The Policy Use of Environmental Indicators - Learning from Evaluation Research

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Abstract: *Environmental indicators and monitoring systems are increasingly used, but what does the use of indicators mean for policymaking? The article exploits indicator theory and the evaluation research literature to develop an analytical framework so as to study the policy uses of indicators. The paper then provides a tentative analysis of the so-called Transport and Environment Reporting Mechanism (TERM) developed by the European Environment Agency (EEA). The results suggest that a limited direct policy use of TERM occurs while so-called 'symbolic' use is detected. This may partly be due to the short history of the TERM system and partly to the lack of accountability mechanisms. The article concludes that the analytical framework and the concepts derived from evaluation research are useful starting points, but that further research should extend the analysis to other policy contexts (national or local) and broaden the methodology to incorporate interviews.*

Key Words: Indicators, transport, policy, monitoring, evaluation

1. Introduction

Indicators have come into widespread use. They serve to measure and report on a range of issues from environmental quality and economic performance to progress towards sustainable development. An important role ascribed to indicators is thus to provide *policymaking support*. This role is reinforced by various institutional mechanisms: standardised concepts, monitoring frameworks, reporting procedures, etc. In this way indicators also represent particular ways to conceptualise problems and solutions. Indicators are not merely technical or "innocent" instruments for stronger surveillance and reporting. They are also elements in what has been termed as a political struggle over the contents of the process of 'ecological modernisation' of society (Hajer 1992).

The topic of the research reported in this article is to question the use of indicators in policy making: How and to what extent are they used? Do they fulfil their stated purpose, or do they serve other 'hidden' functions, or are they simply ignored? And, how do indicators influence policymaking? It is a challenge for indicator research to develop an approach that can address those rather difficult questions. The main contribution of this article will be to explore the literature of evaluation research where the use of information in policy making has been studied extensively. From this literature, we will derive a tentative analytical framework to conceptualise the policy use of indicators, and then apply it to an actual indicator system.

In this paper, the specific focus is on the role of indicators in promoting the *integration of environ-*

mental protection in sector policies more specifically into *transport policy*. In many countries the transport sector has been identified as a key contributor to several environmental pressures (ECMT 2000). In the European Union transport has been singled out as a target sector in need of a stronger integration of environmental protection into 'mainstream' policy making (European Council 1998). As part of the so-called 'Cardiff' process, the European Transport Council of Ministers has adopted an Integration Strategy to that effect (Council (transport) 1999). A key element in that strategy is a system of indicators, the so-called Transport and Environment Reporting Mechanism (or TERM) maintained by the European Environment Agency (EEA 2000; 2001; 2002).

The TERM system is highly relevant for the current topic of this paper. First of all, as we will see, TERM has been explicitly designed to match the objectives of European transport policy suggesting high policy relevance, usability and impact. Secondly, TERM is a pioneering system serving as a 'role model' for several indicator systems currently being developed in other areas (e.g. according to Bosch 2001).

The main purpose of the paper is thus to explore linkages between indicators and policies in order to develop a framework to guide empirical research in the use and impact of environmental integration indicators on policy making, using the TERM case as an exploratory device. The analytical framework and the conclusions concerning the TERM system should not be seen as final but rather as stepping-stones for further research.

2. Approach and Method

The general approach of the analysis is transdisciplinary. It draws inspiration from technical literature on indicators as well as from several areas within current social science, including evaluation research, and policy studies. A basic aim is to transcend the traditional instrumental view on indicators without loosing it completely.

The main body of research to be drawn upon is the literature on evaluation research, more particularly research on the use of evaluations (Weiss, 1997; Feinstein 2002; Shulha et al 1997; Albæk 1995, 1988; Vedung 1995; Dahler-Larsen 1998). This literature is relevant, mainly for two reasons. The first is that indicator systems and evaluation represent similar activities in which systematic information is collected and distributed in order to enable and support 'improvements' in decision making through various feedback mechanisms. Both are applied with increasing frequency in current policy making. The second reason is that the questions of use and effects on policy have been extensively studied in evaluation research.[1]

Notwithstanding those similarities, there are also important differences that should be kept in mind. While 'evaluations' usually attempt to estimate various outcomes of a specific activity or program, 'indicators' are often much broader in scope, addressing a wide range of conditions in various natural and human systems (e.g. Sustainable Development). This suggests a more indirect linkage from indicators to policy than in the case of evaluations. On the other hand, indicator systems provide focussed quantitative information which lends itself to direct instrumental interpretation, while policy evaluation methodologies often give a more qualitative diagnosis of the 'evaluand'. The evaluation results can then be more prone to differing interpretations of needed action, than may be the case for seemingly 'objective' indicators. Finally, evaluations are often one-off events and may make sense as such, whereas indicator systems refer to a time cycle of repeated measurements. This suggests the possibility of indicator-assisted policy learning processes, but may also lead to routinised and schematic responses.

The empirical part of the article, in which the TERM system is explored, is based on document analysis. Two types of documents are considered. The first type is the TERM reports themselves, which lay out the contents of the indicator system and framework as well as its intended functions. The second type is a range of policy documents, which we would expect to reflect use of TERM, and to have been effected by it somehow. In the current analysis, only a small set of 'primary' EU policy texts has been included in this second category. A range of other 'secondary' but potentially relevant texts has been

[1] The review of evaluation theory and practice by Christie (2003, p. 8) asserts "…There is consensus (…) that the most heavily studied issue has been evaluation utilization".

identified but is left to future analysis. Interviews with policy makers and experts are also under way but not exploited in this paper.

The remaining part of the article has the following overall structure. Section 3 briefly sets out basic concepts of indicators and their frameworks, and then introduces the research on evaluation use. The section ends with the outline of an analytical approach to study the policy-indicator linkages. Section 4 describes the TERM system and provides a tentative analysis of the policy linkages enabled by the particular kinds of framework it represents. Section 5 sums up findings in terms of the results of, as well as the limits to, the analytical approach with suggestions for further work.

3. Indicators, Policies and Evaluations

3.1 Indicators and their Policy Functions

In this section we will define and elaborate the notion of indicators and then set out a typology. A technical definition of an indicator is a *variable* representing an operational attribute of a system (Gallopin 1997). The classic instrumental view considers such indicators as 'signals' that enable or prescribe some kind of action or management function (Bauler & Hecq 2000). What is required from indicators in order to function in this way is that they *condense* a large amount of information into figures that represent what is perceived as important. In this way indicators help to reduce the perceived complexity of a situation (Moldan et al 1997, OECD 1993). Why is it relevant to reduce complexity? Basically to make a decision to act or not. The instrumental assumption is that indicators can be used to support decisions to act.

This signalling role of indicators has readily been transposed into a policy making notion (Gallopin 1997). A prominent example is Agenda 21, which states:

"Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems." (Agenda 21, Chapter 40)

Many other recent policy documents repeat the call for indicators, from the 6th Environmental Action program of the European Union (CEC 2001a, p 5) to numerous international, national and local policies around the world (IISD 2002). Typical policy functions ascribed to indicators include the need to give guidance to policy analysis and formation, to support policy evaluations, and to improve government effectiveness and accountability (Moldan et al 1997, UN CSD 2001; Bosch 2002; Hall 2003).

However not all types of indicators are equally supportive of instrumental policy use. The basic indicator type is *descriptive*.[2] These indicators can be dichotomous, number, grade, time series, or ratios or other derived functions, etc. Many indicators systems contain nothing else, but they often leave the specific policy interpretations aside. Another key type compare a descriptive variable to some standard, target value or benchmark. They are called *performance* indicators as they are more often used to monitor the performance or results of policies. Yet another type is aggregate *indices*, where series of indicators are weighted or otherwise merged into a few numbers (e.g. Adriaanse 1993). The message provided by aggregate indices are often quite disputed and their instrumental function in practice unclear (Neumayer 1999).

Another dimension concerns what is measured. *System* indicators measure states, flows, and changes in human or natural systems, using appropriate descriptive or performance indicators. *Agency* indicators focus on the activities of an agent (organisation, government, etc) and assigns a responsibility to it (e.g. measuring in terms of 'input to', 'output from' or 'outcome of' the agents activities). Actual entities that are monitored may be the same in both cases (e.g. the air quality), but in the agency mode the functions would be conceived as (at least partly) the result of the agents activities, which is not the case in the system mode. In other words, the agency mode is inherently more policy related.

From this brief foray into indicator theory we derive that performance indicators measuring in the

[2] Please note that definitions in this area vary widely. The terminology used here draws mostly from EEA 1999 p. 13.

agency-mode generally would appear to provide the most obvious instrumental linkage options to policy making.

3.2 Indicator Frameworks

The link from indicators to policy in any case requires some *framework* to interpret what the signal means (to enable a decision to act or not) and where to respond to it (how to act). We will here suggest a simple typology over indicator frameworks as illustrated in Figure 1. The basic distinction is between *conceptual* frameworks, providing the inner structure of the indicator system, and *utilisation* frameworks, referring to the outside relations.

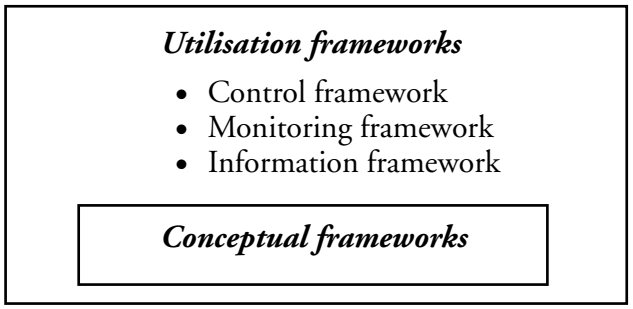

Figure 1. *Indicator framework typology.*

The *conceptual* framework establishes a certain logic to the selection of indicators and contains the supporting technical definitions, metrics and linkages. It serves to justify each indicator as an intelligible signal, distinguishing it from the 'noise' created by the total flow of information. It also separates indicators from mere 'statistics' or 'data'. The conceptual framework may assume a systematic form such as the OECD Pressure-State-Response framework (OECD 1993), or it may represent a more pragmatic collection of indicators defined in a consultative process (Hardi & Barg 1997). In any case, it prescribes a specific worldview with associated categories, system boundaries and 'blind spots'.

Utilisation frameworks can be defined with regard to the presence of mechanisms to ensure that information from indicators is used, or in other words the presence of *accountability mechanisms*. By accountability mechanisms, we understand the way in which policy makers are held responsible for obligations, promises, achievements or the general state of affairs (such as links to rewards, penalty schemes, budget re-allocation procedures or other corrective measures). We will distinguish between three types of utilisation frameworks:

- *Information* frameworks are the most unspecified in terms of use. The indicators are provided to a broad audience which may use the information or not as they see fit. The frameworks typically employ descriptive indicators that are not defined in the agency mode. Accountability mechanisms are not specified other than as an implicit plea to take the information into account. An example could be the indicator set proposed by the United Nations Commission on Sustainable Development (UN CSD 2001).

- *Monitoring* frameworks provide regular reporting on the progress of policies or programs in order to enable feedback. They may include performance indicators in addition to descriptive ones. Policy makers, administrators and stakeholders are main users. Notions of accountability may appear in those frameworks, e.g. as a normative impetus to change a course of action if some indicator suggests policy failure. An example could be the Structural Indicators used to monitor European competitiveness within the European Union's so-called 'Lisbon Process' (CEC 2002).

- *Control* frameworks aim to regulate policy making directly in terms of where and how to act. They provide even stronger links to policy making than monitoring frameworks, and they measure results strictly on the basis of performance indicators compared to a standard, target or benchmark. Accountability is a key concern and regulative mechanisms of accountability are present. Top policy executives, and control/audit bodies are among the users. Examples include the European Growth and Stability Pact with its national budget deficit indicator (European Council 1997), and the government performance planning legislation in the United States (see e.g. Gudmundsson 2003).

We will assume that there is a stronger potential for linkage to policy in control frameworks than in monitoring or indicator frameworks. The presence of stronger accountability mechanisms automatically provides for that. However, we should take caution not to ascribe the use of indicators only to the instrumental functions or the regulative effect of

explicit accountability mechanisms. Policymaking may also be informed and influenced through other channels of communication, rather than formalised procedures. Judith E. Innes contemplating decades of indicator research asserts:

> "When information is most influential, it is also most invisible. That is it influences most when it is part of policy participants' assumptions and their problem definitions, which they rarely examine (…)The information influenced not so much the decisions as the institutions and practices through which policies came into being, and not so much explicit opinions, as the mindsets and assumptions of the policy actors" (Innes 1998, p 54-55).

In the following section we will turn to the evaluation utilisation literature to explore some less instrumental kinds of information use than assumed in the above.

3.3. Research on Evaluation use

The early evaluation research literature focussed primarily on instrumental use of evaluation of major welfare programs and found – to its own surprise - little evidence of such a use (Albæk 1988). Later studies on a still wider range of applications have broadly confirmed this result (Vedung 1995; Dahler-Larsen 1998): The more evaluations that are produced, the less they seem to be used directly in policy making.

Various strategies have been adopted to accommodate these paradoxical findings (Dahler-Larsen 1998, p 76 & 80). The approach we will pursue here has led to the discovery of a range of other ways to use evaluation than as a mere input to decision-making. According to one review of this literature, evaluation use should be seen as a multi-dimensional phenomenon "…best described by the interaction of several dimensions, namely, the *instrumental* (decision support and problem solving function), *conceptual* (educative function), and *symbolic* (political function) dimensions." (Shulha et al 1997, p 196).

While the instrumental dimension has been described in the above, the other two will be explained. The *conceptual* dimension refers to the impacts from evaluation on general thinking and understanding about the specific object being evaluated or about more general notions of causation, categorisation etc. An evaluation suggests a particular view on some activity, process or organisation and this view may contribute to (re)shape the way people perceive their own situation. For instance when criteria of successful teaching is subtly redefined to maximise common teaching evaluation standards (such as student grades) or when environmental concerns are gradually incorporated in specific organisations as a reflection of recurring environmental assessments. This broader - but not necessarily less important - way to 'use' evaluation and information has also been connected to an 'enlightenment' effect, in which evaluation-derived conceptualisations in an area can increase the capacity to understand or reflect critically over current practice (Weiss 1998).

The *symbolic* dimension mentioned by Shulha et al (1997) refers to the need for decisions and organisations to appear appropriate and legitimate internally or externally. Reference to information and willingness to take it into account is one key measure of rationality (Feldman & March 1981), and evaluation represents a prominent example of such information (Dahler-Larsen 1998). A particular decision may gain increased legitimacy by referring to results of an 'independent' evaluation, even though the same decision would have been taken anyway. In this case, the evaluation serves the symbolic purpose to justify the action. Another more tactical (Vedung 1995) kind of use is to refer to an ongoing or pending evaluation to justify *in*action as in the paraphrase: "We cannot consider this option before the results of the evaluation comes in".

According to Vedung (1995 p 47) any empirical study on evaluation should be prepared to look for these and other possible types of uses, rather than to conclude `no use' if no *instrumental* use is found. Another important point made is that it is not possible to control the forms of use made. Stakeholders other than the initiators may use it for different, even unexpected purposes (Dahler-Larsen 1998 p 82 ff.).

3.4. The Implications for Indicator Research

To what extent are these notions from evaluation research relevant to study the indicator-policy linkages?

Concerning first the direct *instrumental* use of indicators, the evaluation studies should have a so-

bering effect on expectations: Evaluation research suggests that such use of information may rather be the exception than the rule. Notwithstanding that, instrumental use should certainly not be disregarded, since so much of the impetus to define indicators clearly draws from such a vein (e.g. OECD 1993; UNCSD 2001 p 2; Gallopin 1997 p 15 & 20). Furthermore, according to Weiss (1998) the chances of instrumental use of information are higher in areas where proposed changes are relatively non-controversial and small. Here we may assume that indicators often can serve to 'trim' information so it gives fewer surprises, and thus is more suitable for direct use than other types of evaluative information. On the other hand, however, Innes (1998) warns us that it takes time for shared confidence and familiarity in new definitions, frameworks and associated numbers to develop. It may take decades from an indicator has been defined until it becomes influential in instrumental terms. Hence, we should not expect to see too much evidence of instrumental use of indicators too soon. For our purpose, we will rename instrumental use *direct* use, as will be specified further in section 3.5.

Enlightenment is arguably the most pertinent type of intended use of indicators, perhaps even more than instrumental use. Considerable efforts are made to communicate environmental indicators to wide audiences in the hope that this will help raise the general awareness of environmental problems (e.g. Ministry of the Environment 2001). Here we see a difference from the evaluation utilisation research, which cites the 'enlightenment' dimension as more of a possible side effect than an intended purpose. In this context, however, we are not able to grasp the entire range of channels through which indicators may affect the attitudes, understandings or motivations of the general public. Rather our approach will be confined to *conceptual*-type impacts within the policy processes.

Legitimisation effects are also quite likely in the indicator case, probably as likely as for evaluation. Legitimisation refers to the use of indicators to justify doing what is already planned or decided. Here we also incorporate Vedungs 'Tactical' use, which could be understood as reference to the mere *existence* of some indicators as a surrogate for not dealing with certain problems just yet. However it may be difficult to detect the more specific character of apparent 'tactical' roles or 'legitimising' uses of indicators in adopting a policy, - is it conscious, well intended, or just a precursor of (later) more direct use? The identification of legitimising use of indicators could be a particularly challenging task, so we will frame this subject differently, as described below.

3.5 The Analytical Framework

Based on the above discussion we will sum up the key points:

- The framework in which indicators is embedded is a key to research the potential linkages to policy impacts
- The types of indicators used can be indicative of possible policy linkages, especially the use of performance indicators in the agency mode
- It would be naive to expect a strong instrumental use of all indicators in policy, but it is nevertheless relevant to try to research it, since indicator programs are often justified by such a function, and in fact it may exist
- There are many kinds of policy-linkage besides instrumental use, they should be researched for but some of them may be hard to detect

In the following review, we will use the notions of direct, conceptual and symbolic use/impact as defined in the following:

By *direct* indicator use, we will mean use of variables and values of certain indicators in policy making. The message provided by the indicator leads to implementation of a certain strategy, measure or change in policy which – in all likelihood – would not otherwise have happened or not happened in the same way.

By *conceptual impact* of indicators we will mean use of key elements in the conceptual *frameworks* in conceiving a certain policy or policy change. The approach and structure of the indicator framework is found to give structure to a policy, e.g. in terms of how problems are framed, or which objectives are defined, or which types of measures are promoted. We will not consider possible wider conceptual impacts such as changes in worldviews, terminologies, general awareness etc.

By *symbolic* use of indicators we will mean the mentioning of certain indicators or frameworks in a rel-

evant policy context, without any discernible impact on the policy in which the mentioning takes place itself, even though such an impact would not be inappropriate (that is: mentioning without any direct instrumental or conceptual use taking place).

In the following analysis of the policy linkage of the TERM indicator system, we will exploit the above approach in two steps:

1) Internal analysis: The kind of indicators and framework that TERM represents, suggesting possible explanatory devices for policy linkage (based on TERM reports).

2) External analysis: The kinds of use (direct, conceptual, symbolic) – if any – we can discern from assessing selected policy documents that TERM is relevant for.

4. Analysis

4.1 Background - The 'TERM' Indicator System

The Transport and Environment Reporting Mechanism (TERM) is linked to the so-called Cardiff process in which various sectoral formations of the European Council have defined strategies for Environmental Policy Integration with appropriate monitoring schemes. The main purpose of TERM is thus to "…monitor the progress and effectiveness of transport and environment integration strategies on the basis of a core set of indicators" (EEA 2002 p 13). The roles of TERM also include "… to identify changes in the key leverage points for policy intervention (…) and to make results accountable to society." (EEA 2000, p 4). The principal author of the TERM report is the European Environment Agency (EEA), which is the environmental information bureau of the EU. A TERM steering group with members from the Commission governs the TERM process. So far three annual TERM Reports have been issued (EEA 2000, 2001, 2002) preceded by a so-called 'zero' version (EEA 1999). From 2002 onwards the system covers also accession countries to EU.

4.2 Analysis 1: TERM as a Framework

The conceptual framework of TERM is quite sophisticated, consisting of approximately 40 indicators. They are grouped along dimensions of relevance for various aspects of policy making. The main structure is defined by seven so-called *'policy questions'* (see box 1). The questions are derived from objectives in key EU policy documents, and the indicators provide the supposed answers. In this way, TERM is designed to be useful for policy.

The first group of indicators (Question 1) contains descriptive indicators for the environmental pressures from transport systems. The second group (question 2-6) refer to overall policy levers such as modal split between road and other modes, environmental efficiency of transport technologies, and trends in prices and taxes. These indicators are also mostly of a descriptive kind (no performance targets), and they monitor in the system, rather than in the agency mode. The third group (question 7 - 'Management integration') is different. The indicators here directly address the implementation of integration policies by EU Member State governments. The group consists of qualitative performance indicators where existing policies are assessed against verbal policy objectives of EU policies, and the mode is agency rather than system.

TERM provides no summary of all the indicators into descriptive or performance *indices*, although

Box 1. The seven policy questions of TERM (EEA 2002)

1. Is the environmental performance of the transport sector improving?
2. Are we getting better at managing transport demand and at improving the modal split?
3. Are spatial and transport planning becoming better coordinated so as to match transport demand to the needs of access?
4. Are we optimising the use of existing transport infrastructure capacity and moving towards a better balanced intermodal transport system?
5. Are we moving towards a fairer and more efficient pricing system, which ensures that external costs are internalised?
6. How rapidly are improved technologies being implemented and how efficiently are vehicles being used?
7. How effectively are environmental management and monitoring tools being used to support policy- and decision-making?

some air emission indicators are aggregated with respect to their environmental impacts (Acidifying Potential, Ozone Precursors etc). However a highly 'aggregate' qualitative conclusion was made in one TERM report (TERM 2001) in which the foreword by the General Director says "...that transport is becoming less and not more environmentally sustainable, and integration efforts have to be redoubled. " (EEA 2001, p 3). This conclusion does not derive directly from the indicator system or the body of the report.

Other conceptual features of TERM reports are the use of simple graphics ('smileys') to illustrate progress or the opposite at EU or Member State level, and the use of tables comparing or 'benchmarking' the performance of transport systems across the Member States.

Concerning what kind of *utilisation* framework TERM represents we can immediately draw from the above that TERM combines an information with a monitoring framework approach, since it employs both descriptive and performance indicators in both system and agency modes. Moreover there are normative elements including the "name and shame" effect of using 'smileys' to indicate progress or lack of it, summarised and reinforced by the TERM 2001 overall conclusion on the lack of sustainability in European transport policies as cited above. TERM therefore clearly stands out as a not only an information system but also as a policy monitoring framework aiming to inform EU institutions and Member States on the need for changes in critical areas of political intervention.

But, does TERM also represent a stronger, control oriented framework? To answer this we need to look for accountability mechanisms, and in fact there are few. The total text of the three reports (+ 1 'zero' version) explicitly mentions 'accountability' three times, but only in general terms, and in fact in the one case just to express regret that there is a *lack* of clear targets to be used as performance standards, benchmarks or accountability mechanisms (EEA 2001, p 47). Even though the indicators for TERM Question 7 on `Management integration' are mostly in the agency mode, there are no formal mechanisms in the framework to secure that the information from TERM is taken into account in relevant policy processes. All in all, we may safely conclude that TERM is not a control-oriented framework, due to the absence of regulative accountability mechanisms, and we may for this reason alone expect limited direct or instrumental policy use.

4.3. Analysis 2: TERM reflected in Policy Documents

An identification have been made of key policy documents for which we would assume TERM to be useful and potentially influential. The identification is based on policy references in the TERM reports themselves along with general review and knowledge of European transport and environment policy agendas. In this article we will draw only on two examples at EU (not Member State) level, namely the Transport Council Integration Strategy and the White Paper of the Common Transport Policy. The analytic framework laid out in section 3.5 will be applied to these documents in the following way:

- *Direct use* will be considered as reference in the documents to any of the 40 TERM indicators (with actual values) where a corresponding change in policy is proposed or implemented

- *Conceptual use* will be divided into a *strong* conceptual impact and a *weaker* impact. Strong impact would mean the adoption of TERM's 'Seven Policy Questions' approach in the policy documents. Weaker, possible impact would refer to the adoption of the same environmental problem range as in TERM, or adoption of other conceptual elements such as the 'smileys' or 'benchmarking' tables used in TERM.

- *Symbolic use* is defined as reference to TERM in the policy texts without any identifiable direct use (or conceptual impact).

4.4 The Transport Council Integration Strategy

The Integration Strategy refers to documents adopted by the Transport Council as part of the Cardiff process mentioned in the previous section. It mainly consists of three subsequent documents (Council (Transport) 1999 2001, 2002), where the 1999 one contains the Strategy proper, and the two following are revisions. Its relevance for TERM is obvious since TERMs main purpose is to monitor integration, as described above.

The 1999 Strategy is a 15-page document. The text is qualitative and there is no reference to any concrete data series (or indicator values). In fact, it dates from before the first TERM report was issued (only an unofficial draft version was available). There is therefore obviously no sign of *direct* use of TERM in this first Strategy document.

The document nevertheless mentions TERM by welcoming the preliminary work (under 'Need for further Action') and calls for its completion. This can be understood as an attempt to *formally legitimise* the integration strategy by way of TERM since the Cardiff Summit did request the formations of the Council to set up monitoring mechanisms as part of the strategies (European Council 1998). We label it symbolic use.

Concerning a possible *conceptual* impact we observe more of a reversal: Rather than the strategy being influenced by TERM, it appears that the final version of TERM is partly shaped by the integration strategy. The inclusion of the whole the Question 7 section in TERM (Management Integration) follows for instance directly from a request in paragraph 21b of the Strategy.

The Integration strategy was revised in 2001 and in 2002. These texts consist of only 3-4 page sections in the general conclusions from Council meetings (and not as separate documents). Those texts still do not contain or refer to any quantitative indicators, again negating any direct use of TERM. Both documents do however also mention TERM. The 2001 revision only takes note that the Commission aims to 'safeguard' the continuation of TERM as a monitoring mechanism ((Council (Transport) 2001 §14). The 2002 revision makes the same acknowledgement, but then also makes a direct reference to the general conclusion from the TERM 2001 report, which was quoted earlier in this article, concerning the increasing unsustainability of European transport and the need to 'double efforts' (Council (Transport) 2002 §8). This reference is, however, not linked in any obvious way to any of the specific policy proposals in the Strategy text (no specific policies are proposed to 'double' efforts or the like), and thus it appears to be mostly symbolic.

All in all, we conclude that there is no direct use of TERM in the Integration Strategy documents so far. There also appears to be little or no conceptual impact from TERM to the strategy development, while some symbolic use appears. The discernible correspondence at document level seems to emanate from the strategy to TERM rather than the reverse. There are barriers to the influence of TERM on the Integration Strategy in this respect since they are not institutionally integrated. TERM may appear as a monitoring framework for environmental integration but in practice it is not 'more' than an information framework in relation to the Integration *Strategy.* The low formalisation of the latter may weaken the opportunities for revealing formal impact via documents.On the other hand, the full interaction is not necessarily revealed in the documents themselves, so we cannot exclude that integration policies will be influenced by the TERM reports in more subtle or gradual ways. This may become more manifest in future revisions of the strategy.

4.5 The Transport White Paper

In 2001 The Commission issued the Transport White Paper: European transport policy for 2010: time to decide (CEC 2001b). It must be seen as a relevant 'target text' for TERM since it is the main transport policy document of the European Union, and therefore a potential target for the integration principle. Moreover, it is a couple of years more recent than the first Integration Strategy, meaning that the lead-time for TERM impact is a little longer.

The White paper is much larger document than the Integration Strategy (109 p). It provides a broad description of the challenges facing European transport systems and policies, and it proposes a wide range of strategies, measures, and initiatives. Environmental aspects are dealt with in a few sections of the paper. In contrast to the Integration Strategy, the White Paper does contain actual number and figures (indicators) over critical developments. However, none of the figures and graphs are derived from TERM. Thus, no direct use takes place at all.

In the document one finds TERM mentioned briefly two times. The first time is in a general discussion of the need to develop medium and long-term environmental objectives for a sustainable transport system (CEC 2001b p 18). Here TERM is mentioned as a tool that could be used to monitor follow-up to such objectives. One gets the impression that this is mostly a symbolic reference, although a communica-

tion on such objectives is in fact proposed elsewhere in the White Paper. As we recall from the above a call for targets was also mentioned in several TERM reports in order to enhance the environmental accountability (EEA 2001 p 4 & 47; EEA 2002 p 8 & p 64). Therefore, we could also interpret this reflection of targets in the White Paper as a (weak) form of conceptual TERM impact.

The other reference may be of greater significance since it deals with a more central assessment task, namely the review of the White Paper itself stipulated for 2005: "…the Commission (…) in 2005 (…) will make an overall assessment of the implementation of the measures advocated in the White Paper. This assessment will take account of the economic, social and environmental consequences of the proposed measures." and in a footnote: "Monitored in the framework of "TERM"". (p 102)

Even if the significance of this note may be high, it is however mostly of a speculative future kind, since the present White Paper does not address what way TERM may be used in the exercise. It must be seen as a symbolic form of reference. Concerning possible conceptual use, certainly all of the 'seven policy questions' of TERM are echoed (one by one) in various sections of the White Paper, from land use, to changing to technology to the management modal split. However, these concerns are most likely reflections of current transport policy agendas in general rather than influence of TERM.

5. Discussion and Conclusions

The analysis of the TERM system shows that major efforts to define its framework and content to make the system relevant and useful for policy making has been undertaken. Based on the typology of indicator frameworks we could identify key elements that enhance TERM's linkages to policy making, and other such elements that are not present. The analysis showed that up to this point there has been little direct policy use of TERM, in the conventional instrumental sense, at least as reflected in the selected key EU transport policy documents. This is not very surprising, since a) TERM represents a 'hybrid' of an information and a monitoring framework, with few formal accountability mechanisms (control elements) available, and b) the history of TERM is still very short.

This limited direct effect may again be a reflection, not so much of inadequacy in the TERM system itself but of the more general European institutional complexity and inertia which at this point allow only a limited role for indicator based policy control frameworks outside of a few core areas such as the Growth and Stability pact. The Environmental Integration agenda has at least not assumed a similar level of institutionalisation, despite the firm anchoring of the principle of integration in the EC Treaty, and despite the elaborate monitoring system TERM. Based on the analysis we may suggest that further refinements in TERM's already elaborate conceptual framework may not help to further the policy linkages much, as long as the utilisation framework does not allow for stronger accountability mechanisms of some sorts. Moreover, this should prepare us for different findings concerning the use of indicator system in the institutional contexts of Member States or municipalities where mechanisms of accountability have a longer history or stronger institutional foundations (see e.g. Rydin 2002).

Rather than claiming a failure to fulfil the strong policy-linkage ambitions of TERM up till now one may instead explore other types of use of indicators systems, and the way these may open other avenues of exposure and influence. In this review we chose to search for two 'alternative types of use' among the different types conceived within the evaluation research literature, namely so-called 'conceptual' and 'symbolic' uses. The notions were given simplified operational characteristics in order to use them in document analysis. The review showed that strong conceptual use and impact was clearly not present in the documents, while weaker conceptual impact could neither be confirmed nor ruled out completely, due to the relatively low level of sophistication of the document analysis. Most of the references to TERM in the documents was identified as symbolic uses since there was no other apparent function, and only the existence, and not the content of TERM was generally referred to. The term 'symbolic' should not be mistaken for 'irrelevant' or 'inconsequential', however. Rather it raises a need to explore further as to what the symbols mean to the producers and users of TERM, and what the likely downstream effects of them can be in the EU institutions themselves, in policy making at Member State level, and in other important quarters such as strategic research, consultative arenas, etc. The analytical framework

should therefore be reinforced in order to detect further conceptual influences and to trace the role and function of symbolic uses of indicators. To that effect we will have to explore other, more interpretative, qualitative methods as supplements to the document analysis (se e.g. Connick & Innes 2003; Rosenström 2003; Vigar 2002). Further research will therefore aim both to extend the range of policy documents in different contexts, and to supplement this with qualitative interviews of key stakeholders. In the further work we should not least be challenged by Innes' claim (1998) that information is most influential when it is hidden. How can such effects be uncovered and what will we see?

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