characteristics: concern, capacity, openness; c) (design influenced) assessment characteristics: science/governance, participation, focus.
It should be evaluated whose interests the SIAT may specifically impinge upon, whose stand-
points it supports and whose standpoints it weakens. It may be necessary to engage the relevant
actors. However, the Institutional Analysis cannot answer this question as in fact it depends on
the specific policy proposal that the SIAT assesses. Therefore, SIAT should be run flexibly
engaging actors whose interests are likely to be weakened by the assessment process of a speci-
fic policy. Engagement should furthermore concentrate on those significant actors that repre-
sent the relevant groups at the European level rather than the specific local groups etc. In other
words, in the case of regions regional representations in Brussels should be included in case a
specific region is concerned. Otherwise, if all regions are concerned the Committee of the
Regions may be involved in some fashion or a European network of regions. If all Member
States are involved the Council may be involved or if only one MS is involved this particular
state may be targeted. The principal stakeholders and NGOs are organised at the European
level and should be included accordingly. Given that specifically environmental NGOs see a
tool like the SIAT as beneficial, their ‘counterparts’, economic interests may be specifically tar-
geted to increase credibility and acceptance of the tool.

The Institutional Analysis confirmed Farrel et al.’s findings regarding credibility. Plausibility is
key and a credible process has to be established through which the SIAT is produced. With
regard to scientific rigour the consortium makes the necessary attempts to fulfil this criterion.
Furthermore, plausibility is intended to be achieved through the validation process. It is crucial
for the tool to find acceptance in the political process. The question is how the SIAT deals with
uncertainties. It may be a good strategy to avoid the very early presentation of overly uncertain
results in order to avoid threats to the reputation of the tool.

External determinants cannot be influenced by tool design. SIAT application is only one part of
IA. Crucial for SIAT is the way the overall IA develops. The consortium should keep track of
the issues mentioned above. Modelling tools can be characterised as specifically rigid types of
assessments. Therefore, specific care has to be taken to get the design of the tool right, or to
keep it as flexible as possible.

Farrel et al. present a much later study of the specific design components that are of importance
to designing effective assessments. In the following we discuss them in the context of SIAT
and our knowledge of the institutional environment into which it will be inserted.

![Figure 3](source: Farrel et al. (2006))
Besides the above, more general insights into the role of salience, credibility and legitimacy on assessment studies Farrel et al. specify design issues for assessments. As a general rule they confirm the importance of time budget available for assessments and scope of work and staff needs for completion. Furthermore, they specify that the “most effective assessment processes seem to devote a substantial amount of time and energy to negotiating with potential users the particular questions about which those users are most passionately and urgently interested. Assessment strategies that opt instead to address generic issues of presumed interest to generic users seem rarely to be effective” (Farrel et al. 2006:11).

Similarly, a user’s capacity to “hear” and evaluate the messages communicated in the assessment emerged as important (technical expertise and resources) as well as their attitudes to different, maybe contradicting messages.

The SENSOR consortium tackles these issues through the end user involvement and the Institutional Analysis. We already mentioned the perceived limited and only sectoral relevance of issues of multifunctionality, land use and landscapes in the European Commission. It may be worthwhile to evaluate if more detailed questions from these broad issues are perceived to be of greater relevance. For example interviewees from DG Agri mentioned their interest in socio-economic implications of the CAP for rural societies. The capacity and openness of actors in the Commission varies. However, the technical expertise of various Commission services seems to be increased with the employment of further economists. The key constraint for Commission officials is time. Also, the IA process as such may predetermine significant time constraints. Expertise and openness of desk officers to the dimension the SIAT assesses may be moulded through training and proactive communication of the Sensor Consortium with the Commission. Such communication of research projects serving the Commission is common place and well viewed by desk officers. It may include stakeholders, member states and regions.

Besides the recommendations provided elsewhere in this report we want to report about the the following design features that Farrel et al. mention and reflect about them in the context of SENSOR.

Participation of stakeholders involves costs of human interaction. Different participation methods involve different infrastructure costs and costs of preparing, and carrying out an assessment. Temporal and financial needs depend on the specific method as well as on the features and the number of stakeholders that are to be involved. Features of stakeholders are their training, expertise, and administrative capacity as well as the ability to devote time to the assessment and travel or infrastructure costs that are necessary to participate in an assessment. A more in-depth comparison of the costs of the various participation methods exceeds the scope of this study.

31 Toth (2001:11-12, 29) compares the policy exercise method, focus group technique, the adaptive environmental assessment and management method, simulation gaming techniques with regard to their suitability for the different phases of scenario developments.

Rotmans compares dialogue methods where users are considered as source of information necessary for the analysts to perform the assessment, policy exercises, which build on the tradition of simulation games as flexibly structured process designed as an interface between scientists and policy makers and mutual learning approaches where participation of stakeholders and citizens enriches the assessment by a multiplicity of perspectives (Rotmans, 1998:162).
In line with the findings from the Institutional Analysis specifically time constraints are perceived as prohibitive in participation and modelling rather than financial constraints. Already above, we described the various ways in which the European Commission organises participation as part of IA procedures. The consortium has to decide if it intends to suggest further participation procedures as part of assessing policies through the SIAT. These may rely on the described existing participation tools or introduce other participation methods as they are commonly practiced throughout Integrated Environmental Assessment procedures (see for example: Toth 2001 and Rotmans 2001; Rotmanns and Van Asselt 2002).

With regard to participation the SIAT should be very careful to strike the right balance. Selection of actors should depend on the specific policy proposal the SIAT assesses and the interests that it impinges upon. Already above, we noted that substantive participation beyond actors that are represented on the European level may be counterproductive. Capacity constraints of some actors may have to be overcome so that the European level stakeholders that enhance the credibility and legitimacy of the assessment can substantively participate without stirring up deep controversy. The consortium may get involved in enhancing and improving capacities by offering training and information to desk officers and stakeholders. The SIAT will always only be a part of IA, which itself comprises extensive participation. Overlaps have to be avoided, not least in order to avoid participation fatigue.

Science-Policy: The SENSOR consortium should be well aware of the role of the dimension it assesses for the policy proposal. From the above evidence we concluded that the “dividing line” between science and policy (knowledge creation and decision making) is still reasonably clear (IA is to inform, not to decide). However, this may be increasingly blurred by the fact that so far purely political European legislative entities (EP and European Council) are building up IA capacities. A result may be that representatives of the EP and the Council need to be engaged more actively in the IA of the Commission in the future. This should similarly influence the way the SIAT is run. An issue that clearly doesn’t fall into the domain of SIAT construction is the accountability of the IA process to science or its independence from policy making. The SENSOR consortium may consider this in making proposals for who runs and maintains the SIAT.

Framing: Overarching beliefs that define what an issue is about, the basic worldviews and underlying assumptions are key for the way an assessment frames an issue. In some contexts narrowly focused assessments are more likely to gain credibility, salience and legitimacy. There is little doubt that the SIAT, as it is currently envisaged, is an integrative model. On the other hand, interviewees have confirmed to some extent that the questions they have are often very much focussed. SENSOR therefore has to accept a tradeoff of its approach with a more focussed approach. A question may be to what extent, and how, it is possible to go from the integrative SIAT assessment to more focussed assessments of many of the subquestions that SIAT use implies. The DPIS (Digital Policy Information System) that SENSOR envisages may provide one way to cater for more in-depth analysis.

Quality control is to ensure that the substantive material contained in the assessment report agrees with underlying data and analysis, as agreed to by competent experts. Besides the scientifically agreed practices to ensure quality an institutionalised “plausibility check” as part of running the SIAT would be useful. So far Commission officials check for plausibility on an adhoc basis. Transparency is key for establishing legitimacy and credibility. A recommendation may therefore to keep the SIAT open source. In fact it is not yet decided who will control, run and maintain it.
The empirical results above as well as wider studies of assessment processes indicated that it is important to involve the users of the assessments already into the design stages. The purpose of such an approach is to make the assessment tool suitable to and useful for the political exigencies in which it is to be used. Such participation includes checking assumptions and data sources and involving stakeholders and entities that are crucial for providing legitimacy and credibility to the assessment. Furthermore, several authors specified that the “most effective assessment processes seem to devote a substantial amount of time and energy to negotiating with potential users the particular questions about which those users are most passionately and urgently interested” (Farrel el al. 2006). We furthermore concluded that desk officers rely on tools that are known to them, or that at best have a track record in assessing European policies.

Desk officers are primarily interested in guiding policy proposals to successful adoption and within that scope in furthering the interests of the Commission itself. Therefore, in good IAs they try to answer the questions that emerge throughout the assessment process as relevant to actors that are in a position to otherwise pose obstacles to the policy development process. The policy development community and IA as a deliberative exercise shape the issues that are assessed and on which to gather the knowledge base that is needed to justify and design suitable policies. Substantive preferences of desk officers (or specific outcomes in terms of content of policies) or the Commission seem to be secondary in shaping what is assessed throughout good IAs. Based on this recognition it is obvious that the scientific community together with the SENSOR consortium has to make itself heard within the IA community.

Based on the understanding of what drives IA the consortium should initiate organisational learning of the IA community and policy domains through shaping the values and perceptions of those that are members of the policy domain (Gherardi and Nicolini 2001). The link of policies to the dimensions that SIAT assesses has to be explicated to those participating in IAs. At the same time the SIAT should approximate itself to the needs, vocabulary and questions that members of the various relevant policy domains have in order to make it accessible. One strate-
9.2 Set-up of tool use and transaction costs

Adopting a transaction cost perspective\(^\text{32}\), where asset specificity and frequency determine the way the use of a modelling tool is set up, we can explain that the less the SIAT will be used, the more likely it is that the Commission tends towards a hybrid solution (e.g. framework contract) or even a market solution (one off contracting) with regard to using the SIAT. Nonetheless, it will have to be catered for credibility and legitimacy in the way the modelling (SIAT) tool use is set up. This means that they will have to cater for a good reputation of the entity that does the modelling. Transaction costs in cases where the Commission needs to tender a specific part of an assessment are relatively high, as tendering procedures are complex and time consuming. In fact the specific monetary costs of tendering procedures are less problematic for the Commission than the time tendering procedures take.

The more often the Commission uses a specific assessment exercise, the more it may make sense for the Commission to make framework contracts. In their case not every individual assessment has to be tendered which saves costs, and most of all time. The Commission is even more flexible, when it undertakes the assessments in-house. The DG Joint Research Centre is most likely to develop further modelling and impact assessment capacities in the future. Additionally, in this case Commission officials sense greater trust towards Commission services which further lowers transaction (control) costs.

Transaction costs would be minimised when a sectoral Commission service does the modelling itself. However, the time budget of the Commission services is extremely limited and it rarely allows for Commission officials to do modelling studies themselves. The Commission only does in-house modelling for sectors in which modelling capacity is continuously and frequently needed. The specific set-up in which the SIAT will be used depends largely on the frequency with which it will be used. Given that at the moment few cases could be found where the issues the SIAT assesses are of relevance it is unlikely that it will be used in-house.

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32 Transaction costs are the costs of organising and coordinating human interaction (Challen 2000: 28).
10 Conclusions

This report addresses the question: what makes the European Commission use a specific modelling tool for ex-ante policy assessment? The question has been answered in relation to the envisaged features of the SIAT (Sustainability Impact Assessment Tool) and based on a contextual understanding of the setting (Impact Assessment) for which SENSOR develops its ex-ante policy assessment tool. In this section we want to draw together the findings and the lessons that can be learnt from the analysis.

Implicitly, we extrapolate the behaviour of desk officers/the European Commission in cases where they are confronted with choosing an ex-ante assessment tool like the SIAT. The methodology with which we gathered the empirical material and its categorisation in terms of the Institutional Analysis and Development Framework enables us to make indicative statements about the behaviour of desk officers/the Commission. However, our conclusions have to be treated with considerable caution as a) the SIAT touches on uncharted territories, b) the setting (Impact Assessment) into which it is introduced is highly dynamic and political priorities may well change and c) to some extent this setting may also reflect innovations such as the SIAT.

Good Impact Assessment is a practice derived from Integrated Assessments. Impact Assessment distinguishes itself from Integrated Assessment by its emphasis on usability over methodological and analytical rigour. Each Impact Assessment is different. According to the principle of proportionate analysis only Impact Assessments regarding salient new regulations, substantial revisions or expenditure programmes require in-depth modelling. Salience depends on the type of interests a proposal impinges upon and their political significance at the European level. Salient issues are for example competitiveness, European, national or regional economic development, sectoral economic development or environmental and public health concerns. Economic interests have a much stronger representation at the European level than environmental issues.

The quality of Impact Assessments varies across sectoral administrations and policy domains. DG Environment, and DG Enterprise have a tradition in taking Impact Assessment seriously. DG Tren and DG Regio have a weaker performance in this regard. ‘Good’ Impact Assessments are more likely to occur in domains which are not subject to inter-governmental political bargaining and which do not concern the distribution of European monies. ‘Worse’ Impact Assessments serve to support policy options that have already been chosen before the Impact Assessment is done. We extrapolate the selection of assessment tools for the case of ‘good’ Impact Assessments. ‘Good’ Impact Assessments are integral to policy development. The policy option that is finally chosen is not specified when the Impact Assessment is launched. They are undertaken with strong engagement of the Commission and stakeholders and they undergo the Impact Assessment steps iteratively.

Individual desk officers have different reactions to Impact Assessments. Educational background in economics helps in undertaking Impact Assessments (and using modelling tools). Economic analysis can be a major part of Impact Assessments of salient policies. Consequently, DGs and units that are intensely involved in Impact Assessments recruit economists for Impact Assessments or establish units that provide back-up capacity with regard to modelling. The quality of the Impact Assessment is of increasing importance for getting policies adopted by the hierarchy and the other European legislative bodies involved in policy making. Formal and informal in-house (intra- and inter-Directorate General) and external participation and consultation (stakeholders, concerned parties and implementing bodies) is undertaken using various channels. Additionally the gathering of expertise plays a significant role. Participation and expertise help to improve the quality of Impact Assessments, the policy proposal itself and the argument to justify the measures adopted.
Desk officers have predominantly a procedural, personal preference with regard to policy proposals. It is motivated by career advance which implies gain in remuneration and prestige. Specifically, young Commission officials have an incentive to use the opportunities of policy development to establish a reputation with the administration. Career advance results from successful brokerage between the various interests that impinge upon the Commission’s proposals while at the same time furthering the Commission’s own interests. Commission officials (at all levels) want to produce policy proposals that are adopted by the hierarchy and the other legislative bodies. Desk officers have considerable influence on the substance of proposals. Superiors have less technical know-how but more sensitivity for the political aspects of a proposal. Desk officers have to take substantive issues expressed by superiors on board in order to avoid vetoing behaviour of higher ranks and the legislative bodies at a later stage.

Desk officers are instructed about substantive, sectoral preferences by the ‘client group’ of the sectoral Directorate General. Participation, consultation and knowledge gathering serve the purpose of informing desk officers and the hierarchy of all politically relevant substantive issues that are at stake with a specific policy proposal. Therefore, throughout a ‘good’ Impact Assessment, the substantive preferences of the Commission with regard to a policy proposal are partially formed endogenously.

Outcome orientation of desk officers is expressed through the desire to produce a successful policy proposal. In this sense desk officers act rationally but under significant information constraints. These constraints are compensated for by the consultation, participation and impact assessment process as well as by experience and value sets that are associated with a certain DG and the personal attributes that a desk officer brings into the process (age, nationality, previous experience, education). Furthermore, desk officers apply a heuristic of criteria that guide the way they steer policy development and Impact Assessment. This heuristic is partly codified in the Impact Assessment guidelines. In other words the logic of action selection of desk officers and the hierarchy is complex. Substantive preferences are formed endogenously through socialisation. Choices that a desk officer makes to steer an Impact Assessment and policy proposal towards adoption are more rationally oriented as they may have a direct link to career prospects. However, the dividing line is often not so clear cut.

The SIAT will be a part of the wider Impact Assessment process. It will complement it but should by no means replace it. Rather it may try to draw on the Impact Assessment process in a smart fashion for example with regard to participation and consultation.

When confronted with the choice of an ex-ante policy assessment tool, desk officers are likely to apply the following criteria for deciding if a tool is used or not: Most importantly, only assessment tools are used that answer questions that may emerge or already emerged from the policy development process and that are considered to imply significant impacts. For desk officers to use the SIAT, the Impact Assessment process or they themselves should have concluded that the policy in question has significant impacts on land use, landscapes, multifunctionality or the like. These effects furthermore have to be identifiable at the level of disaggregation of the SIAT.

In the past, only few policy proposals had such impacts. The issues shaping land use are relatively clear to Commission officials (however, depth of understanding seems to vary significantly). Nonetheless, desk officers seem to have limited interest to do this kind of assessment. This is specifically the case in DG Environment, DG Regional Policy and DG Transport and Energy. Detailed land use impacts are perceived to be a matter of policy implementation which is the competence of the MSs. Furthermore, land use planning is the competency of the MSs. However, some desk officers say that the Commission should specifically look at those impacts over which it does not have any competence.
DG Agriculture on the other hand has considerable interest in assessing land use implications of its policies. It is specifically interested in land management changes as a result of European policies and their socio-economic implications.

While land use is a well understood issue, landscapes and multifunctionality are much less understood across the Commission. Desk officers tend to associate the former with aesthetics of landscapes and not with the complexity of ecosystems which constitute landscapes. However, the Commission does not seem to have much interest in this aesthetic dimension of the concept (although related impacts are mentioned in the Impact Assessment guidelines). Currently, also the European Landscape Convention does not seem to have changed this.

The concept of multifunctionality is only known to those who are involved in agricultural policy making. However, it seems to be discredited for a variety of reasons. It outlived itself in WTO negotiations on agricultural policies. It is associated with (biased) environmental arguments, it lacks clear and agreed definition, it lacks analytical depth, it is sometimes interpreted in a normative sense which is politically undesirable. The Commission seems to be at least unsure if it should strive for sustainable agriculture (which it associates with goals/outcomes) or multifunctional agriculture (input/functions of agriculture) (Garzon 2005:16). The impression arises that some of this scepticism towards the concept is based on semantics, or the discourses it is associated with, rather than some of its potential substantive meanings.

Further criteria that desk officers apply to the selection of tools are the following: The tool has to produce plausible results. This means that the results have to withstand intuitive scrutiny or expert knowledge of the terrain about which the tool makes predictions. Plausibility of the results is more important than the degree of accuracy or its innovative potential. Desk officers check for plausibility with experts rather than with policy makers or stakeholders. The tool must either be user-friendly (simple to use) or the way it produces results must be well explained to desk officers. Desk officers have to be enabled to explain the results of an assessment themselves. For significant dossiers desk officers and stakeholders may attend several days of training with regard to modelling. This leads us to the overall most important criterion which is transparency of the overall assessment process associated with the tool. Some point out that transparency is enhanced if the modelling tool is openly available to all actors participating in the policy domain. This includes the data, the scenarios, the assumptions made and the calculations that produce certain results.

Desk officers prefer tools that have a good track record in scientific and at best political assessments. If possible, they would rely on tools that are already used in the Commission and adapt them to their needs. Stakeholder groups may be asked to select ‘independent’ experts to review modelling tools, their input and the way consultants run them.

Numerical data is of increasing significance in European policy making and generally favours modelling where this is technically justifiable. However, data sources are closely scrutinised and a tool should at best only rely on official European data sources such as Eurostat or ESPON. The quality and availability of spatially referenced data may be improved significantly by the currently negotiated INSPIRE directive.

Mapping is welcomed as a way to represent data. The level of disaggregation of the data is chosen in a way that groups data usefully in regard to the question that the Commission has. Regions have a marginal role in policy development so far. If regions want to influence policy making, they either address the Commission or the European Parliament directly or they make the national level act on their behalf. Regions have problems to find a common stance on many issues due to their heterogeneity. On the other hand they are represented in the existing consultative and participatory structures of the Commission (working groups, ad hoc meetings etc.).
The set up in which the Commission makes use of modelling tools depends on the dimension that a modelling tool assesses. Models that look at issues that are of high priority to the Commission such as market development (DG Agriculture) or macro or sectoral economic development (DG Regio, DG Enterprise) are most likely to be studied by specialised units in the Commission itself. A good reputation of the results, flexibility, reliability, and time constraints led to this set up. DG JRC is running more specialised models or strategic relevance. Consultants or experts are contracted for specific one-off studies. To ensure that the above mentioned criteria and others are met by the tools that are developed desk officers are interested in collaborating on modelling tool development. However, their availability is constrained by their limited time and their motivation is lowered by the fact that tools may be available at a time when they already changed position in the Commission.

From confronting the empirical results of the Institutional Analysis with other studies and the normative view of transaction cost minimisation we could derive the following recommendations for the design of the SIAT and the way it should be introduced into the Impact Analysis policy domain of the European Commission.

Also in the future the SENSOR consortium should strive to be aware of issues external to SIAT development. Specifically of relevance seem to be developments of the following issues: data policies of the European Commission (INSPIRE), role of regional actors in Impact Assessment and the role of the assessment of regions in Impact Assessment (specifically considering potential changes due to the European Constitution). The relation between science and policy has to be monitored in the context of specific policies and the changing approach to Impact Assessment by the European Parliament and the Council. The role of land use, landscape and multifunctionality issues in different sectoral policies should be looked at as well as agendas and sectoral administrations associated with competitiveness, environmental and social interests. Specifically, in cases of SIAT application depending on the specific policy domain whose interests the SIAT may specifically impinge upon and whose standpoints it may weaken should be evaluated in advance. Specific efforts may be necessary to include these actors into SIAT application in order to enhance the acceptance of SIAT results. Consultation and participation while the SIAT is run should probably focus on the representations and organised interests at the European level, also considering the minimisation of transaction costs. Participation should be dealt with carefully and it should be limited in order to keep it manageable. Actors that may threaten the seriousness and "objectivity" of the assessment are best not included into an assessment. The participatory capacity of actors that are of great significance to enhance credibility and legitimacy in a specific policy domain has to be taken into consideration. Specific provisions may have to be made in order to enable actors that could not participate otherwise but who contribute significantly to the legitimacy and the credibility of the assessment. For participation the SIAT may rely on the already existing structures that Impact Assessment relies on or it may complement them through participatory methods specific to assessments as outlined by Toth (2001) or Rotmans and van Asselt (2002). Participation could also entail an institutionalised “plausibility check” of the results that the SIAT produces. This would address one of the key concerns of European desk officers in an innovative way.

Besides the overall integrated view the SIAT takes at land use and its multifunctionality it may be useful to identify more focussed questions in collaboration with the potential end users starting from the integrative sustainability/multifunctionality issues that the SIAT addresses. In order to cater for maximum transparency the SIAT software should be made openly available on the internet for stakeholders etc. to scrutinize it.

The frequency of application of the SIAT is most likely going to be relatively low. In other words each individual study would undergo a tendering procedure or the Commission would establish a framework contract with entities running the SIAT for a certain amount of time.
Running the SIAT should include training activities including stakeholders and desk officers to increase legitimacy and credibility. As a trend modelling tools are increasingly run by the European Commission's DG JRC.

For introducing the SIAT into the European Impact Assessment community and the various policy domains, that it is relevant for, an elaborate communication and information strategy should be launched. It should promote the perception of the relevance of land use and landscapes for policies. It should target European Commission officials as well as stakeholders. Communication and also participation should specifically target actors that may feel threatened by the results the SIAT produces. In order to enhance the openness of actors to the SIAT it may be useful to use concepts, definitions, and methods that are in line with those used in the respective European policy domain.
References


Beyers J (2002) Voice and access - Political practices of diffuse and specific interest associations in European Policy making. Arena working papers – WP 02/39


CEC (2002b) Towards a reinforced culture of consultation and dialogue – General principles and minimum standards for consultation of interested parties by the Commission, Com 2002 704 final

CEC (2002c) On the collection and use of expertise by the Commission, principles and guidelines. CEC (2002) 713 final


CEC (2002e) Towards a Thematic Strategy on Soil Protection. CEC 2002, 179 final: Brussels


CEC (2004a) The effects of environmental policy in European Business and its competitiveness – a framework for analysis, Brussels: Commission of the European Communities


Commission working paper (2002) Ongoing and systematic policy dialogue with local government associations


Egeberg M (2002) An organisational approach to European Integration, Arena Working Papers 02/19


Hooghe L (2001) The European Commission and the Integration of Europe. Cambridge:

Cambridge University Press


Kersten G, and Noronha S (1999) Supporting International Negotiation with a WWWBased System available from:


Mazey S and Richardson J (1997), 'Policy framing: interest groups and the 1996 intergovernmental conference (IGC)', West European Politics, 20 (3) 111-33


Annex 1

Exemplary Interview Guidelines

European Integrated Research Project SENSOR (www.sensor-ip.org) – Institutional Analysis Researcher: Andreas Thiel/ Humboldt University Berlin, e: andreas.thiel.1@agrar.hu-berlin.de

Talk with …

This interview is carried out as part of the Institutional Analysis of SENSOR. SENSOR is developing a scenario-modelling tool for assessing the impact of alternative policy options on (regional) landscapes (SIAT – Sustainability Impact Assessment Tool).

The aim of the Institutional Analysis is to create awareness of the institutional environment into which the SIAT is to be introduced (the European Commission – EU COM). Therefore the research principally tries to gather ex-post evidence regarding issues in policy assessment/development. Potentially the SIAT will be used as part of Impact Assessment (IA) in the EU COM.

The following outline is indicative. If agreed the interview will be recorded. Anonymity is guaranteed.

- What is your role and that of your unit in the DG and in European policy making? What are your tasks and since when do you occupy this position?

Impact Assessment in EU policy making

1. Why did Impact Assessment (IA) emerge?
2. What was the attitude of … to IA when it emerged?
3. What significance does IA have for the overall policy making process?
4. How is IA organised in …?
5. Who determines the alternatives that are assessed, the underlying assumptions and the methods of assessment, how?
6. Are IA conflictuous? Which ones? Why?
7. How does the EU COM deal with conflictuous IAs? How is the process of producing an outcome best described?
8. Who and which criteria determine if IAs are subject to Inter Service Steering Groups?
9. How do the ISSGs work and find compromises? What role do formal, informal and hierarchical relations play?
10. In what way and at what stages are regions or MSs involved in IAs?
11. Does participation take place according to formal or informal procedures?
12. What role do new participatory tools play e. g. IPM or expert databases?
13. What role does the assessment of impacts on regional spatial environment, land use, landscapes and their sustainability play in IA?

Evaluation and future of Impact Assessments

1. How are the IA guidelines being respected? What is the attitude of DGs, why?
2. What is the attitude of desk officers, why? What does it depend upon?
3. What is the quality of IAs so far? Why does it vary so much?
4. What role do preferences, knowledge, qualification, disposable time and financial means play for the quality of IAs?
5. What implications would a more detailed, cross-sectoral output of IAs have? E.g. maps on the regional level or statistics?
6. Is consultation among sectoral DGs and DG Research taking place with regard to what instruments need to be developed for IA?
The use of quantitative modelling tools – case examples?

1. What role do modelling tools play in …?
2. What impact dimensions are principally modelled, and in the future?
3. Is modelling in IA used for political or knowledge gathering purposes?

Factors determining the selection of quantitative modelling tools for IA

a) What features of the policy matter to the selection of a specific assessment tool?
   - Salience of the policy
   - Type of output from the policy making process (white paper, regulation, monet./ regulat.)
   - Respective competency of the EU
   - Constellation of interests/ actors/ member states or stakeholders in the policy

b) What role do the features of the data that go into the tool have?
   - Qualitative data and/ or quantitative data
   - Way data has been generated
   - Legitimacy or reliability of data
   - Availability of data
   - Spatial and temporal disaggregation
   - National/regional or official EU data
   - Costs of data provision

c) What role do the features of the tool itself play?
   - Transparency of assumptions and valuations
   - Participatory/interactive /iterative construction and use of the tool
   - Speed of producing results from modelling
   - Scientific validity/acceptance/ track record
   - Who/which entities constructed/run the tool
   - EU funding for construction of a tool
   - Openness to use by anyone or EU COM exclusiveness
   - Perception of procedural fairness
   - Access to additional topic information
   - Previous experience with a specific quantitative modelling tool
   - Costs of running/using the tool
   - Assessment and evaluation components of the tool
   - Way in which a tool has been introduced into the European Commission

d) What role do the features of the output of the tool have?
   - Features of the assessed dimensions
   - Competence of the EU COM
   - Sectors it touches upon
   - Configuration of sectoral interests
   - Priorities of DGs, EU COM and overall political process
   - Economic, social, environmental stakes
   - Presentation/visualisation of the results
   - Understandability and accessibility of the results
   - Assessment and valuation components
e) What underlying consideration guides the decision to select a specific tool?
1. What role do sectoral priorities set at DG or EU Com level play?
2. What underlying priorities matter most: economic, social or environmental?
3. What role do the issues emerging throughout the assessment and consultation process play for determining what is assessed and how this is done?
4. What role does the consideration of the impact of tool application on the policy development process have for the selection of a specific tool?
5. Is a primary issue to assess the negotiation positions of different actors?
6. Do formal or informal criteria guide tool selection?
Annex 2
Anonymous list of interviews for Sensor

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26 interviews – 21 transcribed, 5 notes
Annex 3
Conceptual Background

Sociological and rational choice institutionalism and their combination

An Institutional Analysis tries to uncover the institutions that influence people’s behaviour and the context in which they operate. It provides knowledge that helps us understand actors’ behaviour in specific settings. Obviously such statements require further explanation. Its predictive claims are limited due to the way we approach the Institutional Analysis in the context of SENSOR.

What actually are institutions? In the literature we find different definitions of this term as well as different approaches to their research. First of all institutions as we understand them are not organisations, collectives or the like. Instead, broadly said, they structure social interactions within organisations or somehow delimited collectives and/or delimitable situations. At the European level institutions might play a much more significant role in the policy process, and they may be able to furnish participants with interests, preferences and identities, and even recast them (Egeberg 2002:2). The way we define institutions determines what we search for in our Institutional Analysis.

Peters (1999: Intro) broadly differentiates three ways of conceptualising institutions: for him they can imply values which can be associated with normative institutions, secondly, they may be conceptualised as rules which constrain individual behaviour or thirdly they may describe regularised patterns of social interactions. These different perceptions of what institutions are can be roughly associated with three different stylised types of “new institutionalisms” as identified by Hall and Taylor (1996): ‘historical institutionalism’, ‘sociological institutionalism’ or ‘rational choice institutionalism’. Among others, they distinguish themselves from each other through the definition of what institutions are, the way they affect the behaviour of individuals and the way they emerge and change. Historical institutionalism is seen as most eclectic and hybrid version combining elements of the other two. It looks at more long-term, large-scale dynamics and the role of institutions. Given the issue at hand in the Institutional Analysis of SENSOR and the research question which focuses on micro choice situations that currently undergoes dynamic change we considered it as inadequate conceptualisation for our purposes. Instead, we set out to conceptualise the institutional setting for SENSOR through an inductive, bottom-up dialogue between ‘rational choice’ and ‘sociological’ institutionalisms. Regarding the way institutions are defined, the way they influence behaviour and the way they emerge these two approaches differ as follows:

For ‘rational choice’ institutionalists, institutions exist as they provide gains from cooperation by structuring behavioural choices of people in a world where so-called transaction costs are associated with selecting the most appropriate action. “They tend to see politics as a series of collective action dilemmas” (Hall and Taylor 1996:12).

33 Transaction costs have been first elaborated in the context of market allocations where costs emerge from the fact that it is necessary to discover who has interests in decisions, who it is necessary to include in the decision making process, to exchange information between the parties to decision making, to conduct negotiations leading up to a decision, to monitor subsequent behaviours to ensure that these are consistent with the decision (Challen 2000:29). North (1990 quoted in Dixit 1996) concludes that political markets – and the SIAT is intended for use in policy development - should be beset with transaction costs even more that economic markets, specific due to information constraints. Dixit (1996:46) writes: ‘parties to a political contract are citizens and politicians. However, rarely these are two clearly identifiable contractors, they have multiple parties at least on one side of the relationship. Terms are generally more vague. Enforcement mechanisms of political contracts are diffuse across the political system. The governance structure is characterised by many complex principal agency relationships, where often it is not clear who the agent is. Uncertainty and complexity are pronounced in the political context. Contracts are not explicit, and dispute settlement arrangements are diffuse.”
The institution that forms as a result “survives primarily because it provides more benefits to the relevant actors than alternate institutional forms” (Hall and Taylor 1996:13). DiMaggio and Powell (1991) furthermore specify that for new institutional economics institutions describe regularities in repetitive interactions, customs, rules, which provide a set of incentives and disincentives for individuals. Institutional economists conceptualise these regularities as individuals’ strategy to minimize transaction costs (idem) whereby transaction costs are the costs of organising and coordinating human interaction (Challen 2000:28). They emerge as institutional economists let go of the assumption that the Coase Theorem makes for market transactions34. Dixit (1996) transposed it to the organisation and coordination of human interactions in policy making.

‘Sociological institutionalism’ defines institutions much more broadly...” to include not just formal rules, procedures or norms, but the symbol systems, cognitive scripts, and moral templates that provide the ‘frames of meaning’ guiding human action” (Hall and Taylor 1996:14). It therefore breaks the “conceptual divide between ‘institutions’ and ‘culture’” (idem).

Regarding the way institutions shape individual behaviour Hall and Taylor distinguish a ‘cultural’ and a ‘calculus approach’35, referring to different logics of action selection. The calculus approach is associated with rational choice institutionalism. It focuses on “those aspects of human behaviour that are instrumental and based on strategic calculation” (Hall and Taylor:7). “[I]ndividuals seek to maximise the attainment of a set of goals given by a specific preference function and, in doing so, behave strategically which is to say ...they select those options conferring maximum benefit” (idem). Institutions persist because they embody something like an equilibrium. It follows that the more an institution contributes to the resolution of collective action patterns the more robust it will be. Goals and preferences are given exogenously and the Institutional Analysis investigates the strategic situational setting in which an actor realises exogenously given preferences. In such a situation institutions provide individuals with greater or lesser certainty and information, i.e. information relevant to the behaviour of others, enforcement mechanisms for agreements, penalties for defection and the like. Institutions affect the expectations an actor has about the actions of others and makes them act strategically in response (idem).

On the other hand the ‘cultural approach’ is not strategic but bounded by a specific worldview. It is closely associated with sociological institutionalism and emphasises the role of “cognitive scripts, categories and models that are indispensable for action not least” (Hall and Taylor 1996:15) as they provide ways of interpretation of the behaviour of others. Individuals are assumed to turn to established routines or familiar patterns of behaviour to attain their purposes. Individuals are seen as satisficers rather than utility maximisers. Interpretation of a situation becomes more important than instrumental calculation. In this context institutions provide moral or cognitive templates for interpretation and action (Hall and Taylor 1996:7-8). Many of the conventions associated with social institutions cannot readily be the explicit objects of individual choice. Instead many of them are taken-for-granted and escape direct scrutiny. March and Olson (1989 and 2004) (in reference to Campbell 1963) as principal theorists conceptualising sociological institutionalism, call this type of behaviour following a ‘logic of appropriateness’ as opposed to a ‘logic of instrumentality or consequentiality’. The logic of appropriateness implies a ‘matching of identities, situations, and behavioural rules. .....To act appropriately is to proceed according to institutionalised practices of a collectivity, based on mutual, and often tacit, understandings of what is true, reasonable, natural, right and good.

34 Coase examined the assumptions of perfect information of all participants in negotiations which results in a transaction-cost free model of interactions.
35 The calculus approach is also associated with the so-called logic of a consequentiality or instrumentality (Campbell 1963). The cultural approach is also associated with social constructivism and the logic of appropriateness (see for example Jupille et al. 2003, Risse 2002).
It implies a relatively complicated cognitive process involving thoughtful reasoning behaviour\textsuperscript{36}; but the processes of reasoning are not primarily connected to the anticipation of future consequences as they are in most contemporary conceptions of reality” (March and Olson 2004:6).

For rational choice institutionalism institutions originate from the value they (or a stylised version of this specific institution) provide for the actors affected by the institution. In reference to the field where rational choice institutionalism emerged and originated, an organisation structure is explained by reference to the way in which it minimizes transactions, production or influence costs (Hall and Taylor 1996:13). It focuses on actors’ means ends calculations and orientations towards optimality. “When faced with several courses of action, people usually do what they believe is likely to have the best overall outcome” (Elster, 1989:22).

In sociological institutionalism a new institutional practice is adopted because it enhances the social legitimacy of the organisation or its participants as they are valued in a wider cultural environment. The role of a wider community providing legitimacy is apparent in this. It shows how sociological institutionalism conceptualises institutional change as partially interactive and creative process whereby institutions are socially constructed. Constructivists (stream of thought followed by sociological institutionalism) emphasize arguing and/or deliberation and appropriate behaviour driven by (complex) learning and dynamics of socialization (Risse 2000). Institutions that a community holds and that an actor follows can change therefore. Checkel writes in this regard “[i]f one defines social interaction as a process during which fundamental agent properties can change, then it is clear that rational choice or rational-choice institutionalist arguments have little to say in this regard” (2000:1). Jupille, Caporaso and Checkel (2003:14) write: “...[t]his opens up ... the black box of interest and identity formation, where agent interests emerge from and are endogenous to interaction with institutional structures”. In the case of a deliberative forum inside of the EU appropriate behaviour would be shaped by a “technocratic version of deliberative democracy in which informal norms, deliberation, good arguments, and consensus matter more than formal voting rules which are rarely invoked” (Pollack 2003:125). The predictions of rationalist approaches would in that case fail but it would aim at “deliberative problem solving to maximize collective utilities” (Pollack 2003:137).

The two strands of conceptions of institutions we compared above exist alongside and as Hall and Taylor conclude: “each seems to be providing a partial account of the forces at work in a given situation or capturing different dimensions of the human action and institutional impact present there” (1996:22). Jupille et al. write that rational choice and social constructivist theories in fact are not as starkly opposed as it might seem from the above as firstly much rational choice deals with collectives rather than individuals and assume that individual preferences can be translated into collective preferences. Secondly, in empirical work rational choice theorists do acknowledge the role of exogenous constraints or structures due to resource, informational, institutional or social constraints. The assumption of bounded rationality for example acknowledges that participants are goal oriented and try to be rational but face cognitive limits – rather than the assumptions of complete information used in rational choice theory (see for example Williamson 1985). Yet even under these cognitive constraints, “the optimality function gives rational choice its power and most clearly differentiates it from nonrational choice ...approaches (Coleman and Fararo 1992 quoted in Jupille et al. 2003:13). In other words the role that the outcome, or means ends calculations play for actors’ choices becomes key to finding out if they followed a consequentialist or an appropriateness logic\textsuperscript{37}.

\textsuperscript{36} Three elementary questions: what kind of situation is this? What kind of a person am I? What does a person such as I do in a situation such as this? (March and Olson 1989)

\textsuperscript{37} Jupille et al. furthermore qualify this statement saying that consequentialist and appropriateness logics could be approximated to each other when considering the exact definition of utility as an open ended concept.
Other than following a means-ends logic actors may adequate their actions to the rules a community holds. March and Olsen write “[a] theoretical challenge is to fit different motivations and logics of action into a single framework. ..[A] theory of purposeful human behaviour must take into consideration the diversity of human motivations and modes of behaviour and account for the relationship and interaction between different logics in different institutional settings. ..[W]e can examine their variations, shifting significance, scope conditions, prerequisites and interplay, and explore ideas that can reconcile and synthesise different models” (March and Olson, 2004:19). One logic should not be subsumed under the other because it denies their distinctions.38

For these reasons several authors argue for greater communication between them (Hall and Taylor 1996; Jupille et al. 2003; Rhodes 1995; Risse 2000; Checkel 2000, Egeberg 1998). The work presented here strives to meet this challenge. We basically follow Jupille et al. in their suggestions for ways to do so. In varying contexts and research settings different emphases can be put on one approach or the other (or their combination) based on an appropriate characterisation of the research setting and the questions at stake. Such an approach therefore implies an inductive approach to specifying the conceptualisation of the research setting (and specifically the logic of action selection). the conclusions from such an approach can benefit from the explanatory strengths of the respective approach that has been used to encapsulate a specific setting. Ostrom writes “To conduct empirical research, a scholar needs to select one or more theories to use in generating predictions about expected patterns of relationships” (2005:37). This points to the relevance of adequately diagnosing the logic of action selection in the context of this Institutional Analysis: We will come to different extrapolations (or recommendations) based on our empirical work as they depend on the mode of action selection (approximated with sociological or rational choice institutionalism) which best suits the setting into which the SIAT is introduced.

Jupille et al. (2003) propose a dialogue between approaches based on domain of application.39 It implies that we need to examine which logic of action selection applies to which domain such as for example different policy sectors, levels of analysis or the like. Below, we will try to specify ‘domain of application’ even further distinguishing when one conception applies and when the other (or a combination of the two).

**The IAD Framework**

The IAD framework conceptualises the action arena as composed of actors and the action situation. Collective or individual actors are to be described through (1) preferences that actors assign to potential actions and outcomes; (2) the way actors acquire, process, retain and use knowledge contingencies and information; (3) the selection criteria actors use for deciding upon a particular course of action; (4) and the resources that an actor brings to a situation (Ostrom et al. 1994:33-37). Action situations have to be separated out which “refer to a social space where individuals interact, …solve problems…” (Ostrom et al. 1994:29). They are assumed to be composed of the same elements no matter if the arena is a market, hierarchy or hybrid form. The action situation is composed of participants and certain variables that are expressed as different types of rules that define the positions of actors, their authority, the scope

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38 The authors propose several variables from which the relevance of the two logics may depend: hierarchical where situations at different levels may demand different logics of action, prescriptive clarity, where a hypothesis will be made on which logic dominates the other. Also, application of one logic or the other may vary with what is possible and therefore with the resources available to the actors. They may also be decisive in the way that different logics apply to different purposes (making or applying policies). Alternatively, different logics of action may apply across the time dimension in the sense of sequential ordering. Finally, logics of action may change as a result of specific experiences (March and Olson 2004:20-22).

39 They propose four types of dialogue between the two logics of action: competitive (either or), domain of application, (temporal) sequencing, and subsumption.
of outcomes linked to their actions, the rules that transform actions into outcomes, the information that is available to them in relation to their position, and the payoffs associated with the outcomes. They are influenced by exogenous variables such as bio-physical/material conditions, rules and attributes of the community40 (Ostrom et al.1994:29-33). Action arenas are located in a set of variables that describe the community in which it is located.

**Figure 4** The Institutional Analysis and Development Framework

Source: adapted from Ostrom 2005: Ch. 1, 44

Collective or individual actors are to be described through (1) preferences that actors assign to potential actions and outcomes; (2) the way actors acquire, process, retain and use knowledge contingencies and information; (3) the selection criteria actors use for deciding upon a particular course of action; (4) and the resources that an actor brings to a situation (Ostrom et al. 1994:33-37). Accordingly, Ostrom et al. propose: “an institutional analysis might begin with an analysis of these factors first [rules on multiple levels (constitutional, collective choice, operational), attributes of a physical world and nature of a community] and proceed to identify some of the typical action situations that result from particular combinations of these factors” (idem: 37). Furthermore, different action arenas (e.g. that of policy development, assessing its impact and selecting a tool to do so) can be linked, as action situations often overlap so that reciprocal relations emerge between the various action arenas. Linkages can be organisation- or rule-ordered competition interlinkages. In the case of organisationally interlinked arenas the “outcomes of any one situation becomes the input into the next one.

The intermediate outcomes of an early situation may not have much value unless the full series of linked situations is completed” (Ostrom 2005:32). The organisation as a whole is seen as many action situations linked together by prescriptions specifying how outcomes from one situation become inputs into others (idem, 33). Once the empirical data on an action arena is gathered and structured through the categories of the IAD, the underlying idea is that we will be able to derive inferences about the likely behaviour of actors in a situation and their logic of action selection.

The IAD requires us identify the *participants* of the actions situation. Participants are the entities and individuals that have a functional relation to the outcome that is produced. The number of participants matters along with their status as collective or individual and their attributes

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40 As already mentioned above these are not exogenous in our conceptualisation of the research setting, instead they may change for example as a consequence of deliberative practices which may change actors’ preferences in turn.
such as age, gender, experience etc. We need to identify the possible positions of participants in relation to the authorized set of actions. Different positions are endowed with varying power over the outcome. Participants in different positions can take a varying set of actions at different stages of a process which we need to identify. They can affect outcomes through their actions. The action is the variable that a participant in a specific position controls. The outcome is dependent on, or influenced by the action. Obviously, the level of control varies, and in many cases the action–outcome linkage may be uncertain so that participants are in a position of risk with regard to the outcome they generate. The latter is also called transformation function. The function describes, how participants’ actions produce intermediate or final outcomes. It can be certain to varying degrees. The information that participants have with regard to the overall action situation varies. The level of information about physical relationships, transformation function or participants varies which has an influence on the actions of participants. Payoffs define the outcome of actions in relation to costs and benefits through which a participant values an outcome. Payoffs weigh actions and outcomes.

The elements mentioned are seen as minimally necessary for the construction of theories and models of settings where outcomes depend on the acts of individuals (Ostrom et al. 1994:32). These elements conceptualising an action situation are describable through a set of seven rules which structure the respective action situation: position rules specify positions and the number of participants that holds each position, authority rules specify the set of actions assigned to each position, aggregation rules specify the transformation function that map actions into intermediate or final outcomes, scope rules specify the set of outcomes that may be affected, information rules specify the level of information available at a certain position and payoff rules specify the costs and benefits associated with certain actions and outcomes (see also Ostrom et al. 1994:41-42). In addition to the elements describing the action situation it matters how often this action situation will be repeated. Depending on the number of times a situation is repeated the existence of transaction costs, trust and reputation have different implications for the behaviour of individuals (Ostrom 2005:28).

Furthermore, ‘to bring this Institutional Analysis to life’ we have to describe the actors which are linked to this action situation in order to come to indications about their behaviour. We equate actors with individual persons or collectives. Actors can be participants in many action situations. According to Ostrom the relevant variables are: individual preferences, and how they are formed. Actors distinguish themselves through the way they process information. This may be complete or bounded. In a situation with perfect information actors know the action that each participant can take at every stage of a decision process, the outcome that can be reached by the various moves of participants, and the preference ranking placed by each participant on all outcomes, and all actions taken by all participants are known to all others (Ostrom et al. 1994:34).

Alternatively, actors may use selection criteria as heuristics as the information needed is often not present. They “may involve complex processes but not the necessity of undertaking a full analysis and choosing the maximal set from it” (idem: 35). Finally, actors vary with regard to the resources they have. For example, actors may have time or money constraints to undertake certain actions. Finally, the action arena is set within a community of actors. Attributes of the community that Ostrom names are generally accepted norms of behaviour, level of common understanding about action arenas, extent to which preferences are homogeneous, the distribution of the resources among members. Furthermore, above we conceptualised preferences as potentially endogenous. Therefore, we examine if the overall community is influencing the preference formation of specific actors in a continuous fashion.

41 Here we leave out so-called boundary rules which specify how participants enter or leave a specific position.
Annex 4
International Dimension

The Projects and their tools

This section provides information about each of the projects and tools. For each tool there is a brief description of its function and history, an overview of its modelling and development and some of the difficulties experienced. This is followed by a conclusion with an indication of the lessons learnt and possibilities for future use. The aim of this is to understand how and what features of the tool’s design, modelling and interface led to its successful, or unsuccessful, use.

For the international dimension an initial review of SIAT-like tools and projects was conducted and five projects were selected for evaluation (Ecological Sustainability Tool (QUEST), Canada; INSURE, EU; INSIGHT, EU; INSPIRE, EU; EvoLand, Australia). The criteria for this selection were that the tools should be similar to SIAT in one or more of the following characteristics: Should be related to land use; Should be related to Impact Assessment; Must involve stakeholders in part of the process; Must be scientifically robust; Must have a regional focus with data disaggregated to regional scale; Must use qualitative and quantitative methods; and, Should have an interactive interface design.

A review of literature was used to analyse the five projects and examine their history, modelling and development, and use. As the most similar to SIAT and SENSOR, telephone interviews were held with a variety of project participants, including Principal Investigators, Co-Investigators and Investigators in QUEST and INSURE. These included interviews with three QUEST project members and two INSURE project members. The interviews were analysed and triangulated as far as possible with evidence from available literature.

QUEST

An Introduction and History:

QUEST, A ‘Quite Useful Ecosystem Scenario Tool’ was the brainchild of John Robinson at the Sustainable Development Research Initiative at the University of British Columbia (UBC), Canada. The project was originally an academic research project and funded by the Canadian Social Science and Humanities Council but also involved community partners. It has since evolved with several different editions, MetroQUEST being the most recent and developed commercially by Envision Sustainability tools, a spin off company from the original project.

QUEST models began with the Lower Fraser Basin (LFB). QUEST developed in the mid to late 1990s and has since been applied in five other countries. QUEST is a microcomputer-based scenario generation and evaluation system, which is intended to encourage thinking about sustainability in a regional context. Through QUEST, single users or groups of users can explore the consequences of different possible future scenarios in terms of their social, economic and environmental characteristics.

QUEST illustrates ‘real-world’ situations and provides a summary of socioeconomic and ecological data from recent surveys and research. The goal is to acquaint users with the realities of decision-making, specifically the uncertainties involved, necessary trade-offs, and role of subjective values. QUEST, however, does not simply present these scenarios as static illustrations. Instead it actively involves the user in their creation and evaluation in the form of a computer game.
MetroQUEST, the most recent iteration of QUEST is an integrated modelling system that allows users to instantly see the connections between choices and consequences while they explore alternative future scenarios for specific regions. It includes the following features to allow the user(s) to:

- Create 40 year regional scenarios in interactive workshops;
- Explore choices and outcomes in real time;
- Score the performance of alternative scenarios according to priorities;
- Evaluate scenarios using visualisations, maps, indicators and graphs;
- Compare possible future scenarios side by side; and,
- Save and export key scenarios for more detailed analysis of reporting. (Envision Website 2005)

Modelling and Development:

QUEST is an integrated model that encompasses several individual submodels and figure 1 (pp 12) illustrates the interactions and feedbacks among its various submodels. There were three steps to the model development for QUEST which consisted of “(a) identifying methods for incorporating important issues identified by the Community Engagement Component into the model, (b) identifying important interdisciplinary connections among sectoral sub-models, and (c) designing, implementing and testing the sub-models, connections and user choices” (Robinson et al. 2001). Whilst none of those interviewed felt that there were any issues or problems with this strategy or procedure, it was noted by two interviewees, that the scope of the project was too broad and tried to achieve too much.

Relating to the model development, two steps were taken by the project team that were consequential in the use and success of QUEST. These were 1) the inclusion and input of ideas from project partners (i.e. Community Engagement), and 2) a series of modelling workshops according to sector. In both of these developments the areas of focus were determined through an issues identification process with stakeholders. The importance of these steps was that there was a significant input of expertise from outwith the project team and perhaps, most importantly, it meant “engagement in the process of model design contributed to the relevance and legitimacy of the GB-QUEST interface...as it created a sense of ownership” (Robinson and Tansey 2006). The modelling workshops also helped to give focus and additional expertise on the sub-models used in addition to a series of design criteria that emerged from the literature on backcasting, and participatory integrated assessment (Carmichael et al. 2004).

It was highlighted in the interviews that much of the modelling was interface driven – that is the QUEST team sought to create a user-friendly interface modelling, a fundamental reorientation of approach from that traditionally taken in such projects, which was to create the models first and then create the interface. This builds upon the use and involvement of stakeholders as discussed above, in that what stakeholders saw was the most important (i.e. the interface). Indeed, the QUEST interface, based on the game ‘Sim City’ is fundamental in its attraction to a wide variety of potential users.

Use of QUEST

Originally, QUEST was designed for use by non-experts so that they could be involved in learning from creating scenarios and alternative futures. Since then, the targeted users for QUEST have changed throughout its evolution with the latest version, MetroQUEST being targeted up to the level of regional decision makers from public and private organisations. Many lessons have been learnt from the use and application of the various iterations of QUEST. Indeed, in the interviews, one of the Investigators said: “We realised that we had to think more carefully about how the model was going to be used and the context it was going to be used in”.
Reported in the interviews by several of the QUEST team was that any tool should be designed with the audience in mind. For example, QUEST was not designed for use by public audiences for detailed site or intervention specific policy analysis. Instead, the choices offered to the user should be thought of as desired outcomes, rather than the policies that would accomplish those outcomes (Carmichael et al. 2004). Although QUEST was not designed for use by policy makers it was reported in the interviews that it often was used as part of the design of regional policy and it was remarked that it needed to be used early in the process and that its use was considerable when given credibility by workers who had gained public trust. Furthermore, local workers who had earned a reputation as a reliable and trustworthy person aided the credibility of the use of QUEST in these circumstances.

As was highlighted by all of the interviewees, and in recent literature on QUEST, one of the most important findings in terms of the use of QUEST was that the tool worked better ‘on tap not on top’ in that it was best used as a tool in discussion, not for discussion. That is, QUEST enabled a group of users to understand what they wanted the future to look like and this was the most important issue. The project team found that the best way to engage users on this issue was to keep QUEST in the background and very much only a secondary focus of the workshops.

One of the aims of QUEST was to be able to create a tool that could be used online to reach a maximum number of users. There were numerous technical problems with this but the biggest and most insurmountable one was that QUEST was too complicated and users could not make sense of it. The research team quickly found that for QUEST to be useful, it needed a highly facilitated and scripted workshop process. Indeed, “the biggest question, where people do need coaching and help with access, is really in the wider process in which the model gets used”. Building on this finding, Envision now sells the QUEST process, by providing custom designs and delivering workshops to engage regional stakeholders in the regional planning process.

The importance of understanding who the user is and what they want from QUEST was repeatedly emphasised in the interviews. Indeed, this is often because of the different interpretations that can be made from the QUEST modelling outcomes. It was the view of one of the interviewees that QUEST should also involve further evaluation whereby the user’s interpretation of the QUEST output, as a qualitative narrative, would aid future development. It was alluded to that the outputs of QUEST, particularly the qualitative narratives, “matter as much as, and sometimes more than, qualitative data” and that more importance should be attached to how the user interprets this.

Conclusions
There were several lessons learnt by the QUEST team on the design, modelling, interface of QUEST of use to SENSOR when developing the SIAT which include:

- Any model should be used early on in the planning/policy making process and local workers who have much local public credibility should advocate its use.
- The use of SIAT should be facilitated, as interpretation is very important.
- Qualitative narratives matter as much as, and sometimes more than, quantitative data (they should also be facilitated to aid understanding).
- The SIAT interface should be informed by use and user requirements, not by modellers.
- More time should be spent on a smaller amount of quality engagement than a large number of shorter engagements.
- The biggest learning curve in the whole process was that it is not enough to focus on the tools but that just as much time, money and effort must be put into the process for using the tools.
- The biggest frontier is the interface and how it can be improved.
These concluding points about QUEST will form the basis of recommendations for SENSOR and the SIAT, which will be dealt with in the conclusion of this report.

- Administration/Management of junior researchers.
- Project too broad in scope – tool was expected to do too much.
- Possible implications for SENSOR:
  - How will SIAT be used? Will there be a process through which users will be coached? Who would be involved in this?
  - Can the scenarios be changed/adapted by the user?
  - Could the user write a narrative based on what they interpret the results as? This would be incorporated into the tool. How?

**INSURE**

**Introduction and history**

INSURE a “Flexible Framework for indicators of sustainability in regions using system dynamics modelling” is an ongoing research project co-financed by the European Commission under the 6th Framework Programme. The objectives of INSURE are to develop a complete method to describe the development of selected European regions until 2040, and to contribute to shared knowledge in combining sustainable indicators to ensure comparability at EU level (Caratti et al. 2005). INSURE will also produce regional indicators for sustainable development, which will constitute a useful tool for supporting decision-making that is flexible enough for a joint assessment of regional sustainability at the EU level. The flexible framework concept aims to help overcome some of the main limitations that sustainable development indicators usually face, including a lack of integration, a lack of data, sectoral barriers, a lack of consensus between different stakeholders and a lack of compatibility between regions.

INSURE’s approach to the problem of assessing regional sustainability based on indicators develops a methodological system, which attempts to combine tools already available in the areas of indicator modelling and construction. The INSURE framework for sustainability assessment, the Systems Toolkit, consists of the System Input and three interacting elements: the INSURE system model, the INSURE System mapping and the INSURE Sustainability Indicators. System model and System mapping describe the cause-and-effect relationships of a region where the former focuses on quantifiable aspects providing a retrospective analysis and the latter on qualitative aspects in a retrospective view ending at the current state (Green 2006). The System model and System mapping processed then generate output for the INSURE sustainability indicators. The INSURE project uses four case studies on the regions of Limburg (Netherlands), Lombardia (Italy), Pardubice (Czech Republic) and Antalya (Turkey).

**Design and Modelling**

In terms of modelling, the objective of INSURE is to develop a generic model that enables a simple transfer of the model between regions to allow for comparability between the region. The basic idea of this modelling is to provide a structural framework of equations that is equal for any region implemented in the model, and to differentiate the regions by varying the parameterisation (Ravetz 2006). Thus, the modelling, by design, will be able to be used by any region within the WEU and allow them to make it sensitive to their region by changing the socioeconomic and environmental characteristics contained within it.

The basic driver of the system model is the population mode because population constitutes the major force for many environmental pressures as well as for socio-economic impacts. The second driver is economic development. The driving models of the system model are similar to SENSOR, in that they are completed by sectoral models e.g. energy, water, transport and exogenous inputs (Schade 2006).
The idea behind the two tools of system model and system mapping is to divide the aspects of regional sustainability into a quantifiable and commonly relevant part and a qualitative and rather region specific part (Ravetz 2006). The former part would be implemented within the system model and the latter within the system mapping. The system model comprises the quantifiable and comparable elements of a region. It generates quantitative indicators and a picture of European regions that enables their comparison.

The system mapping consists of a set of templates for potential regional discourses. This approach leads to a qualitative system map of interaction and relationships within a region. In addition, the strength of the relationships is categorised to provide rankings of importance for the different causal chains (Schade 2006).

The first case study used was Limburg and was informed and documented by EUROSTAT. The reason that Limburg was used in the project was linked to the amount and quality of data from EUROSTAT and because of the important role of industry, agriculture, and transport in the region.

In terms of user interface, discussions and workshops with stakeholders from the regions reveal an ambiguous picture concerning user-friendliness: though users with a fair knowledge of tools like MS EXCEL and Online databases from EUROSTAT are able to adapt the System Model to their region, it seems too complex for policy makers themselves to work on such a model, which means that regional technicians and planners would have to carry out such a task. Of course, this emphasises the need for some kind of facilitated process in how to use INSURE. S-Model regions will have to spend money to adjust the basic template put in the data and get it in the right form, which, of course, may be prohibitively expensive.

**Use of INSURE**

Whilst the target audience is regional stakeholders, the INSURE project is still being developed so there are no real examples of how it has been used and what SENSOR can learn from its use. Nevertheless, in the interviews, several questions on the intended use of INSURE products were asked and some conclusions have been drawn.

It appears that there is a strong need to talk to on-the-ground-users and stakeholders to see if expectations and delivered functions match up indeed, ‘who is going to use it and what use will it be?’ Moreover, from the discussion above, it appears that the INSURE tool may be too difficult for regions to use themselves.

**Conclusions**

Despite the fact that INSURE has not yet been completed; the project is far enough ahead of SENSOR to enable some observations to made to aid the development and use of SIAT. These observations include:

- Need to talk to on-the-ground-users and stakeholders to see if use, expectations and analysis match up;
- Scope/Coverage is quite wide and everything that goes on within a region is within the scope of the INSURE project;
- Too difficult for regions to do it themselves. S-Model regions will have to spend money to adjust the basic template, put in the data and get it in the right form; and,
- The biggest question is who is going to use it and what use will it be to them.

These concluding points about INSURE will form the basis of recommendations for SENSOR and the SIAT, which will be dealt with in the conclusion of this report.
**INSPIRE**

**Introduction and history**

Developed in 1995 by the InterNeg Group at Carleton University, INSPIRE is designed to conduct negotiations on the Web. It is a support system based on analytical models rooted in decision and negotiation analysis. Developed in the context of a cross-cultural study of decision-making and negotiation, the system has been primarily used to conduct and study negotiation (Kersten et al. 199a).

INSPIRE views a negotiation as a process occurring in a particular context. It comprises a series of activities beginning with pre-negotiation which involves preparation for negotiation, proceeding through the actual conduct to the negotiation during which messages, arguments, offers and concessions are exchanged and evaluated by the parties until an agreement is reached, and finally, implementation of the agreement (Kersten et al. 2000).

INSPIRE currently addresses the preparation, conduct and post-agreement re-negotiation aspects of the whole process, i.e.,

1. Preparation involves understanding the negotiation problem, issues and options, and preference elicitation via hybrid conjoint analysis leading to the construction of a utility function;
2. The conduct of negotiation involves support for offer construction and counter offer evaluation by means of ratings based on the utility function, and graphical representation of the negotiation’s dynamics; and
3. Post-settlement involves computation of packages that dominate the most recent compromise.

**Modelling and design**

It can conduct negotiation anonymously, evaluate the goodness of an offer, and review the history of a negotiation. INSPIRE supports the communication among negotiators by exchanging messages (Chiu et al. 2005).

**Use of INSPIRE**

In addition to the above three major functions there is a range of smaller support features. Also, during the offer exchanges, the user may re-evaluate issues and options and modify his or her utility function.

The project designers extol benefits of the INSPIRE system and its expandability. Within INSPIRE, some objects can be introduced and some removed according to the change of the system’s purpose of operation. This flexibility increases the potential uses of INSPIRE (Kersten et al. 1999b).
**EvoLand**

**Introduction and background**

Funded by the National Science Foundation, Australia, EvoLand (for Evolving Landscapes) is an example of a modelling tool that supports the development of spatially explicit, actor-based approaches to landscape change and alternative futures analysis (Bolte 2005).

EvoLand provides a general-purpose architecture for representing landscape change within a general paradigm incorporating actors, policies, spatially explicit landscape depictions, landscape feedback, and adaptation; application-specific components are “plugged in” to EvoLand as required to model particular processes.

EvoLand provides a framework for representing:
1) a landscape consisting of a set of spatial containers, or integrated decision units (IDU’s), modelled as a set of polygon-based geographic information system (GIS) coverages containing spatially-explicit depictions of landscape attributes and patterns;
2) a set of actors operating on a landscape, defined in terms of a value systems that couple actor behaviour to global and local production metrics;
3) a set of policies that constrain actor behaviour and whose selection and application results in a set of outcomes modifying landscape attributes;
4) a set of autonomous process descriptions that provide for modelling non-policy driven landscape change; and,
5) a set of landscape evaluators modelling responses of various landscape production metrics to landscape attribute changes resulting from actor decision making. (Gregory et al. 2006)

Figure 2 (pp. 22) provides an overview of the conceptual framework for EvoLand.

**Modelling and Development**

The fundamental assumption of EvoLand is that scarcity is a principal driver for changes in human behaviour so that if a landscape (or a landscape characteristic) becomes scarce, it will result in changes in human behaviour (Gregory, S et al 2006). The conceptual overview of EvoLand is presented below. The key components are Policies, Actors, Actions, Policy and Cultural Metaprocesses, Autonomous Landscape Change processors, and Landscape Evaluators and together, these elements provide a basic platform for assembling actor-based models of landscape change.

In Evoland, the behaviour of the actors is governed by the actors ‘values’ and the ‘policy set’. Actors choose which policies in the policy set apply based on a comparison between their values and the policy intentions. The system as a whole develops policy responses that feedback into emergent spatial and temporal patterns of both cultural and biophysical functions.

EvoLand enables actors to assess alternative decisions about land management to weight the relative utility of potentially relevant policies to determine what policies they will select to apply at any one point in time or space. That is, EvoLand enables actors to question site attributes (i.e. Spatial Query), the effectiveness of the policy (determined by evaluative models) and presents outcomes associated with the selection and application of the policy. In addition to this, EvoLand supports interaction between actors via two mechanisms: 1) neighbour influence on decision making and, 2) actor membership in organisations promoting a specific value system (Bolte 2005).
Use of EvoLand

EvoLand was most recently used to conduct a series of alternative futures analysis in selected areas of Willamette River Basin, Oregon USA. The focus here is on land use or land cover change, using a 50 to 100 year analysis period. EvoLand was being used specifically to identify policy characteristics that lead to more or less vulnerable landscapes, and to understand the critical linkages between the complicated human and natural systems that collectively generate landscape change in Willamette River Basin (Gregory et al. 2006).

Within the EvoLand Williamette River Basin application, the project team worked with a group of knowledgeable stakeholders to develop three alternative ‘visions’ or scenarios for the future that is, maps that demonstrated the combined effects of policy decisions on urban, rural residential, agriculture, forestry, natural lands and water uses, across the entire basin at 10 year intervals to the year 2050. The stakeholders also helped to validate that the visions developed by the researchers reflected a range of plausible policy options and citizen viewpoints. Thus, in common with QUEST and INSURE, this indicates added credibility given to a tool when local stakeholders, who have much public trust, are involved.

Conclusion

Significant issues remain in EvoLand and these include:

- Model validation; and,
- Interpretation of the information provided in the model outcomes.

These concluding points about EvoLand will form the basis of the recommendations for SENSOR and the SIAT, which will be dealt with in the conclusion of this report.
**INSIGHT**

**Introduction and Background**

INSIGHT was developed in the mid to late 1990’s by Russell Gorrdard at CSIRO, Australia. The INSIGHT concept is of a spatially explicit modelling system capable of exploring the implications of land use policy alternatives under plausible price and climate scenarios for the next 20 years (Gorrdard 2002). The purpose is to provide natural resource policy makers with insight into how the catchment behaves as a system, where the relevant system includes environmental, economic and social issues. A high priority is to provide a balanced and integrated overview of these different aspects and their potential interactions.

INSIGHT is designed to explore the extent to which policies in the natural resource area may affect rural communities and the implication of rural adjustment for the management of natural resources within the catchment. It enables strategic exploration of the likely effectiveness of different policy options. It is designed to encourage people to learn about the circumstances when policies might fail and the areas where they are likely to be most effective. It also provides tools, which will help uncover the reasons why policies have failed to perform as expected.

**Modelling and Development**

INSIGHT was developed for the Lachlan catchment in central New South Wales. The prototype model consists of agricultural production point models linked to a spatial hydrological model simulating the implications of various types of land use for stream flows and salinity. A model of farmer decision-making allocates land to different uses based on a weighting of three indicators: economic performance, agricultural sustainability and conservation outcomes. Three different farm types are defined that differ in size, preferences and restrictions on production options. A model of farm adjustment driven primarily by demographics reallocates land among the three farm types. Farm population, employment and production link farm activities to a model of regional employment and population adjustment.

Indeed the principal functions delivered include:

- Provide a modelling framework that integrates across issues and outcomes that have been identified as important to various sections in the community.
- Provide a comprehensive data set covering a range of catchment issues in a format that is easy to explore and query using the modelling tools.
- Link drivers of change with the resulting system wide outcomes in a quantitative but transparent way.
- The impact of policy options, including how they influence farmer’s decision making. (Gorrdard et al. 2001)

In terms of stakeholder involvement, the INSIGHT process has involved mental mapping exercises with various community groups to improve understanding of the different aspects of the problems and to tap local and specialist knowledge. This has not only helped to inform the model but also aided its application and use as there was more ‘buy in’ from members of the community.

Finally turning to the interface, the INSIGHT model has been designed in such a way that the user can track trends in key variables over time which enables them to explore the causes and implications of the trends and to determine the impacts of different policy options (Gorrdard et al. 2001). Such an approach provides a clear chain of consequence for the user and makes for consistent and coherent policy making.
Use of INSIGHT

INSIGHT has been used to provide regional policy makers with a clearer understanding of the systems they are managing, allowing them to explore what futures different policies may lead to, and where conflicts among policy mechanisms and goals may exist. The modelling information is used in several ways:

- Using causal tracking software. This allows users to identify the complete range of issues that may be affected by a particular change, and trace the indirect impacts of these changes throughout the system. Causal tracking, does not however identify the direction or magnitude of the change, neither does it identify the spatial distribution of the change.

Therefore:

- As a series of graphs of how key variables change over a 20 year time frame. This can be done for the catchment as a whole and for selected areas within the catchment. The user can explore the sensitivity of these futures to a range of policy options under a range of scenarios.

- As scenarios that capture various uncertainties and possible future events in consistent themes to allow the impact of policy options under different conditions to be readily explored.

- The actual model, its functions and data are displayed in a user friendly way to allow users to explore the specific assumptions and data, and if necessary to change these relationships to explore the importance of them in determining certain outcomes. (Goddard et al. 2001)

While INSIGHT has been applied and used it is difficult to fully evaluate the effectiveness of its use based on the literature without speaking directly to one of the project team.

Conclusion

The INSIGHT prototype was used in 2001 at the Department of Agriculture to analyse the impact of land use policies broadly similar to those being considered by the Lachlan catchment management board. The main lessons learnt from this application were as follows:

- The representation of the social impacts should be maintained, and could serve as a useful independent source of social analysis for catchment management boards; and,

- The model’s strengths include the transparency of the models assumptions and the ability to change base data sets (Gorrdard et al. 2001).

These concluding points about INSIGHT will form the basis of the recommendations for SENSOR and the SIAT, which will be dealt with in the conclusion of this report.
Annex 5

Context – history and background of Impact Assessment

Before IA was launched in the European Commission in 2002 with the publication of the first guidelines various types of issue specific assessments already existed (specifically business IA and various versions of environmental assessments of sectoral policies). In theory policy proposal had to be screened with regard to their impact on business, or the implementation of environmental regulation. Further assessment initiatives were launched at that time with regard to specific issues such as public health or gender. Also, policy development processes varied significantly between the various sectoral DGs. Agriculture and Environment claim that their previous policy development practices were very similar to those introduced with IA (Int. 3, 17, 16).

In the second half of the nineties the Commission has taken considerable blame for public unease with European integration. This was re-iterated in spring 1999, when the College of Commissioners of Jacques Santer resigned in the face of allegations of nepotism, fraud and mismanagement. Already before 1999 every Commission service had undergone screening of organisational and managerial practices. These efforts were inspired by public sector reforms and an import of New Public Management (NPM) ideas (see also Hooghe 2001:141-144 on the crisis of the Commission). New Public Management emerged from pressures (1) to slim down the state and make it more effective and cheaper, (2) to improve the performance of the state in which citizens are perceived as clients, and (3) a shift in public service values towards an improvement as well as a reduction of the state.

The evidence that strategies such as privatisation, and restructuring public services have been successful is contradictory. IA practices respond to ideas of “good governance”, which “incorporate democratic and participative values which give greater weight to accountability than efficiency, while recognizing that citizens want governments to be efficient too” (Minogue 1998). A new Commission that came into office with Romano Prodi in 1999, felt the need to improve the internal policy development practices in the European Commission. In 2000 reforms were undertaken in order to “tackle three major problems: the inefficient use of limited administrative resources, ineffective financial control procedures and complete lack of human resources policy” (Hall 2000:11). Specifically pointing towards the subsequent development of IA Hall furthermore states: “The Commission has a poor record of dropping peripheral activities and re-directing underused resources” (idem: 12). Therefore, management tools are introduced which are to integrate planning of activities. Furthermore, “[t]he lack of coordination between departments in Brussels has become acute. Some directorate generals have, in the past, been run virtually as private fiefdoms. More rigorous annual planning is to enable each department to meet its most pressing objectives” (Hall 2000:12). A further underlying aim was to make the activities of the European Commission more transparent to the citizen and to explain them better. Efforts to increase transparency and the need for knowledge-based justification are viewed as reactions to the loss of legitimacy after the resignation of the Commission lead by Jacques Santer and overall bad press for the Commission. At the time the Council, the MSs, the EP, and the European Economic and Social Council and the Committee of the Regions (CoR) pressed for changes in the way policies were developed including IA. The principal aims were laid out in the European Commission’s governance paper that came out in 2001. The European Commission aimed at better involvement and more openness, better policies, regulation and delivery (CEC 2001).

42 Aims are likewise (a) to expand the knowledge base to increase the quality of EU policies, (b) to make public administration accountable to society as a whole, (c) to mobilise political interests and enhance direct participation of citizens, (d) to create a trans-national democratic public sphere (see also Kohler-Koch 2005)
For Kohler-Koch this was one step towards establishing the term ‘participatory democracy’ in EU jargon. She notes that it hides significant ambivalences, competing concepts and objectives. “The debate started with reflections on improving governance performance by enlarging the expert basis of EU institutions with the help of interest groups, then turned from output to input legitimacy by emphasising open access, transparency and responsiveness, and finally concluded with the codification of ‘participatory democracy’ as constitutional principle” (Kohler-Koch 2005:5).

IA draws its legitimisation from the phrases “proposals must be prepared on the basis of an effective analysis of whether it is appropriate to intervene at EU level and whether regulatory intervention is needed? If so, the analysis must also assess the potential economic, social and environmental impact, as well as the costs and benefits of that particular approach. A key element in such an assessment is ensuring that the objectives of any proposal are clearly defined”. These issues are spelled out in more detail in the Action Plan “Simplifying and improving the regulatory environment” (CEC 2002) which is commonly referred to as the “better regulation agenda” of the European Commission.

At the time IA was driven by DG Enterprise with its mandate from the Mandelkern report and the Laeken council. At the same time a second strategic document adopted by the European Commission aimed at a similar exercise, although with different substantive background. DG Environment drove a similar type of assessment procedure based on the sustainability agenda that emerged after the Gothenburg council. The assessment procedure it developed was to serve two purposes: the integration of environmental considerations in policy development practices of other sectors (Environmental Policy Integration – EPI) and to provide for an instrument that helped DG Environment justify its proposals in regard to their impact on the economy. The “European Union Strategy for Sustainable Development” states that “sustainable development should become the central objective of all sectors and policies. This means that policy-makers must identify likely spill-overs – good and bad – onto other policy areas and take them into account. Careful assessment of the full effects of a policy proposal must include estimates of its economic, environmental and social impacts inside and outside the EU” (CEC 2001a).

IA is widely perceived as taking up these two streams with its objective: “to improve the quality and coherence of the policy development process. ...to contribute to an effective and efficient regulatory environment and further, a more coherent implementation of the European strategy for Sustainable Development”. “IA is intended to integrate, reinforce, streamline and replace all the existing separate IA mechanisms for Commission proposals” (CEC 2002a).

The working groups from DG Enterprise and DG Environment came together and assessed the two assessment procedures as compatible. Apparently, the emphasis of DG Environment’s approach was more ‘looking outside of the box’ (Int. 4) while DG Enterprise is in general more concerned with competitiveness implications of policies43. Further communications that the Prodi Commission issued at the time and that have to be viewed in this context arc: “Towards a reinforced culture of consultation and dialogue – General principles and minimum standards for consultation of interested parties by the Commission” (CEC 2002b), and “On the collection and use of expertise by the Commission, principles and guidelines – improving the knowledge for better policies” (CEC 2002c).

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43 Indicated also by Commission Staff working document which provides a guideline to analyse the economic mechanisms and effects of European environmental policy on business and its competitiveness (CEC 2004a).
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Commission officials that have been interviewed as part of this Institutional Analysis associate IA with these various processes, documents and their aims (Int. 2,3,4,9,10,11,13,17,24,21,18). Specifically those DGs that did not have structured in-depth policy preparation procedures (only DG Agriculture and to some extent DG ENV) associate IA, if properly carried out, with a ‘culture change’ within the Commission (Int. 13,4,15,18,24,5). This culture change is viewed as having various aspects: first, in consequence consultation is becoming more structured and important, second transparency of policy making and justifying policy proposals in a knowledge based fashion comes into focus.

The policy development process itself becomes transparent and documented and the material can be used for outside communication instead of being lost. Cross-sectoral communication is enhanced much earlier in the policy development process. An important element of IA is to assess the best way to achieve an objective in cost-benefit terms for increasing the effectiveness of policies. Desk officers denominate this the economic analysis of policy options. These conclusions were confirmed by the fieldwork of the Institutional Analysis. As one official put it: such review processes, adaptations and refinements of the guidelines have to be seen as extremely positive as they illustrate that the procedure itself (IA) influences policy making and is taken serious (Int. 4). In practice apparently only extensive and salient IAs (e.g. REACH (Registration, evaluation, authorisation and restriction of chemicals) or Cafe (Clean Air For Europe)) initiated the necessary culture changes and re-organisation in policy development in the various services that were concerned.

It is acknowledged that policy preparation as a consequence has become much slicker and more time-consuming (Int. 5,15,24). It is stressed that IA at most accompanies political decision-making but by no means replaces or modifies it (Int. 13,18). The way IA actually influences policy making largely depends on the technical understanding policy makers and stakeholders develop for IA and their willingness to instrumentalize this knowledge for the political argument (Int. 11,9). Where technological means, knowledge base and political actors allow for it, IA can potentially result in a change in the way arguments are presented. It can lead to a ‘rationalisation of the debate’ (Int. 24,9).

IA has been introduced in 2002 with a first communication (CEC 2002a). This was followed by the IA guidelines for desk officers issued in the end of 2002. They include an extensive technical annex. Subsequently, calls for revisions and improvements were expressed by several MSs in the Council for Competitiveness and by experts and stakeholders. In consequence an “Inter-service IA working group” has been established to examine and evaluate IA experience that far. It has consulted stakeholders and individuals. Many considered the first guidelines for IA inadequate for guiding the practical efforts of desk officers to undertake an IA (Int. 13,4). Desk officers from many different sectors considered them as not sufficiently clear on the steps and considerations that an IA involves. In 2005 an evaluation document has come out, with the name “Impact Assessment: Next Steps” (CEC 2004). Its conclusions were based on 50 extended IAs that had been undertaken since the procedure had been initiated\textsuperscript{44}.

\textsuperscript{44} 50\% of the overall number of items on the working programme.
The document states that IA practices start to become a stable part of Commission working practices. Increasingly training in IA is offered and taken up. Principal criticisms are unequal application of the procedure across the various policy domains, unbalanced consideration of the three dimensions (environmental, social and economic aspects) which are to be assessed as part of IA and insufficient resources and time slots in the services to produce valuable IAs in all cases (CEC 2004:4). A Defra study of IAs throughout 2003 concluded that little explicit attention had been granted to the environmental dimension that far (Wilkinson 2004). On the contrary most emphasis had been given to short term economic and competitiveness considerations (see also: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety 2004).

For some people IA and therefore also ex-ante modelling tools can serve as strategy towards Environmental Policy Integration (EPI) (Coffey, 2004) among many other practices that have been introduced with the same aim with varying success. On the whole enhancing the consideration of the environment in other sectoral policies on the European level has not had the desired success in the past. Lenschow diagnoses an “overall tardy – though slowly accelerating yet sectorally varied process towards EPI in the EU” (Lenschow 2002, p18).

Specifically the consideration of environmental objectives in agricultural policy on the other hand has improved similar to regional policy. However, many consider the results as very modest so far (Lenschow 2002). Desk officers expect that environmental concerns will be sidelined further in the future given the current emphasis on the Lisbon Agenda (Int. 2,7,3,21).
Annex 6
Participation as part of IA

Consultation should be proportionate to the implications of the proposal. Stakeholder participation is to start as early as possible. It can serve different objectives throughout the IA process: clarification of the nature of the problem, objectives, policy options, impacts, or comparison of policy options. The choice of consultation tools depends on who needs to be consulted, on what, on the available time and resources and on the stage of the process at which consultation is undertaken. “Target groups and sectors which will be significantly affected by or involved in policy implementation, including those outside the EU” (CEC 2005:10) should always be included. However the specific combination of MSs, regions, sectoral stakeholders like private sector, industry or non-governmental organisations can be adapted flexibly. Tools include: questionnaires, focus groups, seminars and workshops (CEC 2005). While some of them are to inform the public about policy initiatives others may provide input to the Commission.

Ad-hoc meetings can be useful if only few meetings are necessary to discuss an issue and no permanent group is needed. Open hearings are often used to discuss a policy issue. Often written submissions are asked for before public hearings are called. They are to enable finding a consensus among those affected by a policy. For certain sectors such as for example business the European Commission maintains stable panels (similar to Eurobarometer as standing survey of public opinion in general). It draws on the opinions of 2700 businesses across Europe.

A tool for Web Consultation has been developed under the Interactive Policy Making initiative (IPM). It enables to create structured online questionnaires, which are completed by stakeholders on the internet for obtaining their feedback. The larger the potential sample the more it is advised to create closed questions. Finally, software is available to the Commission which allows undertaking interactive discussion fora on the web with regard to specific topics (e.g. the future of Europe).

Several authors evaluate the potential of information technology for participation and their democratic potential. “Computerised information technology has brought …the possibility of the re-emergence of direct democracy on a large scale” (as opposed to representative democracy) (Korac Kabadse and Korac Kabadse 1999:213). It can enhance the degree and quality of public participation. On the other hand it makes the assumption of universal access to information technology and that people know how to use it. There are several dangers with this: it could lead to excessive participation, resulting in plenty of opinions but no informed dialogue and even less consensus. This has been confirmed as a danger of by the field work. Electronic democracy may still only motivate a minority and the average person may not have the resources, time, ability or inclination to become an expert on an issue. It may therefore rather create the fiction of participation than effective participation.

The collection of expertise is another form of communication about the draft proposals of the Commission. It principally serves as input to policy development. In the phase of researching topic desk officers often get in touch informally with the expert community. Furthermore, increasing expertise is collected. A tool to facilitate this is the Commission’s web-based application SINAPSE e-network45. With regard to the way expertise is gathered and used the Commission tries to follow a self-imposed code of conduct (see also CEC 2002c). Key is the representativeness of the selection of experts and their independence. A problem is that many experts are part of these advisory bodies as well as they represent MSs in the Comitology procedure which surveilles implementation activities of the Commission.

45 http://europa.eu.int/sinapse/sinapse/index.cfm
Furthermore, the Commission runs a number of advisory bodies (up to 500 in 2000), which can provide valuable input. Expert committees consist of national officials and experts which were nominated by national governments but which are not viewed as government representatives. They are more influential usually than Consultative Committees which are composed of representatives of sectoral interests and funded by the Commission without reference to the national governments. Expert bodies are more valuable to the Commission as they include the political dimension of MSs which the Commission needs to know about for steering further policy development appropriately. Independence is less valued in the case of expert committees than in the case of Consultative Committees.

They have some potential to feed into the Commission’s policy making in terms of initiation, drafting or even implementation of policies (Nugent 2001). The advisory groups are run by the DG in charge of the relevant policy domain. In principle however, they should assist the Commission as a whole. The Commission tries to establish advisory bodies that are representative of a sector. All advisory bodies are listed in the Commission database CONECCS\(^\text{46}\).

Kohler-Koch assesses the overall efforts of the Commission to redress the ‘democratic deficit’ through participation in a very realistic fashion. She links the performance of the new rules and procedures to the already ambiguous conceptual base that underlies it. Organised interests and experts are to convey plurality of interests to the EU institutions and bring them closer to the people. However, the EU does not live up to these proclaimed high principles. Kohler-Koch further remarks that more inclusive consultation strategies have given “general interests a stronger voice and have strengthened the legitimacy of arguing over bargaining” (Kohler-Koch: 2005:17). Policy formulation and decision making at EU level has become more transparent and has attracted more public attention. Nonetheless on the whole she remains sceptical with regard to the effectiveness of institutional engineering in the context of the EU. Her scepticism is rooted in the interests of the main EU actors, the unfavourable features of the EU polity and the low level of social integration of European societies all of which make the bridging of the democratic gap more difficult.

\(^{46}\) http://europa.eu.int/comm/civil_society/coneccs/index_en.htm
Annex 7
Assessment design choices, salience, credibility and legitimacy

Farrel et al. as well as Eckley found that three features are relevant in determining the effectiveness of assessments for issue domains: 1) salience 2) credibility 3) legitimacy. Often these features are in tension because the easiest way of enhancing any single attribute almost invariably cause declines in another. Thus a crucial job for those who design and manage assessment processes is to balance them.

![Figure 5: A conceptual framework for considering effective assessments](Source: Eckley 2001:7)

Furthermore, Farrel et al write. “[t]o make matters more difficult, the relative importance of salience, credibility, and legitimacy in making an assessment influential changes as an issue develops. Tradeoffs change as an issue progresses from early stages… toward later stages” (Farrel et al. 2006:10). Besides the design features of the tool, all three, and specifically salience furthermore depend on external events. Eckley introduces several determinants below for the proxies salience, credibility and legitimacy:

47: (external) historical context, (external) user characteristics and assessment characteristics. Farrel et al. (2006) indicate factors that should be taken into account for making assessments more salient, credible and legitimate (see also Annex 7). With regard to the three features of assessments and their implications for the effectiveness of the assessment Farrel et al. write: “An assessment is salient to an actor if …that user deems the assessment to be relevant to current policy and behavioral decisions. …An assessment that lacks salience is one that asks questions in which a particular user is not interested. [M]aking assessments salient involves ensuring that participants in the assessment context are drawn from organisations that contain the users that might find the assessment salient. [Still,] an assumption [initially] given little thought [by the designers of the assessment] can become a major focus of debate. …[S]alience of an assessment …depends to some degree on coincidence with external events. [Furthermore,] a legitimate assessment process is one in which the process was fair and conducted in a manner that allows users to be satisfied that their interests were taken into account. …A key observation …is that an assessment cannot promote knowledge regarding facts and causal beliefs without simultaneously, if often implicitly, promoting certain goals and values over others.

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47 Credibility: scientific and technical believability of the assessment to a defined user; Salience: ability of an assessment to address the particular concerns of a user; Legitimacy: measure of the political acceptability or perceived fairness of an assessment to a user.

Subcriteria: a) (external) historical context: issue characteristics, linkage, attention cycle; b) (external) user characteristics: concern, capacity, openness; c) (design influenced) assessment characteristics: science/governance, participation, focus.
For this reason individuals and organisations in policy debates are quick to evaluate how any assessment affects their interests …An assessment that runs counter to the interests of an organisation may still be accepted as legitimate by that organisation if they believe that their interests and concerns were accurately represented in the assessment context ….and credibility of the assessment will be examined even harder.

At the extreme, where the outcome of an assessment yields a direct threat to key interests, an assessment user (or participant) may refuse to accept the outcome, possibly citing uncertainty as the reason. Frequently, legitimacy is an issue when an assessment is perceived as recommending behavioural changes by one group of actors that would disproportionately benefit some other group of actors. Increasing the perception of an assessment as legitimate for particular participants in an issue domain often can be accomplished by engaging representatives whom those participants believe voiced their views, goals and concerns or by allowing those decision-makers to participate in the assessment” (Farrel et al. 2006:10).

“Credibility refers to the assessment’s scientific and technical believability to a defined user of that assessment. …[T]he potential user of the information must be convinced that the facts and causal beliefs promoted in the assessment correspond to those that the user would have arrived at…First, an important criterion involves the conformance of the new information to competing sources of information. …Second, assessments are often deemed credible based on the process by which they were created…by ensuring that the assessment “passes muster” with respect to standards of scientific rigor and process, such that those decisionmakers who cannot assess the validity of the findings directly will be willing to view the information as credible based on such process criteria. Third, assessments can also be deemed credible based on the credentials of the participants which may help to document that the participants of the assessment are both experts and trustworthy. Fourth, credibility also is a function of the degree of consensus on an issue and the correspondence between the information being evaluated and if a consensus exists on it. When an assessment makes claims regarding an arena in which considerable uncertainty and variation in scientific opinion exists, either about facts or causal relationships, the credibility of an assessment may prove hard to establish” (Farrel et al. 2006:8-11).

**Farrel et al.’s issues in assessment design**

**Participation** is a central issue influencing the legitimacy of the assessment, issues around who is involved into the process as well as its salience and credibility. However, “[e]xperience challenges the assumption of many assessment designers that more participation is always better” (Jäger and Farrel 2006:284). Representative, legitimate, broad processes can take a lot of time and money and can often promote significant controversy.

Therefore, a process designed to maximize legitimacy may dissolve into adversarial arguments and prevent an assessment from being completed (Jäger and Farrel 2006). Hereby it has to be distinguished between nominal and active participation. It may be motivated by interest, commitment and/or, reputation. Substantive participation requires training, expertise, and administrative capacity as well as the ability to devote time to the assessment (VanDeveer and Dabelko 2001 quoted in Jäger and Farrel 2006:286). It can comprise partners, clients, stakeholders and other users. It can vary substantially from developing the initial scope of work for the assessment to day to day conduct of the assessment to the communication of the results. Reasons can be to increase the diversity and views of actors involved, or to ease the implementation of subsequent measures. Capacity constraints may limit the ability of some to participate and to include diverse voices and expertise. Political considerations may also be involved.

Assessment organisers may have a self interest to generate new insights or shape the research agenda, while there may also be reasons to limit participation, or to separate policy makers and scientists in assessments. Encouraging participation can have tradeoffs. Specifically, including
users and stakeholders, who often have clearly defined interests in the assessment’s outcome risks harming its credibility. The process could be perceived as politicized, threatening users’ and others’ perceptions of its technical quality. On the other hand those who participate in the planning stages of an assessment are more likely to perceive the process as fair and one that takes into account interests and viewpoints (Jäger and Farrel 2006:286).

Science/Policy Interface: Interactions between scientists and policymakers can take on different forms. Each group must maintain its self-identity and protect its sources of legitimacy and credibility. Boundaries between the domains are commonly negotiated. Jasanoff (1990:244) writes for example “the issue is not whether there are boundaries between science and policy but where they are and how and why they are located where they are”. The fit of assessments to institutions depends on the state of the issue at hand (level of political contestation, maturity, science), the history of previous assessments, and the scope of the assessment. Depending on the state of the “issue evolution” the design of the sciencepolicy interface must take different forms. Agrawala (1998, quoted in Jäger and Farrel 2006) writes: “when the issue is on the scientific agenda but has not achieved widespread political attention … the interface can be quite sharp, with the scientific community assessing the state of the art of their knowledge of an issue and communicating this to a distinct policymaking community. When … the issue moves higher on the political agenda, institutions that allow closer interaction between scientific experts and policymakers have proven more successful”.

Iterative assessment processes are often most effective, as are those that are structured as continuing, progressively improving assessments of the same issue. “Assessment experience shows that the choice of an assessments’s institutional setting matters a lot – not only by showing the content of an assessment, but also by influencing the way in which an assessment is perceived (Eckley 2001). Organisations that are accountable to both policy users and scientific communities have helped to ensure effective assessments in many of the cases (Jäger and Farrel 2006:290).

Uncertainty is a key aspect of research in environmental science and technology. An important feature is that it is dealt with. Many scientific assessments fail to give adequate treatment to the extremes of the distribution and instead focus their attention on the central tendency. Dissent is a logical consequence of uncertainty. The way an assessment deals with dissent is important. Either it may use some form of consensus rules, it may avoid contentious issues altogether or it may establish competing or parallel assessment processes. Stakeholders involved in assessment processes have different levels of tolerance of uncertainty (Keykhah 2006).

Framing and overarching beliefs that define what an issue is about, the basic worldviews and underlying assumptions are key for the way an assessment frames an issue. Key questions are how narrowly or broadly should assessments be focused. It has implications for who is involved in the assessment. Integrative assessments are not always the most effective strategy in all situations. In some contexts narrowly focused assessments are more likely to gain credibility, salience and legitimacy.

Scale: Environmental assessment and management increasingly recognize the importance of scale and cross-scale dynamics in understanding and addressing global environmental change. Scale is an important design feature that is often given insufficient attention. Most issue domains have a multiscale nature of biogeophysical and human systems.

Assessment capacity refers to the ability of relevant groups, organisations, or political jurisdictions to meaningfully engage and participate in an assessment and to sustain that ability over time. Capacity requires possessing the necessary linguistic, scientific, and technical skills, material capabilities and organisational support. It can be grouped into scientific (expertise),
administrative (organisation to process information), or financial capacity (funds). In relation to participation new technology offers opportunities to enhance capacity.

**Quality control** is to ensure that the substantive material contained in the assessment report agrees with underlying data and analysis, as agreed to by competent experts. It is linked to questions about what makes up expert opinion and who is an expert. It can be linked to legitimacy.

**Transparency** is key for establishing legitimacy and credibility. It implies that “interested observers can readily see into an assessment process and judge for themselves the data, methods, and decisions used in the process” (Farrel et al. 2006:17). The level of information required to assure transparency needs to vary. Second, transparency will be easiest to achieve if standard procedures exist to make the necessary information available and if these procedures are institutionalised. Providing for transparency is more difficult in the case of computer models, because some of the most widely used models are proprietary. A solution proposed therefore is open-source software or a multimodel comparison that establish an agreed upon scenario to drive different models.
Annex 8
Transaction cost perspective on set-up of tool use

Very broadly defined, transaction costs are the costs of organising and coordinating human interaction (Challen 2000:28). They emerge out of the assumption that actors’ rationality is bounded – “behaviour is intendedly rational, but only limitedly so – and opportunism [exists] which goes beyond simple self-interest” (Williamson 1997:8). Economists propose that actors aim principally to minimise transaction costs in the way they set up human interaction.

An assessment study is such a case of human interaction. Irrespective if it is based on modelling or not, Rotmans defined assessments as: “a structured process of dealing with complex issues, using knowledge from various scientific disciplines and/or stakeholders, such that integrated insights are made available to decision makers” (Rotmans 1998:155). It implies all kinds of transaction costs due to manifold principal agent relationships: costs of finding information, costs of coordinating actors with regard to the content of modelling and its output, costs of running the tool itself, costs of participation, costs of communication and costs of controlling the way the tool is run. Transaction cost economics suggests that, in function of certain characteristics of the specific transactions\(^ {48}\) transaction costs vary.

Transaction costs are influenced by trust among actors (legitimacy and reputation of those who do the modelling) by costs of communication and contracting (e.g. administrative costs of making a contract and tendering procedures), by asset specificity of the investment into a specific relation (investments into understanding a specific model that would be lost if another model was used with another contractor). In accordance to the characteristics of transactions, governance structures can be aligned, minimizing transaction costs. Williamson distinguishes three generic modes of governance: markets, hierarchies and hybrids. He suggests three principal characteristics of transactions: asset specificity\(^ {49}\), frequency of the transaction\(^ {50}\), uncertainty.

Transaction cost economics compare different set-ups of governance structures with regard to the implications they have for transaction costs. Here we could introduce a fully fledged transaction cost analysis including information economics and analysing the various principal agent relations in policy development we mentioned above for comparing the way assessment exercises are and should be set up. However, we only want to focus on insights regarding the way the use of the SIAT may be set up and the considerations that may influence this.

A market solution with regard to SIAT set-up would imply a tendering process for each assessment. A hierarchy set-up would imply that the SIAT should be run by a sectoral service of the European Commission. A hybrid arrangement would imply that for example a research Directorate of the Commission or an agency of the EU runs the tool or even a non-EU actor under a long-term framework contract. Furthermore, as we are investigating interactions at the science policy interface that can have significant implications for policy development, we qualify our insights from the extension of transaction costs economics to the specificities of policy making (Dixit 1997).

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\(^{48}\) “a transaction occurs when a good or service is transferred across a technological separable interface. One stage of activity terminates and another begins” (Williamson 1985: 1).

\(^{49}\) The more asset specific transactions are the less the assets that are deployed in their regard can be redeployed.

\(^{50}\) Frequency of transactions addresses how often does the transaction or human interaction involved take place.
From the empirical evidence above we concluded that relatively few policy proposals may be eligible for assessment with the SIAT. Nonetheless, it may well be that running the SIAT will require significant expertise. In other words, the frequency of the transactions that the SIAT will be involved in, may well be low, while the asset specificity may be high. Both favour a solution in which the use of the SIAT is outsourced from the European Commission. These results were confirmed by the interviewees for this type of modelling exercise. Asset specificity varies among the various set-ups. They are highest for the hierarchical set-up, while we can assume that they vary little between the market or hybrid set-up. We can furthermore assume that opportunity costs, and costs to control them, are highest in the case of markets and hybrids, and lowest in the case of hierarchies. Frequency adds to this reasoning in the following way: If the modelling tool is not used very often, relatively high control costs are only spent rarely. On the other hand, the relatively high, asset specific investments in case of a hierarchy set up are spent without generating much benefit from them. Frequency of use of the SIAT is likely to be relatively low, therefore its use is likely to be set up in the form of a market or hybrid institutional structure.
Annex 9
Scenarios in EU policy making

The EEA studied the strengths and weaknesses of scenario exercises (Greeuw et al. 2000:91-92). It singled out several crucial points for making scenario exercises instructive for policy making: participatory development of scenarios, two-way integration of scales (cross-scaling concepts), integration of surprises resulting in more peripheral scenarios, balanced integration of environmental, social, economic and institutional processes, integration of various scenario methods, explicit inclusion of a wide variety of perspectives, translation of long-term policy recommendations to a short-term policy agenda. As potential pitfalls the authors identify lack of comprehensiveness and too much detail, integration should include the consideration of tradeoffs and mutual interplay, stringent documentation is essential, scenario groups should provide a heterogeneous and balanced representation of actors, and the methodology by which a scenario study was produced should be clarified. Furthermore, the report points out that many scenarios are too modelling tool oriented which makes the underlying narrative limited. On the other hand modelling tools cannot include all the richness of narratives of scenarios. Therefore, the study concluded that it seems to be most promising to use modelling tools to check the underpinnings of models (see also van der Belt, ?). To what extent these conclusions of scenario studies are also valid for ex-ante modelling tool use in the context of IA is open.
## Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CAP</td>
<td>Common Agricultural Policy</td>
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<tr>
<td>CoR</td>
<td>Committee of the Regions</td>
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<td>DG</td>
<td>Directorate General</td>
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<td>DoW</td>
<td>Description of Work</td>
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<td>EP</td>
<td>European Parliament</td>
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<td>EPI</td>
<td>Environmental Policy Integration</td>
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<td>EU</td>
<td>European Union</td>
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<td>IA</td>
<td>Impact Assessment</td>
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<td>IAD</td>
<td>Institutional Analysis and Development Framework</td>
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<td>IPM</td>
<td>Interactive Policy Making</td>
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<td>MS</td>
<td>Member States</td>
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<td>SENSOR</td>
<td>Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects of Multifunctional Land Use in European Regions</td>
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<tr>
<td>SIAT</td>
<td>Sustainability Impact Assessment Tool</td>
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<tr>
<td>SPP</td>
<td>Strategic Planning and Programming</td>
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<tr>
<td>DG TREN</td>
<td>Directoral General Transport and Energy</td>
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<tr>
<td>DG Regio</td>
<td>Directorate General Regional Policy</td>
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<tr>
<td>DG Agri</td>
<td>Directorate General Agriculture</td>
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<tr>
<td>DG Env</td>
<td>Directorate General Environment</td>
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<tr>
<td>EEA</td>
<td>European Environmental Agency</td>
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<tr>
<td>DG JRC</td>
<td>Directorate General Joint Research Centre</td>
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<tr>
<td>Int.</td>
<td>Interview</td>
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