

On the Benefits of Using Process Indicators in Local Sustainability Monitoring: Lessons from a Dutch municipal ranking (1999–2014)

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ABSTRACT

The sustainability performance of cities is subject to an ever-growing number of monitoring tools. While most initiatives work with outcome indicators that are generally associated with limited direct policy relevance, a minority of tools focuses on sustainability-related processes and particularly local government policies. In this article, we explore the benefits, limitations and conditions under which this approach can function. While several process-oriented tools offered to European local governments have lacked participation and foundered, the Local Sustainability Meter (LSM) has been widely used in the Netherlands, with close to 90% of all Dutch municipalities participating since 1999 in some of its multi-year editions. An evaluative case study presented in this article shows that the LSM stimulated competition for policy performance, conceptual learning and the strengthening of local governance and inter-municipal networks. The LSM's design choices of combining voluntary, transparent self-assessments at periodic intervals with public rankings and awards proved to be an effective – and economic – way of disseminating sustainability policies. Its limitations include an inherent focus on generic, standardized policy prescriptions and little knowledge on actual sustainability outcomes. These findings are relevant for policy-makers and developers of (local) sustainability monitoring tools. This study contributes to the growing literature on (i) sustainability policies and (ii) municipal monitoring and ranking tools. Copyright © 2016 John Wiley & Sons, Ltd and ERP Environment

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Introduction

LOCAL GOVERNMENTS ARE HIGH ON THE INTERNATIONAL SUSTAINABILITY AGENDA; THE RECENTLY ADOPTED SUSTAINABLE Development Goals (SDGs) contain a specific goal (No 11) concerning ‘inclusive, safe, resilient and sustainable cities’. Virtually all contemporary policy frameworks comprise targets and indicators, and ever more ratings and rankings appear with the declared purpose of informing governmental policies and decision-making. The common focus is so-called ‘impacts’ or ‘outcomes’, which – in the parlance of performance management – are widely shared, top level desiderata such as clean environments, public safety, and more employment. The implicit assumption is that corresponding indicators (e.g. on air quality, crimes, unemployment rates) help governments make the right decisions and investments (‘inputs’) to obtain appropriate ‘outputs’ such as more trees, police officers, and trainings for the jobless.

Crucially, while high-level, outcome information is certainly important for accountability and the modelling of causal ‘results chains’ an effective planning heuristic, the practical use of impact or outcome indicators is fraught with difficulties, especially at local level. In the non-profit sector, the ‘impact mantra’ has been criticized as counterproductive, as it draws precious resources away from services and puts undue emphasis on outcomes for which the causal links are unclear (Ebrahim, 2005). Acknowledging the challenge of relating outcome indicators to day-to-day management, guidance about the SDGs contains the rather general advice that ‘the distinction between outcomes, outputs, and inputs needs to be handled pragmatically, and the design of goals, targets, and indicators should be guided by approaches that are best suited to mobilize action and ensure accountability’ (Sustainable Development Solutions Network, 2015, p. 147).

Intriguingly, most academic overviews of local sustainability indicators (e.g. Ness *et al.*, 2007; Tanguay *et al.*, 2010) are remarkably silent about indicator types. One exception is Dahl’s seminal review of ‘Achievements and gaps of indicators for sustainability’, in which he argues that ‘environmental, economic and social states are the result of complex processes of development. Policy and management interventions will be more effective if aimed at the process rather than the result, but process indicators have been harder to define’ (Dahl, 2012, p. 16).

In existing monitoring initiatives, process aspects receive some consideration since a few international ‘city rankings’ feature a select number of process-oriented, qualitative indicators. As part of Siemens’ *Green City Index*, for example, a jury of experts rates a city’s climate change policies (Meijering *et al.*, 2014). However, tools that emphasize process-oriented indicators are a rarity, and many such initiatives have struggled. ICLEI’s *Local Evaluation 21* self-assessment tool and the *Reference Framework for European Sustainable Cities* (RFSC), for example, have failed to reach envisioned user numbers. It thus appears that process indicators are not only ‘hard to define’ (Dahl, 2012) but especially ‘hard to maintain’. In this context, one Dutch ranking system stands out

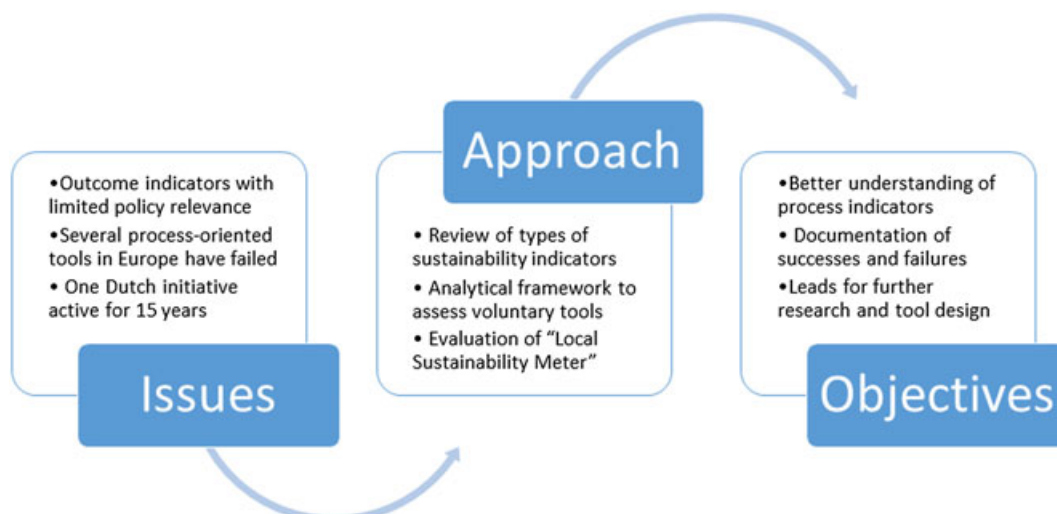


Figure 1. Summary of issues, chosen approach and research objectives

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inasmuch as it has a 15-year history. Since 1999, the *Local Sustainability Meter* (henceforth abbreviated as LSM) has called nine times, at 1–4 year intervals, on all Dutch municipalities to assess their sustainability efforts and policies rather than outcomes. In some years, up to 90% of all Dutch municipalities responded by voluntarily filling a questionnaire. This is especially remarkable since in the ensuing, publicly communicated ranking, the winner receives an award and some municipalities can praise themselves as top performers, whilst just as many knowingly end up at the bottom of the league table.

In this paper, we thus use the LSM case to explore the merits and limitations of local sustainability measurement tools that emphasize processes and policies. The main research question is ‘*Under what conditions can local sustainability monitoring initiatives focusing on processes viably function, and what are their benefits and limitations?*’.

Our approach and objectives are summarized in Figure 1. We set out by reviewing academic literature on process and policy indicators in sustainability ratings and rankings. This is followed by the presentation of an assessment framework. We then describe the research design and methods and subsequently the main results. We discuss their implications and end with a conclusion and suggestions for further research.

Process-Oriented Local Sustainability Monitoring

Since its emergence, the international sustainability agenda has also been a measurement agenda – the Local Agenda 21 (LA 21) movement initiated by the United Nations after the Rio conference (1992) explicitly stressed the need for local monitoring work. This section summarizes key concepts and literature on the focus of such monitoring, on the relation to performance and on their observed effects.

Outcome, Process and Policy Indicators

Monitoring is about identifying trends, threats and progress, and generally built around the tracking of indicators. Outcome indicators have an important role to play in any sustainability assessment, as they allow study of the evolution of key social and environmental concerns across time; many lend themselves to cross-city comparisons (Joss, 2012).

Defining the essence of sustainability and thus choosing sustainability indicators, however, necessarily entails simplification of very complex matters (Turnhout *et al.*, 2007). Even with the advent of ever more automatized data collection, ‘big data’ analyses and ‘open data’ gateways, the number of indicators directly informing policies is bound to remain small, especially at the local level. This is because for most sustainability issues, particularly in the socio-economic sphere, goals and norms are relative and contested, and causal mechanisms extremely complex – a case in point is poverty, an issue for continuous discussion among policy-makers and researchers about causes, solutions and appropriate measurements. In most policy fields, the ambition of using outcome indicators to steer a city towards sustainable development is hampered by unclear causal attribution, a mismatch between geographical scales (Mori and Yamashita, 2015), time lags and limited data availability (Lyytimäki and Rosenström, 2008).

In light of these challenges, some scholars propose focusing on processes instead. A recent conference report stated that ‘what is most needed to accelerate and scale up innovation is a process focus, prompting the need for generic, replicable protocols and tools for supporting the design, implementation and assessment of (urban) sustainability initiatives’ (Joss *et al.*, 2015, p. 9).

One way of generically assessing process aspects is through policy indicators that probe whether governments have a certain type of favoured policy, plan, budget, project or programme. Policy indicators typically use binary scales, e.g. when assessing whether a certain formal policy is present or absent. In the field of human rights, for example, monitoring frameworks commonly track the ratification of international treaties or adoption of laws (OHCHR, 2015). To increase informational value, processes can be decomposed (e.g. formulation of a plan, approval, implementation) or described with explicit demands on the characteristics of components (e.g. the incorporation of certain standards, budgets, approval processes etc.). Another option is to rate policy efforts as ‘very strong’, ‘strong’, ‘weak’ or ‘very weak’, thus producing cardinal or Likert scales.

However, the more detailed the requirements, the higher the indicator's transaction costs, the less accessible the results become for general audiences, and the less transferable the assessment is across contexts. This explains why early efforts at the times of Agenda 21 to spread the use of standardized 'institutional indicators' failed to gain acceptance. The 'share of population that takes part in local Agenda 21 processes' proposed by Spangenberg (2002), for example, defies any simple operationalization and dodges the question of who should make such measurements. In support of Agenda 21, various European governments issued manuals on how to initiate local sustainability processes and how to assess their quality (e.g. Swiss Federal Office for Spatial Development, 2005) yet these are relatively generic tools relying on the management and research capacities of local governments.

The comparability of processes remains a fundamental challenge. As Dhakal and Imura put it (2003, p. 117), 'process indicators are said to help to transfer the knowledge or know-how from one place to another in the form of a combination of qualitative and quantitative indicators. Such process indicators should typically be derived from successful experiences (and best practices) and henceforth should be implemented elsewhere with the necessary modification to suit the local conditions'. This suggests that there is a trade-off, with competing demands for standardization and replicability on the one hand and adaptation for context-sensitivity on the other.

Performance Management Through Self-Assessments and Rankings

Process indicators can be valuable inasmuch as they inform policy choices and efforts and make the policy process more transparent. Their use in managing performance, however, is not straightforward. In the field of public management, it is well established that indicators can incentivize desired behaviour but also lead to 'perverse effects' (Hood, 2012). According to Pollitt, tying incentives and sanctions to indicators requires a careful balancing act: 'If there is no coupling, or only a very faint connection, then performance targets may not have much effect on behaviour. If, on the other hand, the connection is drawn very tight, so that everybody knows that heads will fall in the event of a missed target, then gaming and cheating behaviours are likely to flourish' (Pollitt, 2013, p. 358). Rankings as one popular performance management tool facilitate comparisons by visualizing relative performance but can also be problematic; frequently criticized are arbitrary weightings of performance indicators, the failure to differentiate inputs and outputs, and comparisons of dissimilar organizations (Tillema, 2010).

Concerning stakeholders external (expert-led) and internal (self-) assessments are the main source of performance information in public governance fields. According to Bovaird and Löffler (2003, p. 326), 'self-assessment is usually more knowledgeable and allows those people to learn the necessary lessons who must later play a key role in improvement processes. However, self-assessment is also potentially myopic and self-deluding – and it is less likely to be trusted by "outsiders". Conversely, external assessment by "auditors" or "inspectors" is more likely to be independent but in turn is often not trusted by the agency subjected to assessment. It is believed to exhibit limited understanding of the context, a tendency to be simplistic or superficial. Moreover it can be a very expensive process'.

To validate process and policy indicators, expert panels are often used, yet this may increase opacity. Some authors thus assert that if 'policy indicators are used, binary indicators (determining whether particular types of policies exist in a city) are more transparent than expert-evaluation based policy metrics' (Zhou and Williams, 2013, p. 34). Furthermore, if data are neither derived from statistical, administrative sources (which is the case for most outcome indicators) nor from expert assessments but provided by local stakeholders themselves, one key target audience is directly involved. This may imply biases yet also increase the potential for effective policy learning.

In the field of local public service delivery, the use of award schemes with voluntary candidatures is commonplace (Hartley and Downe, 2007). Among Asian cities, winning a sustainability prize has been identified as a powerful motivator (Krank and Wallbaum, 2011). By participating in contests and thus voluntarily undergoing scrutiny, local governments 'signal virtue' (Gugerty, 2009). Competitive awards, however, have evident limitations, in particular their inherent exclusivity. An alternative route designed to reach larger user numbers are certification schemes, e.g. for 'eco cities' (Joss *et al.*, 2015).

Effects of Sustainability Monitoring Initiatives

Sustainability monitoring in cities generally serves one or more of the following four purposes: Decision-making and management, advocacy, participation and consensus building, and research and analysis (Parris and Kates,

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2003). An American review of 'key indicator systems' concludes that a fully operational set of measures takes time to develop and requires broad involvement of society and substantial resource commitments, while benefits can include (1) more informed policy choices, (2) a better educated citizenry and (3) greater civic engagement (United States Government Accountability Office, 2011). Case studies have produced some evidence of positive 'soft' impacts on capacity building, social learning and improved communication between stakeholders (Reed *et al.*, 2006); effects on advocacy, learning and consensus-building are notoriously hard to measure. In recent years, the governance and politics of policy indicators has received more attention (Sébastien and Bauler, 2013). Some apparent disappointment felt by practitioners regarding a lack of 'impacts' is arguably due to naïve expectations: 'In policy-making environments, a linear thinking of direct, instrumental policy use of indicators is simply not acknowledging the complexity of decision-making, and the inherent discursiveness of policy-making. Not acknowledging the richness of indicator uses leads to much of the unnecessary frustration at the level of indicator developers, who might desperately seek for direct signs of policy impacts of their work' (Bauler, 2012, p. 40).

Self-assessments and process-oriented tools may promote learning and ownership at reduced costs (Joas *et al.*, 2014) but raise questions of potential bias and generally face an uphill battle against low participation among the target group (Garzillo *et al.*, 2014). The rank growth and 'explosion of indicators' (Tanguay *et al.*, 2010) has given rise to many flash-in-the-pan initiatives that vie for attention before fizzling out. For the designers and users of monitoring tools, better knowledge of their functioning and effects is therefore highly relevant.

Towards an Analytical Framework

How can we distinguish and evaluate local sustainability monitoring tools? Most common are initiatives that periodically monitor quantitative, outcome-oriented indicators obtained from official sources (e.g. national statistical offices), as these are relatively cheap to run. In this process, any local initiative makes various choices in the selection of indicators, their use and interpretation, the frequency of assessment, or the involvement of stakeholders. There are thus no neat classifications, but potentially uncountable configurations. Nonetheless, certain combinations are more prevalent and are thus captured in classifications of monitoring systems and related tools such as process guides (Jensen and Elle, 2007). One framework recently proposed by Grönholm and Berrini (2014) categorizes sustainability assessment systems based on the following six criteria: (1) type of evaluation, (2) target population, (3) reach, (4) evaluation area, (5) required efforts and (6) outcome. The first criterion explicitly refers to the distinction between outcome- and process-oriented tools, which tends to be overlooked by other inventories (e.g. Ness *et al.*, 2007; Shen *et al.*, 2011; Waas *et al.*, 2014).

For quantitative, outcome-oriented indicator projects, certain quality standards such as the BellagioSTAMP principles (Pintér *et al.*, 2012) provide guidance that can also be used as starting point for an analytical framework; the same applies for the normative evaluation model proposed by Ramos and Caeiro (2010). For studies on the effects of sustainability monitoring systems, frameworks developed to analyse the utilization of evaluation and research findings prove useful. The basic distinction of instrumental, conceptual and political or symbolic uses advocated by Weiss is frequently applied (Hezri and Dovers, 2006). These three types of use are inter-related: 'Instrumental use is presumed to yield decisions of one kind or another. Conceptual use yields ideas and understanding. Political use yields support and justification for action or no action. Process use tells how evaluation's influence arose' (Weiss *et al.*, 2005, p. 14). Unlike typical outcome-oriented indicator systems, for policy-oriented monitoring that relies on voluntary self-assessments, uptake by the target group constitutes an essential first criterion of success. Figure 2 visualizes the analytical framework thus developed for this study. Based on previous research (Grönholm and Berrini 2014), we hypothesized that various factors including tool and context characteristics explain participation or non-participation. Participation is expected to lead to various instrumental, conceptual and political uses and influences and to strengthen the case for the tool's continuity by influencing the willingness of stakeholders to cover running costs. These causal mechanisms are not clear-cut, however; conceivably a local government can also learn from a tool by using it anonymously, and conversely it might participate without benefitting in any substantial way.

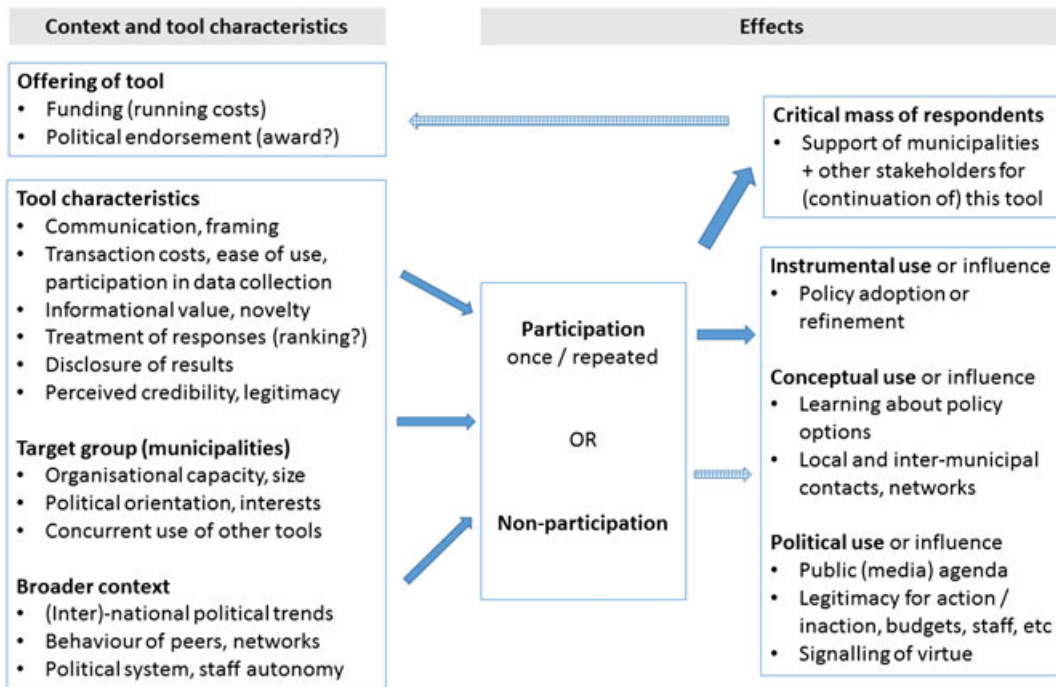


Figure 2. Analytical framework for the evaluation of voluntary monitoring tools

Research Methodology

This section outlines the empirical methodology of this study, detailing the selection of cases and subsequently of research methods.

Case Selection

When searching for local sustainability monitoring tools based on process indicators, four European tools attract attention – *Local Sustainability Meter*, *Local Evaluation 21*, *Baromètre du Développement Durable* and the *Reference Framework for European Sustainable Cities* – presented in chronological order of their first appearance.

The *Local Sustainability Meter* (LSM) was launched in the Netherlands in 1999. During specific assessment periods – at multi-year intervals – it invites all Dutch municipalities to self-assess their sustainability policies and efforts, producing a ranking and giving an award to highest scorers. In the course of the past 15 years, over 90% of all Dutch municipalities have used this tool at some point.

Local Evaluation 21 (LE21) was designed as ‘a fully automated self-evaluation tool, simple for the end-user to use, designed for widespread use and offering a fast quantitative evaluation of local governments’ engagement in local sustainable development processes’ (Grönholm, 2014, p. 58). The organization ICLEI launched LE21 in 2004, offering it free of charge to all European local governments. Available in 20 European languages, LE21 reportedly received positive appraisal from those who used it. However, in the course of several years only some 150 local governments from across Europe made use of the tool (Grönholm and Berrini, 2014), and it was discontinued.

In France, the LSM’s basic methodology was emulated and developed as *Baromètre du Développement Durable*. BDD employs the same approach of inviting local governments (free of charge in certain regions) to self-assess their sustainability efforts, disclosing responses in public. In contrast to the LSM, it neither has specific assessment periods nor awards, but is open for continuous use. According to its website, the BDD has been used by 314 (about 1%) of French communes so far.

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The *Reference Framework for European Sustainable Cities* (RFSC) has been described as ‘a process-oriented attempt at applying EU sustainability policies’ (Grönholm and Berrini, 2014). Released in early 2013, it is a free web-based tool, also available in various languages, offering methodological support by providing an overview of possible actions towards organizing sustainable urban development. Local governments, with small and medium-sized cities being the main target group, are enabled to enter data and link up with peers. However, the European Commission’s financial support for the tool was suspended in late 2014 due to the low uptake, which had remained less than 100 European cities. Observers argue that ‘the RFSC, deliberately conceived as a non-binding and open web-based tool, lacked legitimizing powers that, in return, has had impact on its capacity to persuade and motivate decision-makers to make full use of it’ (Becker, 2015, p. 106).

Table 1 summarizes key features of LSM, LE2I, BDD and RFSC. A quick comparison indicates that each of these process-oriented sustainability tools is different in some regard; for example, the LSM is the only one working discontinuously and offering rankings and awards at multi-year intervals. Further, amongst these four tools, the LSM is ‘positively deviant’ – it is the only instrument reaching significant participation rates whilst remaining in use for several years, and thus a unique case to assess the viability of process-oriented monitoring. This warrants exploring it in more detail through an evaluative case study.

Research Methods

The case study research draws on data compiled from available documents, websites, datasets of LSM editions, and interviews. Table 2 lists main data sources. Using semi-structured questionnaires, six key informants involved in the design and management of the LSM were interviewed (two initiators of the LSM, three consecutive coordinators of the LSM office and one expert involved in the re-design process of the monitoring tool). Interviews addressed the design process of LSM, data collection, usability issues, effects of LSM participation, and strengths and weaknesses of the tool. Interviews lasting between 30 and 90 min were conducted face to face or by telephone. In addition, between 2009 and 2015 multiple LSM advisory group meetings were visited by the researchers. Transcripts and collected text documents were used to construct a case history. The analytical framework presented in Figure 2 was used to analyse data. Data were coded in order to address information needs arising from the analytical framework. Based on transcripts, key interview statements were translated from Dutch to English. This article contains illustrative statements from three informants designated Respondent 1 (a former LSM coordinator), Respondent 2 (a technical expert) and Respondent 3 (another former LSM coordinator).

Results

The Evolution of the Local Sustainability Meter (LSM)

Following the Rio Conference in 1992, the Netherlands was seen as an environmental pioneer in Europe (Coenen, 2008), eager to adopt the principles of Local Agenda 21. In 1999, the National Committee for International Collaboration and Sustainable Development (in Dutch, NCDO) and the network of Centres for International Cooperation (COS) developed a tool called the Local Sustainability Mirror with the purpose of raising awareness on how local governments could formulate policies related to international development. In 2002, COS took sole charge, changed the name of the tool to Local Sustainability Meter, and shifted the tool’s conceptual focus – against the wish of NCDO – to sustainable development in Dutch municipalities. COS later dissolved and FairBusiness, a spin-off company, took charge of the LSM.

Since its inception, running the LSM has been carried out with project-based funding in the range of 30 000–50 000 Euro per LSM edition. The Ministry of Environment provided financial support for the initial design and data collection until 2010; for the last edition, main contributions came from other governmental programmes. Each ‘edition’ of the LSM can be visualized as taking place in a cycle with various steps: developing a questionnaire, inviting all municipalities to participate, evaluating responses, disseminating results and deciding on a future edition. These activities incur the types of cost listed in Table 3. Some of the running costs were constant, such

Tool	Assessment method, timing	Products for participants/ public	Costs and incentives	Coverage/usage
Local Sustainability Meter (LSM)	<ul style="list-style-type: none"> questionnaire with approx. 100 items data entry by local govt: for specific calls (every 1–4 years) 	<ul style="list-style-type: none"> rankings, award ceremonies scores and rankings disclosed on www.duurzaamheidsmeter.nl 	<ul style="list-style-type: none"> no charges winners: awards (endorsed by Ministry of Env.) 	<ul style="list-style-type: none"> launched in 1999 uptake: up to 90% of Dutch municipalities
Local Evaluation 21 (LE21)	<ul style="list-style-type: none"> questionnaire with approx. 50 items data entry by local govt: any time optional: input from local stakeholders 	<ul style="list-style-type: none"> automatized evaluation report (www.localevaluation21.org now defunct) no public disclosure of any data 	<ul style="list-style-type: none"> no charges no incentives 	<ul style="list-style-type: none"> launched in 2004, limited uptake among European local governments (>1%), discontinued
Baromètre du Développement Durable (BDD)	<ul style="list-style-type: none"> questionnaire with approx. 110 items data entry by local govt: any time obligatory validation by local stakeholders 	<ul style="list-style-type: none"> scores disclosed on www.barometredudeveloppementdurable.org 	<ul style="list-style-type: none"> no charges in 3 regions; elsewhere need to pay 	<ul style="list-style-type: none"> launched in 2008 current uptake: approx. 1% of French communes
Reference Framework for European Sustainable Cities (RFSC)	<ul style="list-style-type: none"> questionnaire/online toolbox data entry by local govt: any time for continuous use (policies, peer exchange, etc.) 	<ul style="list-style-type: none"> automatized feedback no public disclosure of any data participants named on www.rfsc.eu (idea: positive label) 	<ul style="list-style-type: none"> no charges no incentives 	<ul style="list-style-type: none"> launched in 2013, across Europe limited uptake (>1% of eligible local govts), only 4 Dutch participants

Table 1. Key features of four policy-based monitoring tools

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Stakeholders	Main data sources
LSM project organization	<ul style="list-style-type: none"> • website with database covering all LSM editions (www.duurzaamheidsmeter.nl) • interviews with key informants
Internal stakeholders	<ul style="list-style-type: none"> • minutes of meetings of advisory group (containing representatives from ministries, universities etc.) • interviews with key informants • municipal websites (e.g. www.nijmegen.nl)
External audiences	<ul style="list-style-type: none"> • websites of sustainability platforms (e.g. www.duurzamegemeente.nl) • news reports (e.g. www.rijksoverheid.nl/actueel/nieuws/2009/12/24/resultaten-lokale-duurzaamheidsmeter-2009)

Table 2. Main data sources

	Phase	Main activity, input	Budget share
①	Development	fundraising, conceptual work, stakeholder consultations	Medium
②	Self-assessment, basic communication	creating website, disseminating standard invitations (letters, press, social media)	Low
②.①	Active marketing	time to make personal phone calls	medium–high
③	Evaluation	calculations, evaluation of requests for additional scores	medium
④	Dissemination, awards	results on website, media reports, ceremony	low
⑤	Decision on future	conceptual work, consultations with stakeholders	low
	Average cost (funding received) per edition:		30–50 000 €

Table 3. Main activities and costs of the LSM

as the services of a helpdesk and maintenance of a dedicated website. The amount of effort invested into actively marketing the LSM fluctuated per edition: with more project funds, more staff time was invested in active marketing. In the words of Respondent 1, ‘An important lesson is that “measurability” – even with regards to quality, policy intentions, and implementation – is easier than I had thought. That personal contact, artisanal and painstaking work, is more cost-effective than glossy folders and broad mailings. I was surprised about the impact of simply making intensive phone calls during two weeks’.

According to one interviewee, for the LSM’s longevity it has been vital to pursue strategic opportunities and to incorporate trendy topics of current interest, such as corporate social responsibility (2004), sustainable procurement (2007), and more recently climate change mitigation. In 2013, the National Energy Agreement for Sustainable Growth opened up a window of opportunity as this influential platform (agreed between the national and local governments and various societal stakeholders) pledged a continuation of the LSM. However, some parties advocate a merger with two other monitoring tools, namely the Climate Monitor and Sustainability Balance (Zoeteman *et al.*, 2015), that rely on outcome indicators. In this context, some LSM protagonists fear that the future instrument – tentatively labelled ‘governance monitor’ for the LSM component – will become predominantly outcome oriented, losing attention to process issues and participatory data collection.

Tool Characteristics

In this section, main characteristics of the LSM are addressed. This concerns items and indicators, data collection, disclosure and rankings.

Questionnaire Design and Indicator Selection

For the development of its initial indicators, the LSM drew inspiration from governmental and NGO campaigns. The Association of Dutch Municipalities (VNG) and NGOs participated actively, and a panel with 20 local governments tested draft questionnaires. The LSM clustered indicator items under topics ('energy', 'water and nature' etc) before adopting the 'people, planet and profit' trichotomy in 2010. Questionnaire items relate to potential, generally desirable policy actions – for example, the creation of sustainability-related staff positions in the municipality, the request of certain national subsidies, the adoption of climate policies or sustainable procurement plans, or the application of emerging environmental standards in housing projects.

Questionnaire items have varied over the years to maintain relevance – Table 4 illustrates the distribution of items per theme and edition. The LSM also featured some one-off topics such as 'sustainable construction' (2000 and 2001) and the 'sustainable canteen' (2008). According to Respondent 2, 'dynamic, changing questions in response to changes in policy options is just necessary in order to keep the questionnaire relevant. Being climate-neutral didn't exist on the agenda 10 years ago'. Nonetheless, many items – e.g. on gender or citizen participation – were maintained for years. All items came with the answer categories 'yes' and 'no', and were assigned weights (1, 2 or 3) that were used for the multiplication of scores. Recent versions also allowed municipalities to apply for up to three additional points per domain for efforts not directly covered by the questions. LSM project staff assessed such 'reward claims' for completeness and merit.

Most LSM items addressed (goal-oriented) policies (e.g. 'does your municipality have an integrated plan for the reduction of greenhouse gases?') and not policy outcomes. Less than 5% of items referred to measurable targets. The 2013 LSM edition, for instance, contained one item assessing whether the municipality tracks female participation rates in various projects (policy without threshold) and another one asking whether at least 40% of municipal management posts are held by women (an actual policy goal).

Data Collection

The LSM targeted all Dutch municipalities (537 in 2000, 408 in 2013 following various mergers). At the inception, NCDO and COS made heavy use of network contacts (in particular local environmental NGOs) in order to request the participation of local governments. Initially, the LSM required municipalities to produce responses in interaction with local citizens' organizations. In later years, LSM turned into an online questionnaire to be filled in for each municipality by its civil servants. Data origin was not fully transparent. In one municipality responses may have derived from a civil servant, whereas in another they came from the 'secretary of the responsible public official', and in a third from a team of multiple actors. Efforts needed to respond to LSM questions were considered time consuming the first time, as respondents had to retrieve information from various municipal departments and local companies or citizens' initiatives.

There is slight evidence that there were validity issues concerning data collection (as reported by technical staff engaged in LSM survey compilation). This concerns forms of data manipulation, with respondents eager to answer

Thematic clusters	2002	2003	2004	2006	2008	2009/12	2013
Social domain, citizen participation	16	16					13
Global–local cooperation	25	25	29	29	29	'people': 27	17
Institutional embedding							15
Climate	27	27	43	43	43		20
Water and nature	14	22					17
Spatial planning	19	19				'planet': 30	
Waste and pollution							13
Corporate social responsibility			30	30	30		20
Sustainable procurement				78	78		20
Sustainable procurement – canteen				23	23	'profit': 37	
Mobility							10

Table 4. Number of questionnaire items per theme

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'yes' on questions allowing some scope for interpretation. Moreover, in individual cases a municipal council reportedly blocked the publication of data provided by municipal civil servants. On the other hand, remarkably and perhaps unexpectedly, some municipalities have participated continuously despite repeatedly low rankings. Interviewees indicate that this relates to the autonomy enjoyed by civil servants in the Dutch political context, where local sustainability officers might state their opinions disinterestedly or use low scores to obtain political support in favour of their portfolio.

Disclosure and Rankings

An openly accessible website contained all responses. Scores were summed up per domain ('people', 'planet' and 'profit') and in total and used to rank all participating municipalities based on domain-specific and overall scores. Winners as well as losers were thus pointed out, with information publicly available. Since 1999, each edition has been accompanied by an award (the Sustainability Shield) for the municipality with the highest score. Awards were given to the mayors of the winning municipalities in official ceremonies that were supported by national ministers, attracting media attention.

The LSM's questionnaire, website and other tools (e.g. social media) used plain language and contained visual information in various formats including maps. Figure 3 shows a sample web presentation from the 2013 edition. The website presents detailed results but deliberately did no downloadable data reports, because municipalities were anxious that consultancy firms would use these to barrage them with unsolicited service proposals.

Participation Rates

As awareness raising among local governments was considered one of the LSM's objectives, response rates were considered a key indicator of the tool's legitimacy. Figure 4 presents a graph of the participation rate of Dutch local governments in the LSM over the period of 1999–2013.

The chart shows that during the first three years under NCDO (1999–2001) participation by municipalities was rather low (13%, 15%, 11%). In this period, the LSM office was struggling to obtain responses. When concerns grew about consultation fatigue, in 2002 the LSM team – now led by COS, which had taken over from NCDO – decided to lower the number of questionnaire items. In addition, a new marketing strategy was deployed, in which LSM team members would personally contact local stakeholders by telephone (especially local environmental group members) using their professional networks. As a result, response rates increased to 58% in 2002, to 88% in 2003 and to 92% in the 2004/5 edition (the latter edition however compiled responses over a two-year period and was therefore not comparable to others). After 2005 – when FairBusiness took over from COS – it was decided to hold bi-annual LSM editions. Response rates, however, declined, from the 2002–2004/5 period: 37% in 2007 and 38% in 2009. By 2013 the response rate had declined even further to 27%. According to interviewees, endorsement by reputed institutions – notably the national association of municipalities – legitimized the LSM, while the emergence of competing tools – two other instruments besides the LSM have also started to publish rankings of the Netherlands's 'most sustainable municipality' – have contributed to lower LSM participation rates. An examination of response data reveals that large-sized local governments are over-represented; presumably this relates to large local governments having more capacity available than their smaller counterparts (Hoppe and Coenen, 2011).

Instrumental Use and Influence

The LSM has triggered the adoption of sustainable development policies among municipalities. The public accessibility of LSM results allows local governments to benchmark their own performance against that of others. One interviewee reported that municipalities (at the level of both councillors and public servants) used the LSM 'league tables' to watch evolving performance of peers and to adopt more policy measures before the data collection period was closed formally, thus evidencing the competition effect intended by the LSM. Moreover, 'runners-up' have reportedly also contacted forerunners, asking for advice on what to do to catch up. In the words of Respondent 1, 'Some municipalities (perhaps 10–20) have applied the LSM for policy proofing and have also taken on the competitive aspect in their policies, also for reporting instrument to the municipal council. Groningen and a few Frisian municipalities and Tilburg and Breda are examples of this'. Interestingly, the LSM questionnaire appears to be used

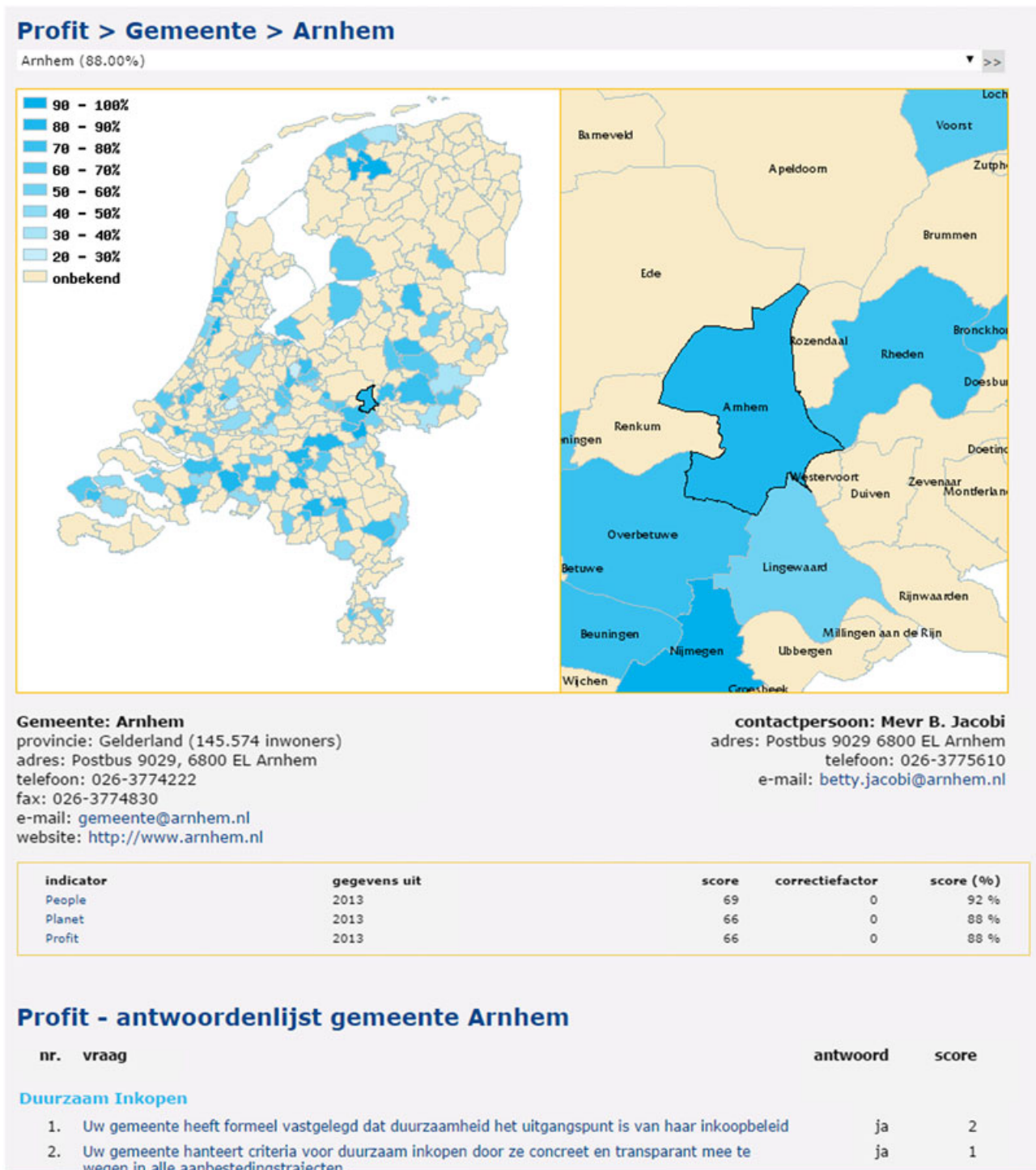


Figure 3. Online presentation of the City of Arnhem's responses (2013)

outside the formal assessment period, when incentives do not apply (e.g. by Tubbergen and Dinkelland in 2014). Reported motivations are the wish of a public official, councillor or civil servant to benchmark the performance of their municipality.

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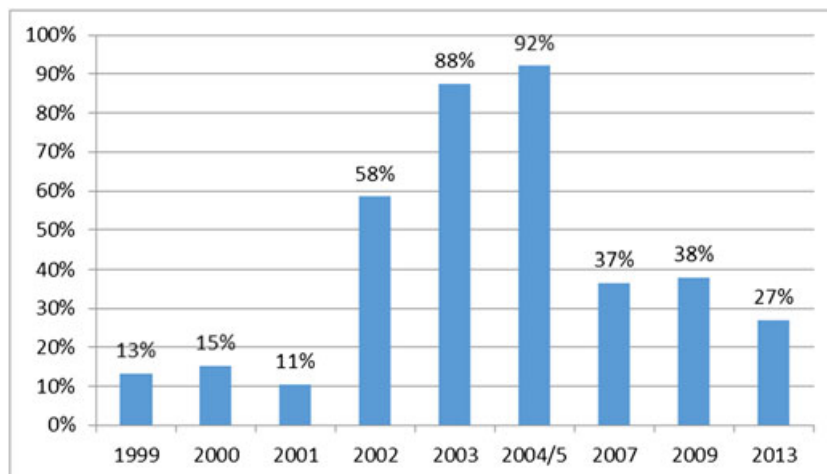


Figure 4. Percentage of Dutch municipalities participating in LSM editions

Conceptual Use and Influence

One interviewee called the start of the LSM an ‘institutional and conceptual phase’ during which NGO staff learned a lot about municipal practices. According to interviewees, the initial requirement of joint responding by municipalities and local civil society organizations was commonly applied and strengthened sustainability-oriented coalitions as intended. The involvement of NGOs decreased during the 2000s yet throughout the LSM’s history there have been cases (e.g. in the City of Wageningen) where local sustainability platforms took the LSM responses of their municipalities as starting point to elaborate a local sustainability assessment report. Respondent 1 recalls ‘Factually the picture produced is most reliable if the LSM is used as intended: in collaboration, in openness, filling the questionnaire or at least going through it together with civil society and stimulating discussions over a few questions. We did that a lot. Over time that decreased and made the instrument a little bit less reliable because transparency decreased’.

Responding to the LSM implies reading about local policy options – the questionnaire begins per domain (people, planet, profit) with a written introduction of key terms and policy frameworks. In particular, the succinct referencing of national guidelines has been appreciated by municipalities and helped them in policy-making. The questions on procurement, for example, contained explanations on the extent to which European Union and Dutch laws allow for the inclusion of sustainability criteria, thus bringing practical advice to civil servants. Moreover, the possibility to access peers responses opens up contacts. According to Respondent 2, ‘There has also been cross-fertilization between frontrunners. City T thought that sustainable economic policies were not really feasible but saw that city G had positively responded to that question. So a phone call was made to find out how they do it. And you see that this sort of questions also appear in council meetings. So it does contribute to agenda-setting’.

Political Use and Influence

The award ceremony for the municipality with the highest score created positive media attention, especially in the early years. Top-scoring municipalities have made explicit political use of positive rankings in their communications. In the words of Respondent 2, ‘the LSM certainly had influence, and certainly was used as frame of reference during election times’. In one case, a municipality reportedly stopped participating after winning the award since it concluded that it had nothing to gain any longer.

Political positioning also played a role within institutions – according to Respondent 3, some civil servants ‘use the instrument to seek attention for their own role within the municipality’. Externally, the LSM has increased the availability of information on government actions to citizens, and this arguably contributed to creating a certain transparency of the democratic process. This approach has inspired tool-makers in other contexts to establish

sustainability monitoring systems of their own. For instance, the LSM's model was emulated by Dutch Water Boards, the Dutch provincial authorities and French activists, who initiated the BDD.

Discussion

What can these findings tell us about the viability and effectiveness of process-oriented monitoring tools? This case study suggests that the LSM's favourable reception has been due to a combination of factors. Some 'enabling conditions' appear to be evident, particularly

- the availability of support (in particular project funding),
- the creation of a recognized brand (endorsement from network partners including respected institutions) and
- the dissemination of policy information in ways that municipal officials consider helpful (e.g. in notes appended to questionnaire items).

These findings about the LSM match observations made in other studies (e.g. Joas *et al.*, 2014) about the importance of institutional support. However, viability over time also requires careful 'balancing acts' (Pollitt, 2013), where the challenge is not maximizing desirable attributes but dealing effectively with competing demands. The LSM has had to consider tensions including

- choosing the 'right' incentives for participation and performance (ranking, awards) without triggering non-participation and reasons for participants to drop out,
- the advantage of comparability (demanding frequent assessments on identical indicators) in evolving contexts (demanding changing indicators),
- continuity whilst avoiding 'consultation fatigue' of respondents and
- scientific demands (validity of items, context-specific information) vis-à-vis transaction costs and participatory methods (self-assessment, standardization).

In dealing with these tensions, LSM managed to create a positively competitive atmosphere that incentivizes municipalities to participate and to perform while avoiding the (complete) dropout of low performers. By relying on self-assessments through questionnaires, it created a model with low transaction costs while tapping the power of transparency to deter manipulations. This configuration is to some extent context dependent. In the Dutch system, all municipalities have identical legal competencies and civil servants enjoy relative autonomy; in more heterogeneous systems and adversarial political cultures, the LSM approach may play out differently and not necessarily solve the problems of low response experienced by other tools (e.g. LE21, BDD and RFSC). To test this hypothesis requires comparative research on process-oriented tools in various settings.

The LSM case suggests various lessons on the advantages and limitations of policy-based indicators. These tend to come with neat links to appropriate politico-administrative scales, increasing relevance for target groups (civil servants and councillors). This can also increase democratic accountability, even though it does not necessarily foster citizen engagement, since policy indicators are inherently abstract. Moreover, policy indicators can facilitate relatively holistic assessments. Conventional output indicators – e.g. 'number of trees planted' that the International Standardisation Organisation proposes as a city sustainability indicator (ISO, 2014) – may provide wrong incentives, whereas the (hypothetical) query for an 'integral air quality programme' can trigger the selection of strategies comprising various outputs. Entrusting local stakeholders to ensure 'integral policies' also helps to account for contextual differences between territories. Furthermore, the public dissemination of information on peers that affirm having developed such policies was shown to stimulate learning. Arguably, knowledge management can be yet more effective if the assessment incentivizes municipalities to share and connect (e.g. by uploading policy documents onto the tool's website), but this is a balancing act too; the compulsory sharing of supporting documents raises thresholds for voluntary participation, and virtual networks only thrive with a critical mass of members. This mirrors observations made about the STAR rating system offered to North American cities, which skilfully combines outcome and process indicators; it is resource intensive and requires cities to pay for certification yet gaining popularity as participants benefit from legitimacy and learning (Elgert, 2016).

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A potentially more problematic aspect of policy indicators is their privileging of regulatory and standardized approaches to sustainable development that do not pay attention to trade-offs, contextual differences and uncertainties. The public management literature (cf. in 't Veld, 2010) refers in this context to 'policy accumulation', i.e. the tendency to respond to policy failure with ever more policies at the expense of experimenting with self-governance and local alternatives. Ultimately, policy indicators may incentivize the production of well-phrased policies printed on glossy paper. On the other hand, many policy recommendations implicit in LSM items concerned multi-stakeholder participation, thus strengthening governance beyond municipal competencies. It is plausible that policy-based indicators are more effective when a policy area is less mature – in countries 'where local sustainability processes are still in the early stages, a focus on concrete activities is needed in order to capture progress' (Garzillo *et al.*, 2014, p. 117). Presumably, this is a reason why policy-based tools were more prevalent in previous decades and why the response rate of the LSM has declined. Arguably, the term 'Sustainability Meter' is to some extent a misnomer – the LSM is less about measurement than about incentivizing local governments, and as such it is not an alternative but a complement to outcome-oriented monitoring.

Conclusions

This article explored as the central research question 'under what conditions can local sustainability monitoring initiatives focusing on processes viably function, and what are their benefits and limitations?'. We applied this question to the case study of the *Local Sustainability Meter* (LSM), a monitoring tool offered to municipalities in the Netherlands. This study showed that an impressive number of municipalities have used the LSM voluntarily. There is evidence that in many cases the tool has had an impact in terms of instrumental, conceptual and political utilization. Some participating municipalities reported learning – in a competitive yet collegial spirit – from others and improving their (policy) performance; in other cases, civil servants and civil society groups used the LSM for self-evaluation and strengthened sustainability-oriented coalitions and local governance arrangements. Overall, the combination of voluntary, transparent self-assessments at multi-year intervals with public awards has proved to be an effective – and economic – way of disseminating sustainability policies among municipalities. An apparent limitation of this approach is the inability to reach all municipalities, and the lack of context-sensitive policy recommendations. Generalizing from this case, it appears that, under the conditions exploited by the LSM (i.e. the political context of Dutch municipalities) and the design choices made by this tool (self-assessments on changing questionnaires with disclosure and awards), process indicators have been put to effective, long-term use. To advance knowledge on the transferability of this approach, however, more research is needed. One important research question concerns the link between sustainability policies, governance efforts and actual outcomes; to minimize selection biases, one could research a random sample of municipalities. Other fruitful research topics include a comparative analysis of different monitoring approaches; in response to differing 'local socio-political opportunity structures' (Holden, 2013). Various authors have speculated about the importance of cultural factors (Hood, 2012). For the promotion of local sustainability policies, the distinction between outcome and process orientation deserves more attention from researchers and practitioners.

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