



LANDSKAPSARKITEKTUR
TRÄDGÅRD VÄXTPRODUKTIONSVETENSKAP
Rapportserie

Ecosystem Services in Municipal Spatial Planning Progress Report, Sweden 2015

Tim Delshammar

Department of Landscape Architecture, Planning and Management

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Fakulteten för landskapsarkitektur, trädgårds- och växtproduktionsvetenskap

Rapport 2015:23
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Abstract

The Swedish government decided in 2012 that the importance of biodiversity and the value of ecosystem services should be integrated in planning and other decision processes latest in 2018. However, it is not self-evident how to implement the importance of biodiversity and the value of ecosystem services in spatial planning practice. The aim of this report is to explore how far Swedish municipalities have progressed regarding the integration of ecosystem services in urban spatial planning and what can be learnt from the efforts so far. The data for this progress report was gathered by means of a telephone survey. The results show that the integration of ecosystem services is in an early stage in Swedish planning practice. However, the lack of practical experiences makes many planners hesitant to get started. The overall picture is that most planners seem to regard it as a technical issue that can be solved by experts and assessment/ planning tools. For future spatial planning practice it is recommended that value of ecosystem services should be negotiated instead of assessed by experts.

Keywords: ecosystem services, spatial planning, Sweden

Foreword

This progress report is part of the FUSE research platform (Future Urban Sustainable Environment) at SLU (see <http://www.slu.se/en/collaborative-centres-and-projects/future-urban-sustainable-environment-fuse/>). It is thus one step in the exploration of how Swedish municipalities actually handle the issue of compact and green urban environments. It is also a part of the ongoing research project GREEN SURGE that is identifying, developing and testing ways of linking green spaces, biodiversity, people and the green economy (see <http://greensurge.eu/>).

The data collection was done by Douglas Heed within the Student Desktop Research-project at SLU. The questions used in the survey were developed with help from Sara Borgström and Erik Andersson, Stockholm Resilience Centre. Nina Vogel at the Department for Landscape Architecture, Planning and Management has reviewed and commented the report.

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1 Introduction

Ecosystem services as a planning concept has had a rapid development during the last decade. As a scientific analytical concept it emerged in the early 80ties and was further elaborated during the following decades. Between 2001 and 2005 the expert group Millennium Ecosystem Assessment (MA, 2005) developed the scientific basis for actions for a sustainable use of ecosystem services. Since 2007 a follow up with the aim to mainstream the values of biodiversity and ecosystem services into decision-making has been done by the global initiative The Economics of Ecosystems and Biodiversity (TEEB, 2015). In 2010 the governing body of the Convention on Biological Diversity decided on a Strategic Plan for Biodiversity 2011-2020 including the strategic goal to “ensure the continued provision of ecosystem services and to ensure access to these services” (COP, 2010).

The Swedish government decided in 2012 that the importance of biodiversity and value of ecosystem services should be integrated in planning and other decision processes latest in 2018 (Miljödepartementet, 2012). The introductory paragraph of the existing Swedish Planning and Building Act states that the overall aim of the planning legislation is to promote “good social living conditions and a good and sustainable living environment for the people in today's society and for future generations” (SFS 2010:900). Thus, the planning legislation on a general level supports an integration of ecosystem services in the planning process. Some municipalities, like Örebro Municipality (Örebro kommun, 2010) and City of Malmö (Malmö stad, 2014), have already integrated the ecosystem service concept in their comprehensive plans. However, a government bill approved by the Swedish Parliament limits the scope of the municipalities' authority when it comes to setting environmental goals in the planning process (Sveriges Riksdag, 2014). Thus, it is at the moment unclear how strong governmental or legal support the Swedish municipalities have to enforce the ecosystem service perspective in spatial planning.

As suggested by the decade-long evolvement of ecosystem services-in-planning, it is not always obvious how to integrate it in planning. The FUSE research plat-

form at the Swedish University of Agricultural Sciences (SLU) aims at, among other things, to explore the relationship between the built environment and green environments in cities. To develop knowledge about ecosystems and urban environments is a part of the university's strategy for 2013-2016.

The aim of this report is therefore to explore how far Swedish municipalities have progressed regarding the integration of ecosystem services in urban spatial planning. Furthermore, what can be learnt from the efforts so far? More specific, the questions for this report are:

- How well known is the ecosystem service concept among municipal planners?
- To what extent has ecosystem services been integrated in municipal plans?
- Which parts of the municipalities deal with ecosystem services?
- Do municipalities cooperate with other actors to develop knowledge or standards regarding ecosystem services in planning?
- Which difficulties or obstacles do urban planners perceive dealing with ecosystem services?

1.1 Methods and material

The data for this progress report was (with three exceptions) gathered by means of a telephone survey. The municipal switchboard was called and the caller asked to be directed to the City Planning Office (or corresponding unit) to speak with someone working with strategic planning issues. The responding planners were asked if he or she had knowledge of the ecosystem services concept. If the respondent didn't know the concept the caller asked for a suggestion of who could answer the survey and then ended the call. The respondents for the survey included both those who only answered the first question and those who answered the whole survey.

The three metropolitan municipalities and one of the large cities were contacted by means of email. These emails were sent to planners that were expected to have knowledge of ecosystem services. Thus, in these cases the respondent of the survey were less randomly chosen.

The municipalities that were contacted were chosen to represent a variety of types. Therefore the selection of municipalities was based on classification made by the Swedish Association of Local Authorities and Regions. This categorizes the municipalities into ten groups on the basis of structural parameters such as population, commuting patterns, tourism and travel industry and economic structure (SKL, 2011). From each group at least 25% of the municipalities are represented in the survey. In all 88 planners, representing 79 municipalities answered the survey (see Appendix, Table 1).

2 Result and discussion

2.1 Knowledge of the ecosystem service-concept

79 of 88 responding planners (90%) answered that they had knowledge of the ecosystem service concept. Even though knowledge of the concept might not be spread to all staff, it seems likely that there are at least one or a few persons in almost all Swedish municipalities that are familiar with it. The surveyor was instructed to ask for someone working with strategic planning issues at the City Planning Office. Thus, the respondents could be professionals with different backgrounds, like architects, landscape architects, spatial planners or ecologists. Many municipalities have a separate Environment Department and it seems likely that also officials at these departments have knowledge of the concept. However, to have knowledge of the concept can be anything from having a vague idea of what it means to be able to use it as a planning tool.

2.2 The usage of the ecosystem service-concept in planning documents

Even though knowledge of the ecosystem service concept seems fairly well spread, the usage of it in planning documents is limited. Only about half of the respondents answered that they knew that it was used in municipal planning documents. To use it in the comprehensive plan was most common, followed by detailed plans and the green plan. However, it is likely that a respondent working with strategic planning issues is familiar with the comprehensive plan, but not necessarily with the other plans mentioned. Thus the accuracy of the answers is probably better when it comes to the comprehensive plan.

Of the plans explicitly mentioned, it should be remarked that only the detailed plans are legally binding. The other plans are, even if they are decided at municipal level, only guiding the planning process. It is not clear whether the usage of

ecosystem services in detailed plans refers to the planning process or the plans as legal documents. As the Swedish Planning and Building Act requires the planning process to aim for a sustainable living environment, it is likely that at least one or a few services (provision of recreation, storm water management) are considered in most planning process but not necessarily the whole range of services. There is a considerable difference between taking services into account in the planning process compared to using services in an actual detailed plan.

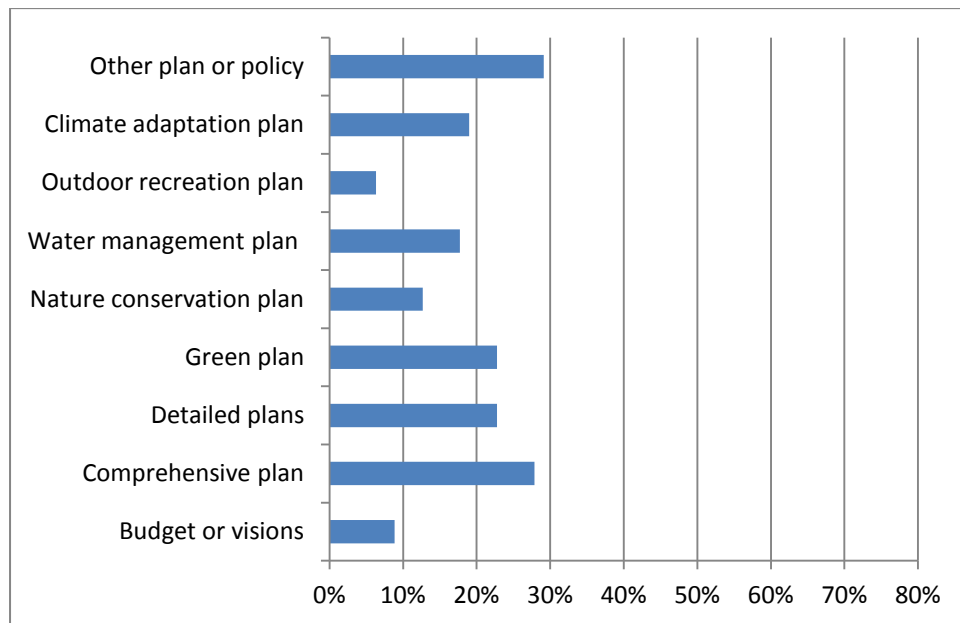


Figure 1. The diagram shows the percentage of municipalities where a respondent answered that he or she knew that ecosystem services were being used in the mentioned planning document.

2.3 The municipal units/department that handles ecosystem services

In 78% of the responding municipalities ecosystem services was handled in at least one department, most commonly at the City Planning Offices. This is expected as it is the City Planning Offices that have the main responsibility for sustainable planning. But the number can also be a consequence of the fact that a majority of the respondents worked at a City Planning Office. It should be noted that overall, there was a higher percentage of municipalities that had one or several departments that handled ecosystem services compared to the percentage of municipalities that used ecosystem services in planning documents. It seems likely that many municipalities are in an early stage of adaptation and that the integration of the importance of biodiversity and the value of ecosystem services in planning documents will come later.

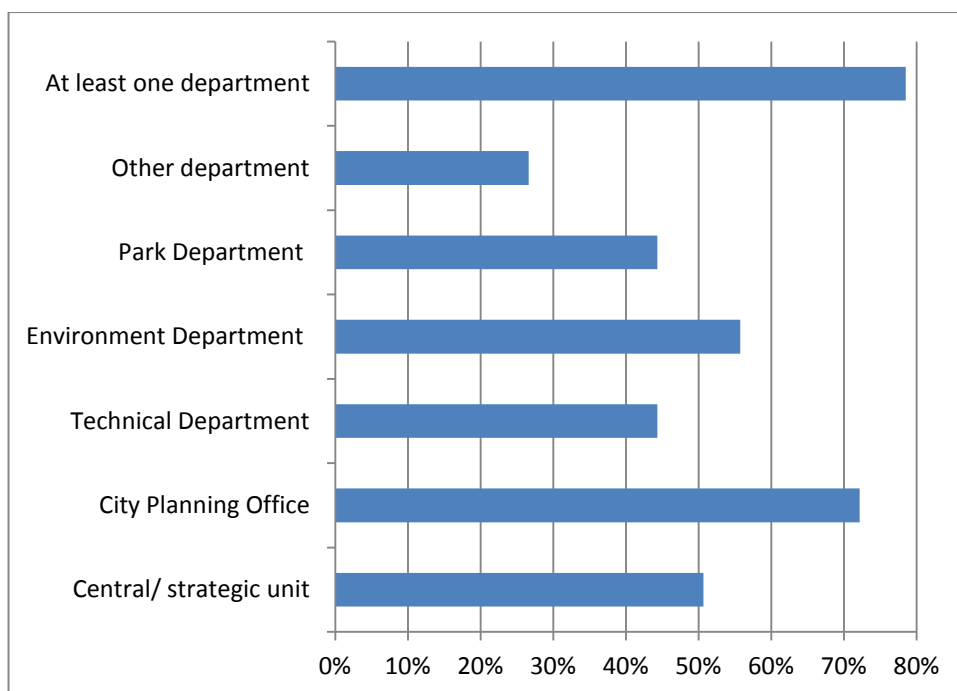


Figure 2. The diagram shows the percentage of municipalities where a respondent answered that he or she knew that ecosystem services were being dealt with in the mentioned municipal departments.

2.4 Cooperation

Almost half of the participating municipalities cooperated with other actors, mostly with other municipalities but also with consultants and researchers. This can be seen as a confirmation of the earlier assumption that many municipalities are in an early stage of adaptation and thus need to explore how to integrate ecosystem services in planning and management.

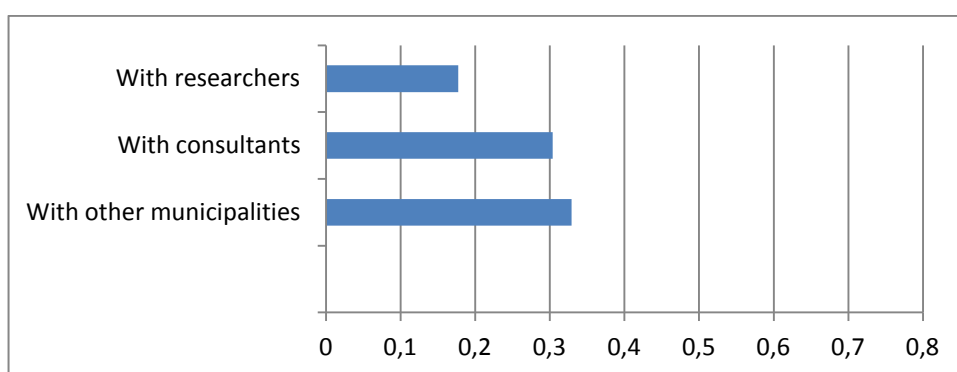


Figure 3. The diagram shows the percentage of municipalities where a respondent answered that he or she knew that ecosystem services were being dealt with in cooperation between the municipality and an external partner.

2.5 Difficulties and obstacles

Most of the respondents gave examples of difficulties or obstacles in their efforts to integrate ecosystem services in planning and management. These were classified into four categories: conflicting goals; implementation; knowledge gaps; lack of legal support (see Appendix, Table 2.).

Responding planners in a few, but far from all, of the growing municipalities mentioned conflicting goals as one important obstacle to integrate ecosystem services in spatial planning and management. An interpretation of these comments is that it has to do with a conflict of space. Development often requires land the same way as ecosystems do.

Besides the few comments related to conflicting goals, it is hard to find a pattern that distinguishes the different types of municipalities from each other. Instead the different views seem to be the same regardless of in which type of municipality the responding planner work.

The most common remark on difficulties or obstacles concerns the implementation of ecosystem service in spatial planning. Many stress the need for planning methods or tools that integrate ecosystems services. Many perceive ecosystem services as a new way of planning that takes time and experience to implement.

Some emphasise aspects of economy, for instance that the planning process or the development projects might get more expensive. Some planners mention that small municipalities may not be able to afford the anticipated additional costs. Other mention that investments in ecosystem services will not return revenue for the developers.

The second most common remark on difficulties or obstacles concerns knowledge. Some of these comments stress the need to spread knowledge about ecosystem services, for instance to the municipal politicians. Other stresses the need for more experts that can be part of the planning process. One respondent express a concern of having only one expert at the municipality being able to deal with ecosystem services.

Only a few planners comment that they believe that it is a problem that the legal support for an integration of ecosystem services is weak. This may be a result of the somewhat contradictory directions from the government. On one it has been decided that ecosystem services should be integrated in planning, on the other hand, the executive power of the municipalities to integrate it has been restricted.

2.6 Method considerations

The target group for this survey was planners at the municipal planning office which means that the respondents can be expected to have sufficient knowledge about the contemporary planning goals and practices at the municipality. How-

ever, in larger municipalities the knowledge about planning at other departments might be insufficient. It should also be remarked that the respondents were requested to respond to questions concerning their own knowledge, not to prove their statement with documents or references. Though most respondents stated that they had knowledge about ecosystem services, it is likely that a large share of the respondents only had shallow knowledge. This means that the questions might have been interpreted in different ways. The surveyor did not use follow up questions to pinpoint exactly how the questions were interpreted. Given these limitations, the result of this survey can be regarded as an indication of how well integrated the ecosystem service perspective has become in Swedish planning practice.

3 Conclusions

The concept of ecosystem services is known in most Swedish municipalities. However, the usage of it in planning documents is still limited. When it is used (explicitly or implicit) it is mostly in the municipal comprehensive plans. Many of the planners can give examples of difficulties or obstacles to use ecosystem services. About half of the municipalities cooperate with other municipalities, researchers or consultants in order to implement the importance of biodiversity and value of ecosystem services in planning practice.

The use of ecosystem services is in an early stage in Swedish planning practice. The government as well as the municipal planners are determined to start to use the perspective. The engagement is to some extent fuelled by governmental decisions, but likely also by a professional interest in planning as a (visionary) holistic project. The idea of taking a holistic view on planning, including the values of nature, is since long integrated in a Swedish planning tradition and legislation. However, planning in practice is likely to be guided by the issues perceived as most urgent, like the need for housing in growing urban areas. The lack of practical experiences makes many planners hesitant to get started.

The overall picture is that most planners seem to regard it as a technical issue that can be solved by better knowledge and better planning tools. Very few seem to regard it as a political issue that has to do with values and beneficiaries. A dominant view among planners is that this is an issue to be solved by experts not politicians. None of the responding planners expressed the view that ecosystem services based spatial planning is something that demands negotiations between different stakeholders and different societal needs.

My suggestion for future planning practice is that the values of different ecosystem services principally should be negotiated between stakeholders instead of assessed by experts. This would be in line with international recommendations (see TEEB, 2015). It is also likely to facilitate the implementation of ecosystems in planning.

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Appendix

Table 1. *Participating municipalities ordered according to the categories suggested by the Swedish Association of Local Authorities and Regions.*

| Municipal Category | Definition | Participating Municipalities |
|---|--|---|
| <i>Metropolitan municipalities</i> (in all 3 municipalities) | Municipalities with a population of over 200,000 inhabitants. | Göteborg and Malmö. |
| <i>Suburban municipalities</i> (in all 38 municipalities) | Municipalities where more than 50 per cent of the night population commutes to work in another municipality. The most common commuting destination must be one of the metropolitan municipalities. | Botkyrka, Danderyd, Hanninge, Huddinge, Järfälla, Lidingö, Nacka, Tyresö, Öckerö and Österåker. |
| <i>Large cities</i> (in all 31 municipalities) | Municipalities with 50,000-200,000 inhabitants and more than 70 per cent of the population lives urban areas. | Eskilstuna, Halmstad, Kalmar, Kristianstad, Lund, Skövde, Sundsvall, Västerås and Örebro. |
| <i>Suburban municipalities to large cities</i> (in all 22 municipalities) | Municipalities in which more than 50 per cent of the night population commutes to work in a large city. | Eslöv, Höör, Knivsta, Kumla, Mörbylånga and Trosa. |
| <i>Commuter municipalities</i> (in all 51 municipalities) | Municipalities in which more than 40 per cent of the night population commute to work in another municipality. | Alingsås, Alvesta, Aneby, Bjurholm, Gagnef, Hallstahammar, Heby, Hjo, Krokomb, Kungsör, Orust, Strängnäs, Ängelholm and Östra Göinge. |
| <i>Tourism and travel industry municipalities</i> (in all 20 municipalities) | Municipalities where the number of guest nights in hotels, youth hostels and camping sites is higher than 21 nights per inhabitant and the number of holiday homes is higher than 0.20 | Båstad, Gotland, Lysekil, Malung-Sälén and Åre. |

| | | |
|---|---|--|
| | per inhabitant. | |
| <i>Manufacturing municipalities</i> (in all 54 municipalities) | Municipalities where more than 34 per cent of the night population aged 16 to 64 is employed in manufacturing, mining, energy, environmental and construction industries. | Arboga, Arvika, Avesta, Bengtsfors, Emmaboda, Filipstad, Finspång, Gislaved, Gnosjö, Götene, Hultsfred, Köping, Ljungby and Ludvika. |
| <i>Sparsely populated municipalities</i> (in all 20 municipalities) | Municipalities where less than 70 per cent of the population lives in urban areas and less than eight inhabitants per km ² . | Bräcke, Nordanstig, Strömsund, Vansbro, Årjäng and Åsele |
| <i>Municipalities in densely populated regions</i> (in all 35 municipalities) | Municipalities with more than 300,000 inhabitants within a 112.5 km radius. | Flen, Hällefors, Karlshamn, Kristinehamn, Mjölby, Motala, Sala, Ystad and Älmhult |
| <i>Municipalities in sparsely populated regions</i> (in all 16 municipalities) | Municipalities with less than 300,000 inhabitants within a 112.5 km radius. | Boden, Hudiksvall, Kramfors and Mora |

Table 2. *Comments concerning the difficulties or hinders that urban planners perceive dealing with ecosystem services. The column Category shows how the comments have been interpreted.*

| <i>Comments from metropolitan municipalities</i> | <i>Interpretation</i> |
|--|--|
| There is a need to balance the need for space for development versus space for ecosystem services. | Conflicting goals |
| There is no clear support in the Comprehensive plan and the Green Plan. We need better support in the Planning and Building Act. The organizational structure needs to change to facilitate a greater consensus within the municipality. But also between municipalities. Knowledge and understanding is too low. There is a need for a broad, deep knowledge increase for all actors. | Lack of of legal support Knowledge gaps |
| <i>Comments from suburban municipalities</i> | <i>Interpretation</i> |
| Ecosystem services is not yet defined. | Knowledge gaps |
| To get ecosystem services to a concrete level: what does it mean in the single project? | Implementation |
| How to implement it in practice? | Implementation |
| Lack of knowledge. Assessment. How do you communicate it in a comprehensive way? | Knowledge gaps |
| Better tools and concrete examples are needed to assess ecosystem services in monetary terms | Implementation |
| It is difficult to plan for funding of ecosystem services as the budget is done far in advance. It is difficult to meet a need with an appropriate measure as long as it is not tied to revenues. | Implementation |
| There are conflicts between the municipality's vision and the ecosystem. | Conflicting goals |
| We don't know how to make clear what the benefits of ecosystem services are; to provide figures on the benefits (quantify). | Implementation |
| <i>Comments from large cities</i> | <i>Interpretation</i> |
| It is difficult to include the whole chain | Implementation |
| There are no instruments and tools in the legislation. | Lack of of legal support |
| Assessment. | Implementation |
| We need methods and tools for working with ecosystem services in planning. It is difficult to know how the assessment and documentation of ecosystem services should be done and by whom. There is also no easily accessible information about the concept. | Implementation Knowledge gaps |
| I do not think ecosystem services are understood properly. It is defined differently depending on planners profession and educational background. It is not a prioritized issue for our politicians. | Knowledge gaps Implementation |
| It is services that will not return revenue. | Implementation |
| There is a lack of knowledge among the officials involved. | Knowledge gaps |
| There is a lack of practical methods for how to map ecosystem services. There is no guidance on how to go about it. There is a need for a platform for joint cooperation and development. There is a need for knowledge dissemination of the development | Implementation |

on a national level.

| <u>Comments from suburban municipalities to large cities</u> | <u>Interpretation</u> |
|--|-------------------------------|
| There is no established approach. | Implementation |
| Lack of knowledge. It is hard to get everyone involved to understand what it means. How does one find suitable approaches? It is difficult to change current processes. | Knowledge gaps Implementation |
| Ignorance among politicians and officials: What should be done? They do not know the concept. | Knowledge gaps |
| How do you work with it? There is no guidance from the County Administrative Board that review our plans. | Implementation |
| <u>Comments from commuter municipalities</u> | <u>Interpretation</u> |
| Another concept to deal with | Implementation |
| Financial resources | Implementation |
| There is a lack of competence. . Lack of time. Knowledge of how to value and prioritize? | Implementation Knowledge gaps |
| There is inflation in the concept and it is distorted. It is hard to assess it. There are no practical tools that have research support. | Knowledge gaps Implementation |
| Lack of resources (time, money, staff) | Implementation |
| People have an idea of what they want and not see the value of ecosystem services | Knowledge gaps |
| It is hard for a small municipality to do a monetary assessment. | Implementation |
| <u>Comments from tourism and travel industry municipalities</u> | <u>Interpretation</u> |
| It includes so much more than nature conservation which makes it difficult to the scope. It is hard to make it comprehensible so that you do not need to be the for example a landscape architect to understand the concept. | Implementation Knowledge gaps |
| The concept is not sufficiently known. Economists find it difficult to assess the benefits. The benefits will not always be beneficial for the one who pays. | Implementation Knowledge gaps |
| Time and political will is lacking. | Implementation |
| Lack of knowledge. I understand the theory but do not really know how to work with it in spatial planning practice. | Knowledge gaps Implementation |
| Lack of knowledge, political will, money and coordination | Implementation |
| <u>Comments from manufacturing municipalities</u> | <u>Interpretation</u> |
| There is a fear to tackle it because of old habits. How should it be implemented and how should the benefits be conveyed? | Implementation |
| Lack of knowledge. | Knowledge gaps |
| It takes a lot of energy to start working with it. It will affect a spatial plan a lot. The costs for hiring consultants would be far to high for a small municipality. | Implementation |
| The concept is not established or used. | Knowledge gaps |
| It will affect costs and maintenance. It is also about attitude. | Implementation |
| Lack of knowledge | Knowledge gaps |
| Lack of resources in small municipalities. | Implementation |

| | |
|---|--|
| Knowledge and time | Implementation Knowledge gaps |
| Lack of knowledge. | Knowledge gaps |
| Lack of knowledge. | Knowledge gaps |
| Lack of knowledge. It is a new concept. How do you work with it? | Implementation Knowledge gaps |
| We have only one expert and and shortage of staff. It is very vulnerable to have only one expert. | Implementation Knowledge gaps |
| <i>Comments from sparsely populated municipalities</i> | <i>Interpretation</i> |
| Lack of knowledge. Lack of information. It is hard to assess the value. | Knowledge gaps |
| Resources | Implementation |
| It is not prioritized due to lack of resources (staff). | Implementation |
| <i>Comments from municipalities in densely populated regions</i> | <i>Interpretation</i> |
| It has taken a long time for the knowledge to be spread. | |
| Politicians must prioritize it and give us commission to work with it. Financial resources. How to assess it. How to get revenue from investments. | Implementation |
| Difficult to reach consensus. We lack an environmental engineer. | Implementation Knowledge gaps |
| Get others to understand the importance of ecosystem services. To spread the understanding. Lack of resources. How to prioritize and get the overall picture. | Knowledge gaps Implementation |
| Large and fuzzy concept: complicated and not very concrete. Difficult to see the consequences of the measures taken. | Implementation Knowledge gap |
| Requires a broader approach than the usual. Tight budget. Difficult to assess the losses. Difficult to work with when it takes place under duress when you have to compensate to get things done. | Implementation |
| Lack of knowledge among politicians. That that it comes in conflict with other goals. | Knowledge gaps Conflicting goals |
| How to put a value on that? | Implementation |
| More explicit standards must be formulated in e.g. The Planning and Building Act. As long as there is no legal requirement, the market will not consider ecosystem services. Ecosystem services are luxuries for small municipalities. You do not have the energy or the resources to work with it. | Lack of of legal support Implementation |
| <i>Comments from municipalities in sparsely populated regions</i> | <i>Interpretation</i> |
| It is difficult to get an overall perspective as the responsibility is fivided between several different municipal departments. There are no planning tools. The comprehensive plan is ancient. There hasn't been taken any strategic decisions on the issue. | Implementation |
| Lack of knowledge: how do you assess the ecosystem services? | Implementation Knowledge gaps |
| Timing, ignorance and lack of staff. | Implementation Knowledge gaps |

