

# FORESIGHT IN HINDSIGHT: SCENARIO STUDIES AND THEIR LONG-TERM BENEFITS FOR POLICYMAKING

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■ Governmental organizations need to make policy in complex circumstances with uncertain futures. Sustainability as a policy issue emphasizes the importance of anticipating the long-term perspective for public policymaking.

Foresight can be a tool towards sustainable development due to the involved uncertainties, long-term goals and complex system changes, and as is claimed about this fundamental relationship: *“the ultimate aim of strategic foresight appears to be clear: it is sustainability”* (Destatte, 2010, p. 1575). Foresight studies are furthermore used in the development of strategic policymaking and regional sustainable development strategies. They aim to describe how the future might be, by exploring possible futures and identifying conceivable possibilities and key uncertainties, and by identifying promising pathways and creating visions into action. Policy-oriented foresight aims to raise awareness among policymakers about alternative perspectives on future needs and its implications for present-day action.

## Evaluation of scenario studies

Scenario studies as a foresight method are currently being used on several governmental levels, and it is a widely shared methodological tool of the futures field. Scenario studies systematically explore alternative images of the future, including pathways that describe developments, and a variety of uncertainties are combined into distinct stories about the future, and they can create potential future pathways and visions for policy guidance. There are many claims or beliefs of beneficial effects that scenario studies have for policymaking. For example: *“the widely held belief (by policymakers) that future exploration methods are instruments to increase the quality of strategic policies”*

(Rijkens-Klomp, 2012, p. 435). Multiple published scenario studies use these claimed benefits as an introduction to the method or as a justification of using the method, without explaining or referencing the empirical evidence that should provide grounding to these claims.

Empirical evaluation of scenario studies has mainly been done shortly after the study was performed or even during the study. Therefore, the short-term benefits of scenario studies are empirically relatively well-grounded. Empirical evaluation of the impact of the scenario analysis on the policy is not common. There are frequent calls in the literature for further investigation into the outcomes of scenario studies, as they suggest a lack of evidence-based support to substantiate scenario method results. As is pointed out: *“... empirical research is scarce and conclusions are not firmly established whether and how futures studies are used in policymaking processes and politics”* (Veenman, 2013, p. 42).

## Problem statement and research questions

So, long-term benefits of scenario studies have not been empirically evaluated, even though the method plays an important role in regional strategic policymaking for sustainable development. In line with this gap of knowledge, it seems sensible to study the long-term benefits of scenario studies on regional strategic policymaking. The first research question is therefore:

- 1 What are the benefits of scenario studies for regional strategic policymaking in the long-term?

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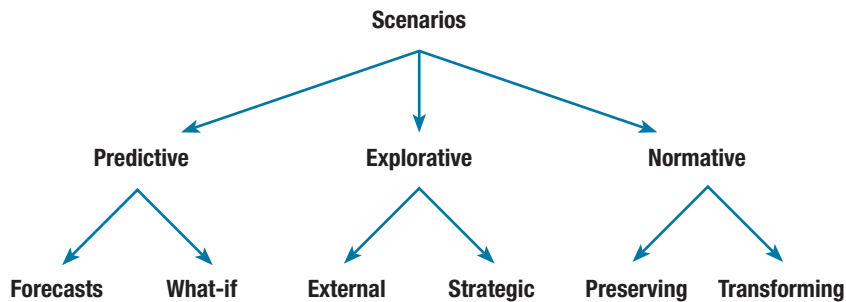


Figure 1. Scenario typology showing six different scenario types, reprinted from Figure 1 on page 725 of 'Scenario types and techniques: towards a user's guide' (2006) by Börjeson et al.

Different types of scenario studies with different functions exist, which correspond with different benefits that can be gained from doing the studies. Satisfaction with a scenario study can be detached from the actual quality of the results. Therefore, it is not evident how the benefits of scenario studies are linked to their core quality. This study analyses two types of scenario studies, external explorative scenarios and transforming normative scenarios (backcasting). The second research question accordingly addresses the role of the core quality:

- 2** *What is the role of the core quality of scenario studies in creating long-term benefits for regional strategic policymaking?*

## Analytical framework

The following chapter describes the analytical framework which is used to create a perspective from which the case studies are analysed. The framework was created by reviewing current literature on foresight, scenario studies and scenario typologies.

### Scenario typology from a user perspective

According to the typology by Börjeson et al. (2006), scenario types can be divided into three categories. These are based on questions that a user of scenario studies might want to pose about the future. The questions that are the basis of the typology are 'What will happen?' (predictive), 'What can happen?' (explorative) and 'How can a specific target be reached?' (normative).

Predictive scenarios aspire to predict what is going to happen in the future, dealing with foreseeable challenges and opportunities. Forecasts and 'what-if scenarios' are the two types of predictive scenarios, both describing what will happen once a likely event unfolds, with 'what-if scenarios' focusing on one specific condition or event.

Explorative scenarios aim to explore situations or developments from a variety of perspectives that regarded as possibilities. External explorative scenarios focus on factors that are beyond the control of the user. Strategic scenarios incorporate policy measures of the user, they focus on internal factors that the user can influence, while taking external factors into account.

Normative scenarios have explicit normative starting points and focus on a certain future situation and try to find ways to realize this. The two types of normative scenarios, preserving and transforming, differ in the way they deal with how the system structure is treated. Preserving scenarios focus reaching the target within the prevailing system, while transforming scenarios focus on changing the current system whereby the current system is seen as part of the problem.

### Focus on two types: External explorative scenarios and transforming normative scenarios

Two specific aims of scenario studies can be identified: first the desire to know possible future developments so that adjustments can be made, and the second being a belief that planning can change development which can be driven by a willingness to change the developmental path. External explorative scenario studies represent the former as it explores future developments, and transforming normative scenarios represent the latter as it focuses on desired developmental paths in order to evoke future change.

#### External explorative scenarios

External explorative scenarios describe developments and uncertainties that are beyond the control of intended users. These scenarios try to answer the question 'What can happen to the development of external factors?'. The core quality of this type is that they explore uncertainties and possible directions these could take, described by some as an 'uncertainty analysis'. The core quality is high when uncertainties are explored extensively and cover a wide bandwidth of possible developments. The aim of external scenarios is to develop a set of scenarios that span a wide scope of possible developments and in this way try to map uncertainties and the direction that they could take.

#### Transforming normative scenarios and backcasting

Transforming normative scenarios are used when a desired future is envisioned that cannot be attained within the current system and developments. The transforming element in these scenarios implies profound changes that need to be made to the structure of the current system to be able to reach the target. The normative element relates to the normative aspect of the chosen target, as this is a desired goal by the user. The core quality of transforming

	External explorative scenarios	Transforming normative scenarios
<b>Aim</b>	Explore the future from a variety of perspectives	Encourage searches for new paths along which developments can take place to reach an envisioned future
<b>Process</b>	Develop set of long-term scenarios with different perspectives on uncertainties of external variables	Backcasting: Long-term target and target-fulfilling images reasoning backwards to present solutions
<b>Function</b>	Inform strategy development	Finding strategies that achieve long-term targets
<b>Core quality</b>	Uncertainty analysis of future developments, identification of key uncertainties and a plausible range of possible developments	Formulation of relevant and guiding long-term normative vision and goals, which includes a profound structural change
<b>Claimed benefits</b>	<ul style="list-style-type: none"> <li>■ Help develop robust strategies</li> <li>■ Open up possibility to find flexible/adaptive solutions</li> <li>■ Make organization more receptive to signals of change</li> <li>■ Contribute to common understanding</li> </ul>	<ul style="list-style-type: none"> <li>■ Creating a vision for guidance and orientation</li> <li>■ Finding options for solving a long-term problem</li> </ul>
<b>Time frame</b>	Often long	Often very long
<b>Descriptive/normative</b>	Descriptive	Normative

Table 1. Differences between external explorative scenarios and transforming normative scenarios.

normative scenarios is, therefore, the guidance and relevance of a long-term vision in order to influence the system. A high core quality is that the vision stays guiding and relevant over a long period of time.

Backcasting is a method used when creating transforming normative scenarios, whereby as a starting point a desired future is envisioned, and then to reason backwards until the present is in view in order to work out what needs to happen to achieve that future.

#### Claimed, assumed and empirically confirmed benefits of scenario studies in academic literature

The distinction between benefits from the foresight process and foresight product, as done by Da Costa et al. (2008), is followed in this study and integrated with the distinction between short-term benefits and long-term benefits in order to create a two-way classification of claimed benefits (Table 2). In this classification ‘short-term’ indicates that benefits are generated during or directly after the foresight product is delivered, whereas ‘long-term’ benefits are generated more than a year after the foresight product is delivered. ‘Process benefits’ come from the scenario building process, while ‘product benefits’ are gained from the results of the scenario study. In Table 2 a review of benefits found in literature is shown, whereby benefits mentioned by various sources with different wording but similar or overlapping meaning have been grouped.

## Research design

This study used a case study approach in order to delve deeply into the previously mentioned research questions. The case study approach was of an exploratory nature, whereby two cases were analysed that were conducted over 10 years ago. The first case study concerns an external explorative scenario study that was done in 2006 by the Province of Limburg titled ‘Limburg een generatie verder’, hereafter referred to as LEGV (Figure 2 shows the four scenarios created). The second case concerns a study following a transforming normative scenario approach which was conducted from 2001 until 2004, whereby the report titled ‘Op Hete Kolen: Een visie op de toekomst van Parkstad Limburg’, hereafter referred to as OHK, was published in 2003. The case study approach consisted of a mixed-method approach including 21 semi-structured interviews, document analysis of the two reports and related policy documents, and a comparative analysis of quantitative data retrieved from public databases and data supporting the first case study (LEGV).

## Results case study Province of Limburg (LEGV)

What is apparent from this case study is that the implementation of external explorative scenario studies into policy is a difficult step to take. Even though the report itself claimed to be beneficial for multiple policy documents (Spring Nota, Coalition Accord and POL2006),

Scenario benefits	Process	Product
<b>Short-term</b>	Future-oriented thinking (4, 5, 11, 13, 14, 15, 19, 20, 24, 26, 27) Inspiration (3, 10, 11, 25, 26) Communication (1, 4, 7, 9, 14, 17, 18, 19, 20)	Awareness (1, 3, 8, 9, 11, 16, 18, 19) Insight (1, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16, 19, 20, 24, 25, 26) Support argumentation (1, 2, 5, 8, 9, 11, 14, 15, 19)
<b>Long-term</b>	Learning (1, 2, 6, 10, 12, 14, 15, 16, 17, 19, 20, 22, 28) Network formation (1, 13, 14, 17, 19, 20)	Evaluation (3, 4, 8, 9, 11, 18, 19) Robust policy (1, 3, 4, 7, 11, 12, 16, 19, 21, 22, 24) Agenda setting (1, 2, 8, 11, 19) Policy measures (1, 2, 8, 11, 14, 17, 22, 23, 24, 25, 27) Anticipation on uncertainties (1, 5, 7, 10, 11, 13, 14, 16, 19, 24, 25, 26) Guidance and direction (7, 18, 19, 21, 22, 23, 25, 27, 28)

Table 2.  
Summary of  
scenario benefits  
found in academic  
literature.

1 = (Johnston, 2012), 2 = (Chermack et al., 2017), 3 = (Rijkens-Klomp, 2012), 4 = (Rijkens-Klomp, 2016), 5 = (Amer et al., 2013), 6 = (Rhisiart, Miller, & Brooks, 2015), 7 = (Börjeson et al., 2006), 8 = (van der Steen & Twist, 2012), 9 = (Dammers et al., 2013), 10 = (Pirainen et al., 2012), 11 = (Brom et al., 2018), 12 = (Haasnoot & Middelkoop, 2012), 13 = (van der Steen, 2017), 14 = (Da Costa et al., 2008), 15 = (Rijkens-Klomp & Van Der Duin, 2014), 16 = (EEA, 2009), 17 = (Baškarada, Shrimpton, & Ng, 2016), 18 = (Svenfelt et al., 2010), 19 = (Höjer, Dreborg, et al., 2011), 20 = (Amanatidou, 2014), 21 = (Vervoort et al., 2014), 22 = (van der Heijden, 2005), 23 = (Quist et al., 2011), 24 = (van Vliet & Kok, 2015), 25 = (Dreborg, 1996), 26 = (Greeuw et al., 2000), 27 = (Höjer, Gullberg, et al., 2011), 28 = (Musse et al., 2018)

it was only mentioned in the POL2006, and according to several interviewees it was only used very indirectly. The most important benefits gained from this scenario study were thus the fact that a certain small group of people started to think more future-oriented and could have structured discussions. For these short-term benefits the core quality of the scenario report was said to not be of importance, as discussions and future-oriented thinking can also be stimulated by a scenario study that is less well researched.

The core quality of this scenario study, the analysis of development of uncertainties, is also deficient in some factors as several trends fell outside the explored bandwidth of the four scenarios.

Perceived constraints to long-term benefits of this study were that the report was not declared official by the Province, the small group of people that were involved and lacking diffusion of the report, further that the

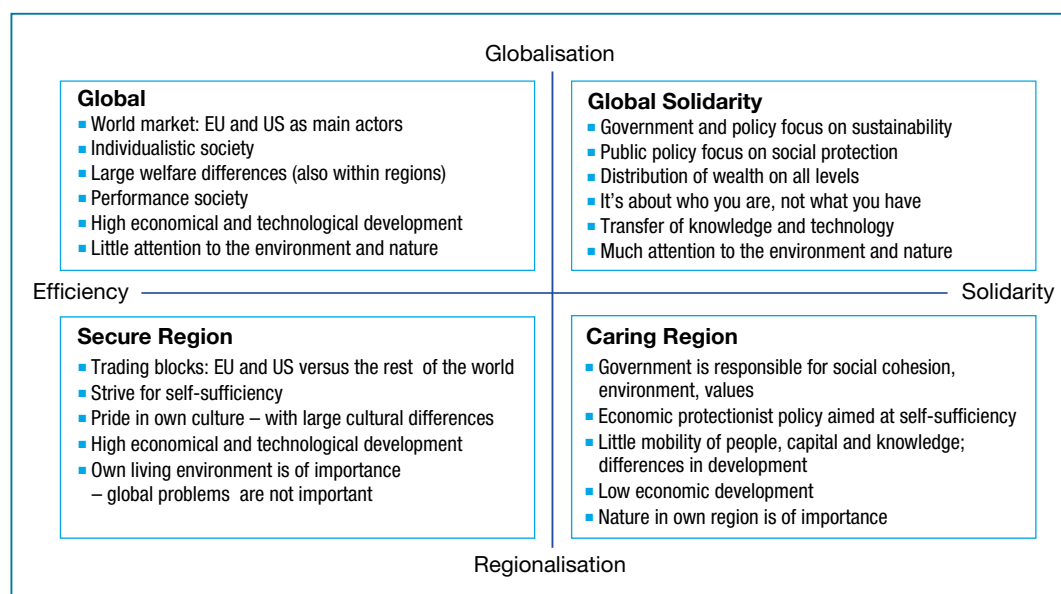


Figure 2.  
Four scenarios  
of LEGV report.

Type scenario study	External explorative scenario study
<b>Aim scenario study</b>	Explore the future from a variety of perspectives and make a starting point for the POL2006
<b>Core quality</b>	Uncertainty analysis of external trends
<b>Importance core quality</b>	Not important for short-term process benefits Important for long-term product benefits
<b>Perceived short-term benefits generated</b>	Future-oriented thinking, discussion tool
<b>Perceived long-term benefits generated</b>	Robust policy (?)
<b>Influenced policy</b>	POL2006 (?)
<b>Perceived constraints: specific to this case</b>	<ul style="list-style-type: none"> <li>- Report not made official</li> <li>- Communication inadequate</li> <li>- Scenario studies 'taboo'</li> </ul>
<b>Perceived constraints: governmental organisation</b>	<ul style="list-style-type: none"> <li>- 4-year cycle: priority change and people change</li> <li>- Politicians do not want to explore but want to implement</li> <li>- The tendency to make policy in short-term is large, long-term disappears from view</li> <li>- Difficult to include uncertainties in policy</li> <li>- Information overload</li> <li>- Sectoral division and disconnect</li> </ul>
<b>Perceived constraints: method scenarios</b>	<ul style="list-style-type: none"> <li>- 4 scenarios are too many to remember</li> <li>- 4 scenarios perceived as political</li> <li>- Cherry picking</li> <li>- Too abstract</li> <li>- Uncertainty is negative</li> <li>- Translation from abstract scenarios to concrete policy measures is difficult</li> </ul>

Table 3.  
Summary results  
case study 1: LEGV.

scenarios were not translated into concrete conclusions, opportunities and measures. Constraints relating to the governmental structure halting the creation of long-term benefits were the 4-year cycle whereby people and priorities changes, the sectoral division halts distribution, the practice of policymaking requires certainty and concrete suggestions and it is, therefore, difficult to translate four scenarios into policymaking. Governmental organisations also tend to have a short-term memory due to an overload of information and changing people.

Furthermore, the four scenarios are also difficult to work with due to potential cherry-picking of desired aspects, abstractness and potential political framing.

## Results case study Parkstad Limburg (OHK)

In 2001 it was concluded in a conference of administrators within Parkstad that the region did not have a clear direction or guideline, and that a comprehensive and integrated vision for the region needed to be made. ICIS was involved to coordinate the process, and they designed the approach to create this vision with three steps: first an integrated problem

analysis, secondly an explorative scenario workshop, and thirdly an envisioning phase including backcasting. For all of these steps civil society actors and policy makers were involved in a 'core group' of participants, selected by ICIS as 'frontrunners', to create a 'transition arena'.

The resulting report OHK describes the problems in Parkstad, a desired vision for 2030, five principles (or 'necessary choices') and opportunities in seven different domains of how to get there, with 'action points' connected to these themes, and a 'transition agenda' as advice for short-term follow-up.

The vision and action points created by this transforming normative scenario method in Parkstad were used in certain domains (especially Housing, Tourism, Culture), and not used much in other domains nor for the general direction of Parkstad. The report itself was referred to by policy documents made shortly after OHK itself, but no more than 6 years later. On how influential the vision was for Parkstad, opinions range from not influential at all to very influential to a particular domain, but for the entire direction of Parkstad interviewees agree that it was not very influential. The core quality of transforming normative scenarios thus was low in this case study,

Type scenario study	Transforming normative scenarios (backcasting)
Aim scenario study	Creating a direction and integrated vision for Parkstad
Core quality	Guidance and relevance of long-term vision
Influenced policy	<ul style="list-style-type: none"> <li>Wgr-plus status (2005)</li> <li>'Perspectief voor Parkstad' (2006)</li> <li>Buitenring (2006)</li> <li>'Stadsvisie Heerlen 2026' (2008)</li> <li>'Wegen naar de toekomst voor Parkstad' (2009)</li> </ul>
Perceived importance core quality	<ul style="list-style-type: none"> <li>Does matter for support of vision in long-term</li> <li>Does not matter for cooperation between actors</li> </ul>
Perceived short-term benefits generated	<ul style="list-style-type: none"> <li>Common understanding</li> <li>Awareness raising</li> <li>Support argumentation</li> <li>Positive perspective</li> <li>Starting point for policy</li> </ul>
Perceived long-term benefits generated	<ul style="list-style-type: none"> <li>Network formation</li> <li>New way of thinking</li> <li>Policy measures (only certain domains)</li> <li>Guidance and direction (only certain domains)</li> </ul>
Perceived constraints	<ul style="list-style-type: none"> <li>Problematic vision</li> <li>Abstract actions</li> <li>Political interests</li> <li>Discontinuity of people and political direction</li> <li>Lack of investments</li> </ul>

Table 4.  
Summary results of  
case study 2: OHK.

as it was not used as integral guidance document or vision. Perceived constraints halting the use and long-term benefits of this transforming normative scenario report were several problems with the way the vision was set up, the abstractness of the action points, political interests conflicting with the vision and execution on a regional scale, discontinuity of politics and people whereby the vision and direction were not remembered or considered by new individuals, and lack of investments. The results of the case study are summarized in Table 4 below.

## Conclusions, discussion and recommendations

### Conclusion on long-term benefits of scenario studies

The benefits cited in literature are more in number than the perceived benefits of the two cases combined (Table 5). In practice, there are multiple constraints halting the long-term use and benefits of scenario studies (Table 6). Especially long-term benefits are slighter in number as perceived by interviewees in the case studies than cited in literature. Empirically these case studies thus do not confirm all theoretically claimed benefits, confirming only the few shown in Table 5, and adding the long-term product benefit for transforming normative scenarios of giving a positive perspective, as this had not been found in literature.

Furthermore, especially for external explorative scenarios the focus needs to be put on short-term benefits instead of long-term benefits for policymaking practice and claims in literature, as from the case study results it seems the long-term translation of benefits into policy of this scenario type is very difficult to achieve. For transforming normative scenario studies long-term benefits for strategic regional policymaking seem more attainable, as the method directly links with policy, and it connects a vision with concrete policy measures. Therefore, transforming normative scenario studies might be more suited to strategic regional policymaking as it achieves a greater impact on policymaking and has more benefits.

### Conclusion on the role of core quality for long-term benefits of scenario studies

Interviewees for both case studies and scenario types indicated the importance of the core quality varied, depending on the benefits at stake. In order to create especially process benefits (both short-term and long-term) such as discussion tool, common understanding, network formation or a new way of thinking, the core quality does not seem to be important. However, for product benefits (both short-term and long-term) interviewees regard the core quality of the scenario type of importance.



Perceived benefits both case studies	Process	Product
<b>Short-term</b>	Future-oriented thinking (1) Discussion tool (1) Common understanding (2)	Awareness-raising (2) Support argumentation (2) Positive perspective (2) A starting point for policy (2)
<b>Long-term</b>	Network formation (2) New way of thinking (2)	Robust policy (1) Policy measures (2) Guidance and direction (2)

Table 5.  
Perceived benefits of both case studies, whereby (1) represents LEGV and (2) represents OHK.

### Results in the context of the academic literature

Long-term benefits especially are not generated as frequently as is claimed by the reviewed literature. It seems academic literature is far too optimistic about the long-term benefits of scenario studies for regional policymaking. The results thus refute current knowledge in part, as there is a disparity between perceived benefits by interviewees and claimed benefits by literature. However, the benefits that are perceived in both cases do correspond with benefits found in literature and thus confirm existing knowledge. Only one short-term benefit is cited by interviewees of the Parkstad case which is not found in the reviewed literature: the positive perspective that transforming normative scenario studies can bring.

An unexpected and important result of these case studies is the multitude of perceived constraints mentioned by interviewees. In literature a few articles mention constraints (or limits, challenges or barriers), including some that do mention factors influencing or the impact of foresight studies and/or scenario studies for strategic policy. Most literature is dedicated to the design and implementation of foresight studies, only a few consider the impacts. Of those few articles empirically reviewing scenario studies most

are dedicated to the successes, impact or influence of scenario studies, and not to the failures or limitations.

Common elements constraining use of scenario studies and/or foresight in existing literature are concerned with e.g. the timing of the study, governmental commitment and organizational embedding, and the limited possibility for concrete translation into policy, which are confirmed by the constraints of Table 5 of this study.

### Recommendations for further research

To confirm and corroborate these findings, further research could include evaluation of more scenario studies of the same type to see if these benefits and constraints are reproduced. One way of doing this would be to use a survey-method and ask participants of scenario studies and policymakers if they have gained certain benefits.

It could also evaluate scenario studies of different types to see if different and/or the same benefits and constraints are found.

Further research could also look into the translation from abstract scenario study to concrete policy, and into

<b>Perceived constraints: governmental organisation</b>	<ul style="list-style-type: none"> <li>■ 4-year cycle: priority change and people change (1)</li> <li>■ Politicians do not want to explore but want to implement (1)</li> <li>■ The tendency to make policy in short-term is large, long-term disappears from view (1)</li> <li>■ Difficult to include uncertainties in policy (1)</li> <li>■ Information overload (1)</li> <li>■ Sectoral division and disconnect (1)</li> <li>■ Discontinuity of people and political direction (2)</li> <li>■ Political interests (2)</li> </ul>
<b>Perceived constraints: scenario method</b>	<ul style="list-style-type: none"> <li>■ 4 scenarios are too many to remember (1)</li> <li>■ 4 scenarios perceived as political (1)</li> <li>■ Cherry-picking (1)</li> <li>■ Too abstract (1)</li> <li>■ Uncertainty is negative (1)</li> <li>■ Translation from abstract scenarios to concrete policy measures is difficult (1)</li> <li>■ Problematic vision (2)</li> <li>■ Abstract actions (2)</li> </ul>
<b>Perceived constraints: specific to the cases</b>	<ul style="list-style-type: none"> <li>■ Report not made official (1)</li> <li>■ Communication inadequate (1)</li> <li>■ Scenario studies 'taboo' (1)</li> <li>■ Lack of investments (2)</li> </ul>

Table 6.  
Summary of perceived constraints of both case studies, whereby (1)= LEGV and (2)= OHK.

how this could be improved, as it was stated by multiple interviewees that this constraint exists, but it was not explained in detail how or why. Until now the focus has not been on constraints concerning scenario studies while awareness of constraints would improve both practice and theoretical scenario study methodology.

This research did not result in a large number of long-term benefits of scenario studies for policymaking, a recommendation is to focus on short-term benefits of scenario studies in further research and in justification for using this methodology.

Finally, robust policy is mentioned by multiple academic articles as the most important or prevalent benefit of scenario studies, but this was not clearly confirmed in this research. Further research should therefore investigate if policy is made more robust with scenario studies, and how this process works. Additionally, the link between robust decision-making literature and foresight literature should be explored.

### Recommendations for practice

Firstly, integration of a broad range of actors into the scenario process would be helpful especially to tackle the discontinuity constraint that was apparent in both case studies. The risk of actors leaving and benefits of scenario studies disappearing with them then becomes less. ‘Selective participation’, as was used in the Parkstad case study is a good approach in this respect, though a few criteria should be added: actors must be passionate about the topic or area (not just be top managers), actors must be diverse and a combination of civil servants, civil society and politicians in order to broadly diffuse benefits, and there should preferably a mix between younger and older actors in order to increase longevity of benefits in an organisation.

Secondly, when making concrete action points their impact would increase if they are realistic, feasible and relevant and close to people. This could increase the uptake of action points and ownership of organizations or individuals over certain action points. Attaching an implementation program or adding a financial commitment could further increase ownership and implementation, therefore increasing the longevity of the relevance of the scenario study.

Thirdly, the scenario study needs to be updated every few years, both with transforming normative scenarios where backcasting actions could be recreated and evaluation of how the direction and vision are taking place and with external explorative scenarios in order to incorporate unforeseen developments and new uncertainties. To update and evaluate every few years would also increase the future-oriented culture of an organisation and might institutionalize the scenarios, whereby they would more likely be taken into account for policymaking.

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## SAMENVATTING

Het gebruik van scenariostudies als methode wordt gerechtvaardigd met aannames over de korte- en lange-termijn voordelen ervan voor het maken van beleid. Echter, de lange-termijn voordelen hebben weinig empirische onderbouwing en de bestaande literatuur vraagt dan ook om lange-termijn evaluatie van de voordelen van scenariostudies voor regionaal-strategische beleidsvorming. Bovendien is de link tussen de kernkwaliteiten van het type scenariostudie en de bijbehorende voordelen niet onderzocht in de huidige literatuur. Deze twee kennishiaten zijn in deze studie onderzocht met twee verkennende casussen, waaruit geconcludeerd kan worden dat scenariostudies wel voordelen kunnen bieden, maar veel minder dan wordt geclaimd. Er zijn meerdere belemmeringen gevonden, die te maken hebben met het type scenario, de specifieke casus en de overheidscontext van beleidsvorming. De rol van de kernkwaliteiten voor de gevonden voordelen bleek niet belangrijk, en zelfs geheel irrelevant wanneer het gaat om voordelen die voortkomen uit het scenarioproces. Aanbevolen wordt om concrete actiepunten te verbinden aan de scenario-rapporten, de scenario's om de paar jaar te updaten, en om een breed scala aan deelnemers te betrekken, om op deze manier de voordelen te vergroten en te behouden.

### For further sources see the full thesis report:

van Holsteijn, S. (2019). *Foresight in Hindsight: Assessing the long-term benefits of scenario studies for regional strategic policymaking* (Master thesis). International Centre for Integrated Assessment and Sustainable Development, Maastricht University.