SELINA

SCIENCE FOR EVIDENCE-BASED AND SUSTAINABLE DECISIONS ABOUT NATURAL CAPITAL

Country Fact Sheet

SWEDEN

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Country Fact Sheet: Sweden (SE)

Edited by:
Berit Balfors and Ulla Mörtberg

KTH Royal Institute of Technology

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This fact sheet is based on what partners in SELINA know about what is going on in their country and some additional literature. If you feel there are ongoing or upcoming research projects, policy initiatives or legislations, concerning the use of biodiversity, ecosystem condition and ecosystem services knowledge in decisions and policies, missing please contact inge.liekens@vito.be and we update the country fact sheet (until March 2027)

Contents

1 Update on projects concerning biodiversity, ecosystem condition and ecosystem services assessment and accounting since 2022

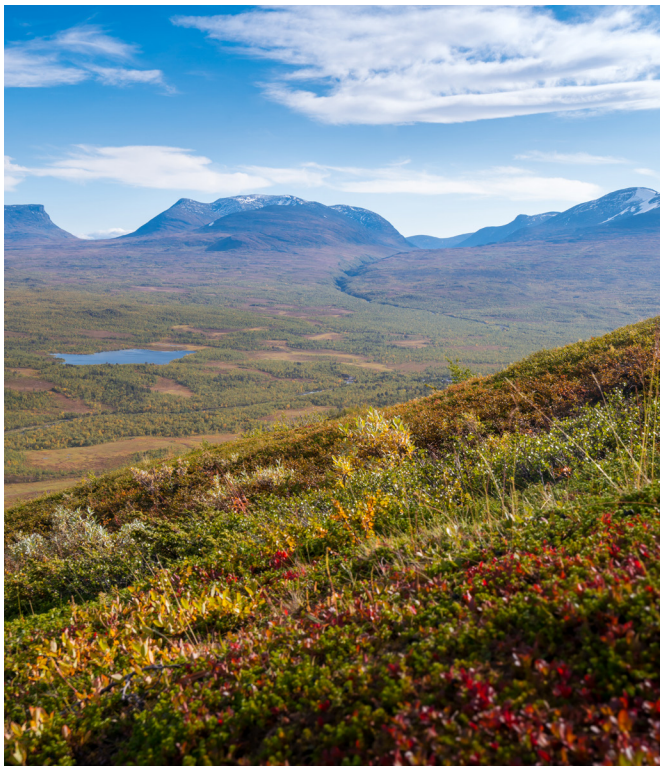
Sweden has a well-developed system for monitoring the state of the environment, which describes both the current state and changes in the environment. The Swedish EPA coordinates the environmental monitoring (https://www.naturvardsverket.se/om-miljoarbetet/miljoovervakning/). The Swedish time series are in many cases unique in their length. The national environmental monitoring aims to provide a holistic view of the environmental status in Sweden and has been conducted since 1978. Studies are carried out in different natural habitats, with a variety of tests. Revisions of the program are carried out approximately every five years.

The state-funded national environmental monitoring is divided into ten program areas. The Swedish EPA oversees eight of these areas, which include forests, wetlands, and mountains, as well as health-related environmental monitoring and the coordination of toxic substances. The Swedish Agency for Marine and Water Management is responsible for two program areas: Sea and Coastal Areas and Freshwater. More information about these program areas can be found on their respective webpages. Some aspects of the state of the environments, for example biological diversity, are relevant within several of the program areas. Every program area consists of subprograms, and every subprogram can include several different investigations. These investigations are carried out according to standardized methods, consisting of measurements of multiple variables.

The environmental monitoring program is funded by its own government appropriation. Decisions on funding allocation for national or regional environmental monitoring is taken by the Swedish EPA in consultation with the Swedish Agency for Marine and Water Management. Several agencies, organizations and other groups monitor, or contribute in some way to the environmental monitoring, including national agencies, regional agencies, local agencies, universities other higher education institutions, consulting companies, research institutes, associations and private individuals.

Environmental monitoring is not restricted to collecting and analysing data. It includes storing the data long-term, performing quality assurance, and making the results available to the public. These tasks must be carried out in accordance with laws, regulations and policies on data security and accessibility.

In 2023, the Swedish Environmental Protection Agency presented a **proposal for a national strategy and action plan** regarding the Convention on Biodiversity. The proposal contains one overall objective ” Sweden has stopped and reversed the loss of biological diversity no later than the year 2030” and three strategic theme areas: 1. Reduce threats to biological diversity through conservation, restoration and planning; 2. Sustainable society and benefit sharing of biological diversity and 3. Knowledge, broad participation and joint implementation. These in turn contain proposals for 21 action areas. The action areas are developed in collaboration with authorities and actors. The report also contains an overview and assessment of how Sweden’s existing national goals and other policy instruments respond to the new framework. The proposal for a national strategy and action plan is a first step, and one of several pieces of the puzzle in the implementation of the Kunming-Montreal framework for biological diversity.



1.1 Environmental Accounts (Statistics Sweden)

The **Environmental Accounts** provide a systematic description of the relationship between the environment and the economy and can be used for analyses of various types. They function as a satellite system to the National Accounts, presenting environmentally related physical and economic information for industries, the public sector and households. They also provide information for analysing environmental and economic policies and is used for developing indicators for sustainable development.

The **analysis tool for environmental accounts data** is a tool built in Excel for analysing environmental-economic data from the environmental accounts. Using the tool, it is possible to extract both production-based and consumption-based data (data from the demand-side). In the consumption-based data, data is further divided into various components of final demand, for example household consumption or government consumption.

1.2 Organisations

In Sweden, The **Swedish Biodiversity Center** (CBM) plays an important role in promoting biodiversity and ecosystem services in society (). CBM collaborates with other agencies to conduct research, provide expert reports and information. The work includes consultancy services, government assignments, attendance at international negotiations and cooperation with a range of stakeholders such as government agencies, organizations, museums and natural resource managers. To understand use of biodiversity as a social issue, CBM highlights ecological, political, legal, social and historical aspects of biodiversity conservation.

CBM arranges every year a conference that is open for everyone. In 2023, the Diversity Conference was about the new global framework for biodiversity, which was negotiated at COP15 in Montreal in December 2022. At the conference, it was discussed how the Swedish environmental goal work should be able to contribute to a better development for biological diversity and to the global goals. The Diversity Conference involved 10 parallel workshops where the global framework's goals were presented, and there were discussions about how the implemented in the Swedish environmental goal work, policy and legislation can be enhanced.

In Sweden, another important actor is **SLU Swedish Species Information Centre**, a collaborative centre of the Swedish Univeristy of Agricultural Sciences, that accumulate, analyse and disseminate information concerning the species and habitats occurring in Sweden. Most of the work contributes to the university's program for **Environmental Monitoring and Assessment**, focusing on the long term goals of sustainable development expressed by the Parliament in, e.g., the Swedish Environmental Objectives. The Centre work with commissions from the Government and other authorities within the field of Swedish biodiversity, frequently in cooperation with various NGOs, and conduct research in the fields of ecology and conservation.

2 Examples of uptake in decision processes, regulations and/or legislation

Since 2005, the Sweden Parliament has adopted 16 environmental quality objectives (Government bill 1997/98:145). One of the objectives is "A rich plant and animal life" and states that "Biodiversity must be preserved and used in a sustainable way, for current and future generations. The species' habitats and ecosystems as well as their functions and processes must be protected. Species must be able to survive in long-term viable populations with sufficient genetic variation. People must have access to a good natural and cultural environment with rich biological diversity, as a basis for health, quality of life and welfare".

The overall aim of Swedish environmental policy is to hand over a society in which the major environmental problems facing the country have been solved. This is summed up in a 'generational goal', which describes what is to be protected and what changes need to be made in our society.

The environmental quality objectives describe the quality of the environment that Sweden wishes to achieve. For each objective there are a number of 'specifications', clarifying the state of the environment to be attained. To facilitate progress towards the generational goal and the environmental quality objectives, the Government adopts milestone targets in priority areas.

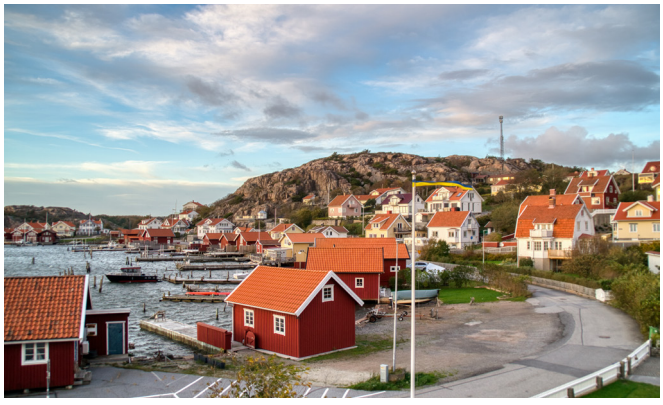
The idea of the environmental quality objectives is that they should be followed up on a regular basis, with annual reports to the Government and an in-depth evaluation once every parliamentary term. A number of government agencies are responsible for following up and evaluating specific environmental quality objectives. The Swedish Environmental Protection Agency, working with all the agencies with responsibilities within the environmental objectives system, prepares an overall report to the Government. The results of this follow-up are presented on sverigesmiljomal.se.

The in-depth evaluation of Sweden's environmental goals for year 2023 is the sixth of its kind since the Swedish Parliament (Riksdag) decided on the environmental goals in 1999. It is part of a systematic and regular follow-up of environmental policy and the state of the Swedish environment.

Regarding the assessment of ecosystem services as part of the required environmental impact assessment, the legislation for Impact Assessments does not provide clear guidelines. However, biodiversity, flora, and fauna are explicitly addressed in Swedish legislation (Environmental Code) for impact assessments. This lack of clarity results in varying approaches: some Environmental Impact Statements include a thorough description and consideration of ecosystem services, while others focus solely on biodiversity, flora, and fauna. In Sweden, a recent doctoral thesis has looked into this in order to identify ways to strengthening ecosystem services in environmental assessments (Khoshkar, 2020) .

The County Administrative Boards of the 21 Counties of Sweden have created r**egional action plans on green infrastructure**, in support of biodiversity and ecosystem services. In this context, guidelines have been published for different actors on how to contribute to the green infrastructure. Such actors include municipalities, planners, farmers, forest owners, entrepreneurs, consultants, and other.

Swedish Environmental Protection Agency (SEPA) provides guidance in environmental work for authorities and organisations in order to comply with current legislation and to reduce the negative impact on our environment. For example, in 2023, SEPA together with the National Board on Housing, Building and Planning published **guidelines on supporting municipal planning** concerning long-term sustainable habitats for people and biodiversity. Several **guidelines on supporting ecosystem services in physical planning** have been published and SEPA recently updated **guidelines on interpretation of species protection legislation**.



3 Perceived barriers and needs to enhance uptake

3.1 Barriers

- Political interests.
- Risks related to decrease of resources for example to monitor biodiversity and ecosystem services.
- Conflicting interests.
- Fragmented responsibilities.

3.2 Needs

- Knowledge sharing
- Education
- Collaborations between different authorities.
- Strengthening the role of physical planning to facilitate the integration and implementation of the uptake of biodiversity and ecosystem services.

4 On the way to transformative change

The overall conclusion of the IPBES global assessment (IPBES 2019) was that Goals for conserving and sustainably using nature and achieving sustainability cannot be met by current trajectories, and goals for 2030 and beyond, may only be achieved through transformative changes across economic, social, political and technological factors.

Transformative or transformational change refers to "a fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values" (IPBES, 2019). Simply said, doing things differently, rather than doing less or optimising the system.

A means to enhance uptake is bringing people of the quadruple helix together and exchange information and learn from each other. Another is to establish projects that can show that it works and lead to possible pathways of transformative change.

4.1 Community of practice

The Swedish REPLAN-SELINA platform builds on the co-creation meetings of the REPLAN research project and the first joint meeting that took place 5 September 2024. Participants include municipal officiants involved in planning, nature conservation and other; as well as County Administrative Board, Swedish Environmental Protection Agency, Swedish National Board of Housing, Building and Planning; Region Stockholm; consultancies, and more. We discuss a wide range on topics concerning transformative change for promoting ecosystem services and biodiversity in planning and decision making in Sweden.

4.2 Seeds of transformative change

15 projects were submitted through different channels. We only sum up a few of them.

A recently completed research project investigated Integrated Landscape Character Assessment **(ILCA)** in transport planning as a framework for cross-actor collaboration. The research is grounded on participatory observation of ongoing transport infrastructure projects. The ILCA approach has the potential to identify multifunctional solutions that support a sustainable societal transition, while also enhancing ecosystem services and biodiversity (Eckersten 2024).

A new research project, "**SAMPLAN**," has been initiated to explore practices for facilitating integrated strategic land use and transport planning. The goal is to promote transformative change that enhances various environmental aspects, such as ecosystem services and biodiversity, while strengthening sustainability considerations in planning and decision-making in Sweden. This project will engage practitioners from different authorities in workshops and focus groups e.g. the Swedish National Transport Administration, Swedish Environmental protection Agency and the Swedish National Board of Housing, Building and Planning, and different regional authorities and municipalities.

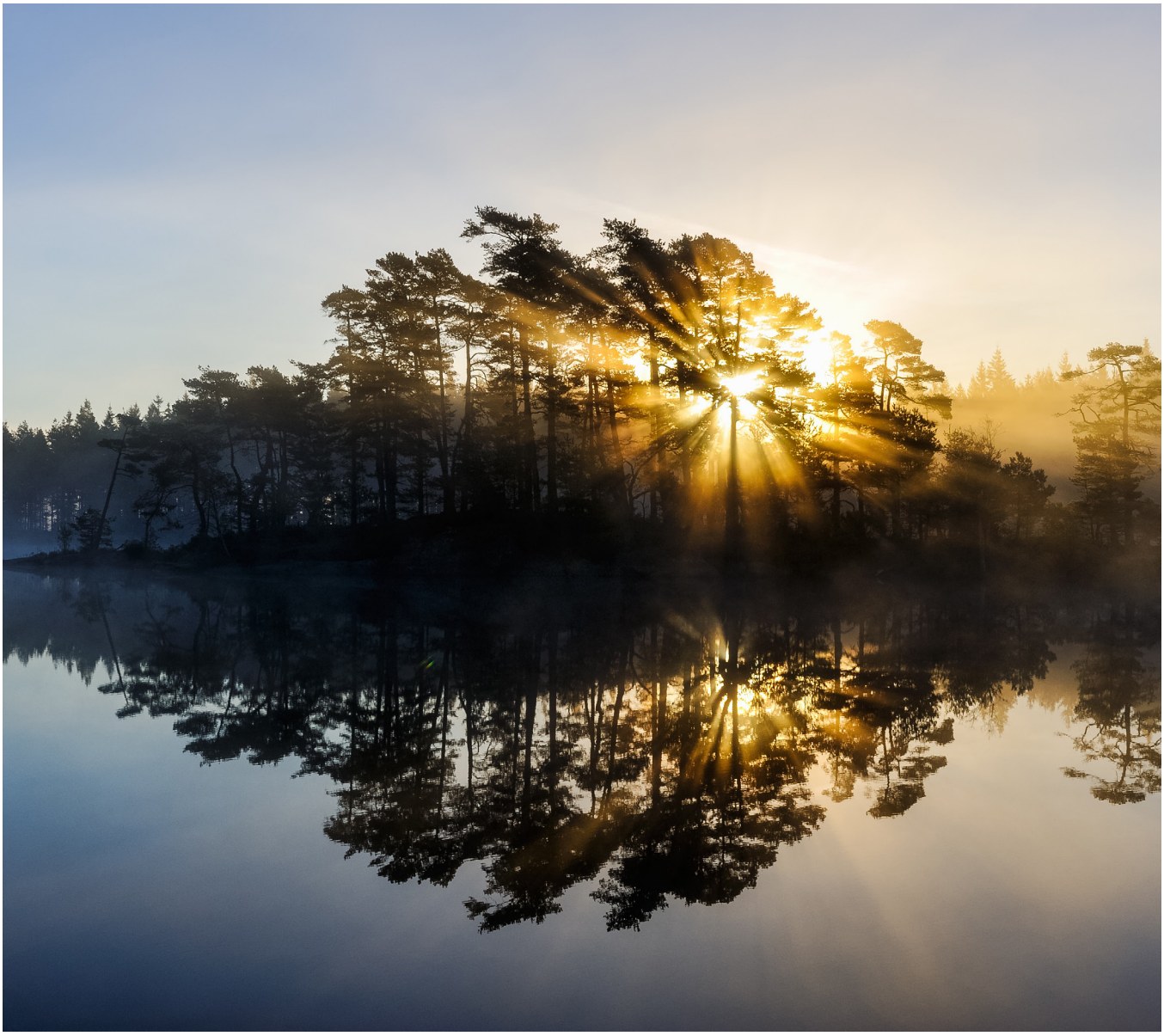
A previous research project, "**From Vision to Action: Advancing Green Qualities in Local Planning Practice**," provided valuable knowledge and support for local planning practices aimed at implementing ecosystem services in decision-making. The results are based on a case study design involving professionals from a selection of municipalities in Stockholm County (Khoshkar et al. 2020a, 2020b, Khoshkar 2020).

Study Circles - SHARED GREEN DEAL: As part of the Horizon 2020 project SHARED GREEN DEAL, there are 6 Streams. In one Stream – the Biodiversity Stream - so-called Study Circles were set up in which adult participants explore cultural values related to biodiversity, the loss of biodiversity and possible solutions in rural and urban areas.

Restored wetland Södertörn bypass: a large wetland was created as a compensation measure for a new bypass road on Södertörn, in collaboration between Huddinge municipality, the Swedish Transport Agency, and adjacent land owners providing cattle for grazing. Positive effects on biodiversity has been revealed through the monitoring.

Municipal green infrastructure – status analysis and digital tools: In Södertälje municipality, the status of the green infrastructure in the municipality is assessed and integrate into an online GIS-tool for shared access and understanding across planning levels and different expertise.

City trees database and online tool: An online tool to make trees in the urban landscape visible in urban planning and decision making (stadstrad.se). It is currently available for several cities in Sweden.



5 References

Adem Esmail, B., Cortinovis, C., Suleiman, L., Albert, C., Geneletti, D., Mörtberg, U., 2022. Greening cities through urban planning: A literature review on the uptake of concepts and methods in Stockholm. Urban Forestry & Urban Greening 72: 127584.

Eckersten, S. Advancing Sustainable Transport Systems : Strengthening environmental considerations and sustainability perspectives in Strategic Choice of Measures. Doctoral thesis, KTH Royal Institute of Technology, ISBN 978-91-8040-969-8 TRITA-ABE-DLT-2419

Khoskar, S. 2020. From Vision to Action- Advancing green qualities in local planning practice. Doctoral thesis, KTH Royal Institute of Technology, ISBN: 978-91-7873-637-9, TRITA-ABE-DLT ; 2024

Khoshkar, S., Hammer, M., Borgström, S., Dinnétz, P., Balfors, B. 2020a. Moving from vision to action-ecosystem services in the Swedish local planning context. Land Use Policy. 97.

Khoshkar, S., Hammer, M., Borgström, S., Balfors, B. 2020b. Ways forward for advancing ecosystem services in municipal planning– experience from Stockholm County. Land 9(9):296

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Project coordinator: Prof. Dr. Benjamin Burkhard, Leibniz University Hannover (LUH), Institute of Physical Geography and Landscape Ecology

burkhard@phygeo.uni-hannover.de

PROJECT PARTNERS

- Leibniz University Hannover
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