GSGF Finland: National Maintenance Model (draft)

Title: GSGF Finland: National Maintenance Model (draft)
Project: The GSGF in Finland — Integration of geospatial and statistical information in Finland (GSFI)
Grant agreement number: 101112903 - 2022-FI-GEOS-GSFI

Content

1. Introduction

This document outlines a proposal for the maintenance model of the GSGF Finland (GSFI). It describes the management of the structure and content of GSFI, the management of the GSFI roadmap work, and the roles required for these tasks. In its current form, the document is intended as a basis for discussion and collaboration, and its implementation will require further refinement of the model and strengthening the resources and responsibilities for guidance and coordination.

This GSFI national maintenance model aims to ensure that the operational models and governance practices for the maintenance and development of GSFI are clearly defined, implemented, and maintained. The maintenance model also aims to achieve widespread utilisation of GSFI components throughout their lifecycle. Changes to GSFI and its components are processed and approved as described in the maintenance model.

The functionality and scope of the maintenance model should be regularly evaluated and updated.

The roles identified in the maintenance model for national steering and coordination of collaboration within GSFI require separate resourcing. Thus, the responsible entities for these roles have not yet been named at the time of writing this proposal. Therefore, this maintenance model as well as, GSFI is handed over to the Network for Integration of Statistics and Geospatial Information and its coordination group as well as, to the strategic steering group of the three participating organisations, i.e. Statistics Finland, the National Land Survey of Finland, and the Finnish Environment Institute.

GSGF Finland (GSFI) including this maintenance model was developed in the project "The GSGF in Finland — Integration of geospatial and statistical information in Finland (GSFI)" funded by the EU.

2. GSGF Finland (GSFI)

GSGF Finland (GSFI) supports the goals and transformation journey of integrating statistical and geospatial information in Finland. GSFI is built around a vision that outlines the direction of change, descriptions of collaboration structures and working models, various tools, and supporting documents in the library (Figure 1).

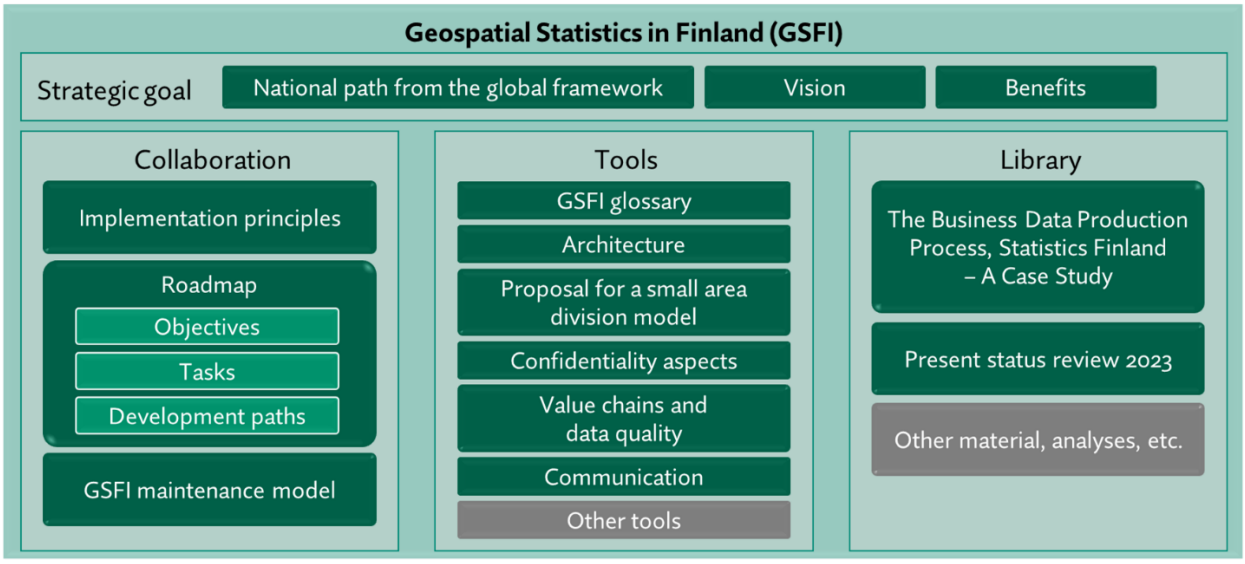

Figure 1. The structure of the Geospatial Statistics in Finland (GSGF Finland, GSFI). The tools and library materials are expected to be supplemented as the work progresses (the grey boxes).

The GSFI roadmap outlines the collective goals and practical actions. It is based on an understanding of the current state and includes long-term objectives that realise the GSFI vision, along with the tasks leading towards these objectives. The maintenance model suggests that managing these roadmap elements should be part of the content management. Additionally, the roadmap includes development paths of various stakeholders, each with its own management process. Managing the links between the objectives, tasks, and the development paths is defined as the management of roadmap implementation.

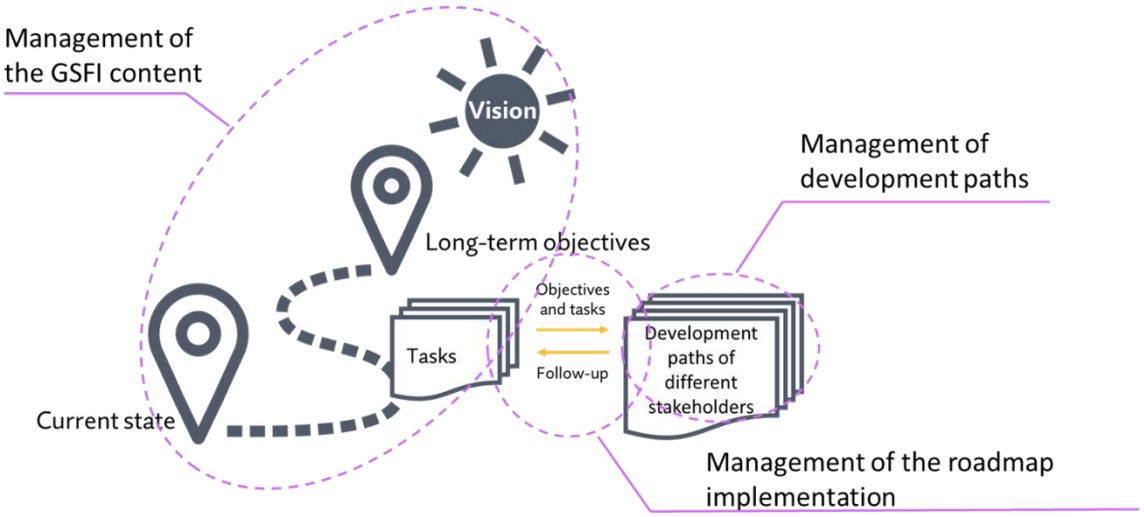

Figure 2. Roadmap and its management elements.

3. Management in ecosystemic development

The construction of this GSFI maintenance model aims for ecosystemic development, where

- achieving the desired change relies on extensive collaboration between different stakeholders.
- each stakeholder brings their own expertise and perspective, which strengthens complex problem solving and innovation, and
- although the activities are coordinated, each stakeholder retains their independence and can focus on their core competencies.

Figure 3 presents the prerequisites for effective ecosystemic operations. These aspects must be considered in the design of the maintenance model. Firstly, it is important to regularly ensure that the stakeholders' own goals align with the ecosystem's objectives. When stakeholders share a common vision and clear goals that guide activities and decision-making, it helps ensure that all parties work towards the same aim. Understanding that value and long-term benefits are created together strengthens commitment to joint efforts.

Ecosystemic operations and development are based on trust between stakeholders. Trust is built and maintained through open communication, information sharing, and ensuring a mutually agreed level of transparency. Decision-making and governance processes must also be visible to all parties, and stakeholders must be able to influence GSFI, its maintenance, and development.

A shared situational awareness and linking different stakeholders to the bigger picture support both transparency and collaborative planning. Clear, up-to-date roles and responsibilities help stakeholders

understand what is expected of them, how to avoid overlaps, and how they can best contribute to common goals. Sometimes, new understanding is all that's needed: "Hey, we're already doing this!"

Ecosystemic development and networks also require support and coordination to function effectively. It is essential to ensure that all relevant stakeholders are involved and to actively seek ways and opportunities to promote collaboration and information exchange among experts from different fields. Investing in support and coordination of joint activities ensures the long-term sustainability of the ecosystem and fosters confidence in the continuity of efforts. The ecosystem must also be able to adapt and respond to changes. The expectation is that stakeholders can adjust their activities as needed, allowing for flexible responses to evolving needs and conditions.

It is also important to develop mechanisms that provide a knowledge base for decision-making, support conflict resolution, and align interests. Time should be allocated for systematically building responsibilities and discussing how each party views their own and others' responsibilities within the ecosystem. In addition to coordinating entities, stakeholders also have a mutually supportive role in ecosystem work.

All this requires continuously developing flexible tools, guidelines, structures, and processes. And let's not forget the importance of building community by organising joint events and celebrating achievements.

Figure 3. Building effective ecosystem operations.

An ecosystem-like operating environment is thus based on cooperation, trust, and openness. It is important to consider the above presented aspects in building the maintenance model and designing resources, mandates and operating principles. A hierarchical maintenance model, which relies on strong use of mandates, may conflict with these principles and thereby weaken the functioning of the ecosystem.

4. Identified roles

In an ecosystemic change process, the need for clear definition of roles and responsibilities is emphasised. This maintenance model focuses on managing the whole GSFI and building and maintaining a shared situational awareness. The starting point for defining roles is that there is no strong mandate to centrally direct the participation of different actors in the change; rather, the participation of different actors relies on:

1. Recognising the significance of integrating statistics and geospatial information across administrative boundaries in the society, guided by the vision.
2. A common target state, underpinned by a globally accepted framework in the geospatial and statistical fields.
3. A shared situational awareness and progress paced by the development paths defined by independent actors on the roadmap.

Managing the whole, building and maintaining a shared situational awareness, and monitoring and coordinating progress require new national coordination and steering roles. The actors who will take on these roles must be provided with sufficient resources necessary for their tasks. However, the resources required in this operating model are likely to be smaller than those in a mandate-based alternative, which would require a broader structure covering different administrative sectors and likely more bureaucracy. It is essential that each actor recognises their own roles and responsibilities and receives their mandate to participate in the work from their own governance.

Transparency of operations is a fundamental requirement in such a model. Transparency ensures that all parties understand the basis of decision-making and can trust that the operations are open and fair. Additionally, clear processes that ensure all parties have the opportunity to influence and be heard are essential. This approach enables flexible and dynamic collaboration, where each actor can focus on their core competencies while advancing the common goal. When roles and responsibilities are clearly defined and operations are transparent, organisations can operate independently yet in a coordinated manner, leading to more efficient and purposeful operations.

The following roles have been identified in the implementation and management of GSFI:

- Member of the national GSFI steering
- Chair/leader of the national GSFI steering
- Member of GSFI cooperation coordination
- Chair/leader of GSFI cooperation coordination
- Owner of the actor-specific development path
- Proposer of the change proposal
- Preparer of the change proposal
- Presenter of the change proposal
- Structure maintainer
- Content maintainer
- Coordinator of development paths
- Roadmap manager
- Communication officer
- Web page maintainer
- Financial expert
- Legislative expert

5. Stakeholders

National stakeholders in GSFI management include:

- The National council for geographic information (PATINE): A national coordination body responsible for monitoring and evaluating the development of the national geospatial data infrastructure and coordinating the implementation of the INSPIRE directive.
- The National Network for the Integration of Statistics and Geospatial Information in Finland: A key forum for GSFI implementation, solving emerging problems, serving as a unique hub for diverse and extensive expertise, and providing a place for collaboration and information exchange. Membership in the network is voluntary and personal, not organisational.
- The Coordination group of the National Network for the Integration of Statistics and Geospatial Information in Finland: Plans and coordinates the network's activities and supports the work of target groups. The coordination group includes members from the National Land Survey of Finland, Statistics Finland, and the Finnish Environment Institute. Members work alongside their regular duties with limited resources.
- GeoForum Finland: A network that brings together geospatial data actors in Finland. It promotes cooperation among geospatial data experts and organisations using geospatial data, including businesses, public administration, and educational and research institutions. Through an active network, the association represents the spatial data sector, increases understanding of the importance of spatial data and participates in the preparation of development projects and societal decisions.
- The Municipal forum for geospatial data (PAKU): Includes over 270 municipal representatives across Finland. In PAKU's activities, municipalities and state administration exchange information on the development of public administration geospatial data activities and can provide feedback to support development work.
- The Coordination group of PAKU: Guides the activities of the municipal forum. It is an expert body that brings municipal sector expertise to current developing entities. The coordination group includes ten municipal representatives and nine representatives from state administration organisations, such as the Finnish Environment Institute, the Digital and Population Data Services Agency, and Statistics Finland.
- The Oskari Network: A community developing the open-source Oskari software, which supports the interoperability of geospatial data. The community is coordinated by the National Land Survey of Finland.
- ProGIS ry: Promotes the use of geographic information systems and geospatial data in various fields, brings together geospatial data professionals, and disseminates information. The association is impartial and considers the diverse needs of the geospatial data sector, both from the perspective of public administration and businesses.

6. Implementation of the maintenance model

A maintenance model can be defined as a structure that guides and coordinates the implementation of GSFI, as well as maintains and develops the elements included in GSFI. The goal is for the completed maintenance model to include rules, processes, and practices that ensure operations are efficient and aligned with objectives. The maintenance model would also define how decision-making occurs, how

resources and responsibilities are distributed, and how different actors collaborate to achieve common goals. The examination of governance tools and especially processes is still quite limited in this proposal compared to the ecosystem principles discussed in Chapter 3. However, implementation can proceed step by step, experimenting and gradually expanding activities.

The management of ecosystem operations can be thought of as a service, which can facilitate the understanding and planning of the maintenance model. Service providers maintain, facilitate, and develop activities, as well as offer tools and methods to ensure transparency and openness for all parties involved. They also provide advice and support to actors on governance-related issues. The service provider would also monitor activities and suggest improvements to both the maintenance model and collaborative work.

The advantages of the service perspective could include resource savings, as management would be handled centrally by a limited number of people. The benefits may also include comprehensive engaging of different actors and maintaining a shared vision centrally. Actors would benefit from the expertise of the service provider and could focus on their core competencies. However, it is important to note that such a model requires strong trust in the service provider and clear descriptions of the service's content and scope. Additionally, ecosystem actors must still be actively involved in governance processes to ensure that the service meets their needs and objectives.

GSFI management can also be procured as a service from an external entity. The advantage of this is an independent perspective on coordination, free from any single organisation. This allows for purely GSFI-based coordination, monitoring, and communication. The service should also include support and advice for resolving various GSFI-related issues. For example, the OSKARI open-source map solution has been developed using a co-development method, and the community's work has been led by a consultant-driven coordinator for several years. The experiences have been positive. The model has been implemented so that 5-6 organisations participate with a fixed annual fee covering development coordination. Additionally, organisations close to the development have supported co-development with their experts' work contributions for handling responsibilities or participating in co-development when needed.

The tasks of the coordinator responsible for management can include, for example, the following identified tasks: coordinating GSFI cooperation (coordinating the National Network for the Integration of Statistics and Geospatial Information in Finland), maintaining the GSFI roadmap: defining and planning joint actions and measures with different actors, maintaining the GSFI structure, and supporting and coordinating the creation of actor-specific development paths.

7. Tools

Efficiency and transparency of work can be increased by using common tools and platforms where everyone can track progress and decisions made, participate in discussions, and find available materials. The storage and discoverability of GSFI, as well as the documentation of its management, have been addressed through the GSFI channel established in the Teams team of the National Network for the Integration of Statistics and Geospatial Information in Finland, and the GSFI web page. The channel contains the GSFI documents mainly in PDF format, as well as materials proposed for the GSFI and meeting materials. The folder structure follows the GSFI structure. Additionally, the channel includes folders: "Proposed Material" and "Meetings". All network members have access to the GSFI channel. Membership in the network is open to anyone interested in the topic.

Additionally, an identical GSFI-compliant folder structure has been created in the network's team on a private channel managed by the network's coordination group, containing the corresponding materials in editable version formats. Only the coordination group has access to this channel. The purpose of this solution is to ensure the preservation and version control of the materials. This is a temporary solution until the responsibilities for coordination are decided.

7.1. Document management

Management of a new document:

1. Upload the document in PDF format to the appropriate folder in the GSFI channel according to the defined structure.
2. Upload the document in its original, editable file format to the corresponding folder in the protected folder.
3. If the document is to be shared on the web page, also upload it to the web page in PDF format.

Management of an updated document:

1. Make edits primarily to the original, editable document. Version control relies on Teams' own version control. Thus, edits should be made to the original document. If this is not possible, the old version must be retained and clearly marked as no longer maintained.
2. Record the details of the new version in the document's version history table.
3. Create a PDF of the new version, which replaces the previous PDF version in the GSFI channel.
4. If the document is also on the web page, replace the version on the web page with the new version and add the new version's date in parentheses after the name.

Proposing the addition of a new document to GSFI:

1. Upload the document to the "Proposed Material" folder in an editable file format.
2. Once a decision on the document has been made, handle it as the management of a new document and remove it from the "Proposed Material" folder, or if the decision is negative, move the document to the "Documents with Negative Decisions" folder.

7.2. Documenting decisions

Careful documentation of all decisions and actions allows anyone to later verify how and why a particular solution was reached. It is proposed that decision memos are made as OneNote notes in the GSFI channel, and meeting materials are compiled in the "Meetings" folder in the GSFI channel's files.

7.3. Communication

All decisions made and changes within GSFI are communicated with justifications in the Announcements field of the GSFI channel. Additionally, the communication officer, together with other maintenance model representatives, will develop a communication strategy. Regular and open communication between all parties is crucial. This can include joint meetings, reports, and bulletins that inform about the progress of activities and decision-making. The aim of communication is also to expand the utilisation of GSFI elements throughout their entire lifecycle.

7.4. Web page

The GSFI web page[1] presents GSFI and its key documents and directs users to the web page of network and other materials. A designated person is responsible for maintaining the web page. The contact information of those responsible for GSFI in various roles should be available on the GSFI web page.

8. Maintenance of the GSFI entity

This maintenance model proposal has so far identified the structure and content management, roadmap implementation management, and development path management.

8.1. Structure and content management

This chapter addresses the management of the structure and content of GSFI. The materials included in GSFI have been compiled and grouped according to the GSFI structure. The material can be in various forms, such as text documents, tables, and images. Existing materials in the GSFI can be updated, modified, and deleted. Changes can also include additions or entirely new elements to the structure or content.

Table 1 outlines the tasks when there are needs for changes or additions related to the structure or content of GSFI.

Changes decided for the structure must be updated in the following materials:

- This maintenance model document
- GSGF Finland (GSFI) document
- Structural descriptions of the communication material in different language versions
- GSFI web page
- Directory structure of the GSFI channel and, if necessary, the location of documents

Changes related to content are made to the documents as described in Chapter 7.1 Document Management.

[1] GSFI and Eurostat, 2024. Geospatial statistics in Finland (GSFI). A web page. In Finnish. EU. 101112903 - 2022-FI-GEOS-GSFI. A link to the GSFI web page: stat.fi/GSFI.

Table 1. Tasks and roles for handling changes in the GSFI structure or content using the RACI table. The table must be supplemented when implementing the management model.

Task	Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
Making a change proposal	National network member			
Receiving a proposal for amendment or addition				
Preparation of a proposal for amendment or addition				
Preparation of a proposal for amendment or addition				Change proposer National network Web page administrator
Making changes to the structure and/or content / Required editing and publishing of new structure or material in GSFI				

8.2. Roadmap implementation management

The implementation of GSFI is based on the GSFI roadmap, which in ecosystemic co-development helps ensure that everyone has the same understanding about the implementation and that the implementation of GSFI progresses as planned. Managing the implementation of the roadmap is an ongoing process. Engaging and supporting stakeholders, as well as maintaining the overall picture built by different development paths, are extensive and demanding tasks that need to be prioritised. In developing and implementing the GSFI roadmap, it is also important to actively involve new actors in the work and to monitor and support the progress of the work as a whole.

One challenge in managing the roadmap is that practical work is decentralised. Different actors contribute their described inputs through their development paths, and GSFI actions are thus realised piece by piece (Figure 4). Therefore, the coordination and change management of the roadmap should be informative in nature, not mandate-based, ensuring that ecosystem actors are kept up to date.

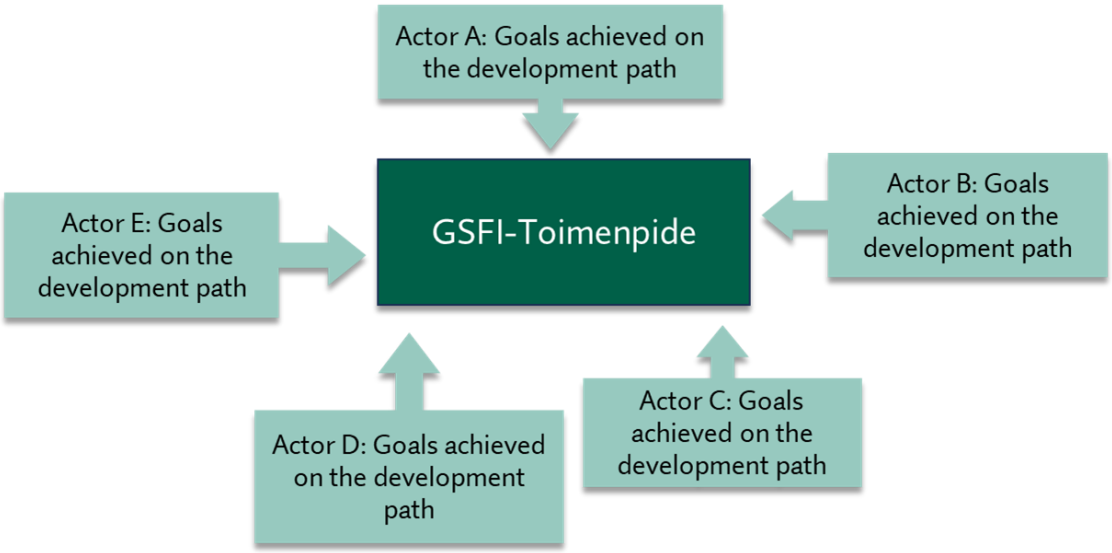

Figure 4. Different actors' development paths have goals, each of which implements a GSFI action. The action is realized step by step as the goals of different actors are achieved. In managing the roadmap work, it is important to monitor and support the progress of the work as a whole, so that organisations can recognise their responsibilities on the roadmap and contribute their role and expertise to the work.

Roadmap work should also be continuously evaluated and improved. Gaps in implementation can also be filled by utilising various funding opportunities.

Table 2. Tasks and roles for managing the implementation of the GSFI roadmap using the RACI table. The table should be supplemented when implementing the management model.

Task	Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
Stakeholder work: implementation status report on development paths and support and commitment of actors				
Creating snapshot of the situation and identifying critical gaps in development				
Informative coordination and change management				
Roadmap evaluation, reporting and continuous improvement				
Steering				
Maintenance and development of working platforms				
Mapping and support of funding opportunities				
Enactment into national law				

8.3. Development path management

Ecosystem actors review the objectives and tasks of the roadmap both individually and together with other actors, identifying elements they are already working on or could take responsibility for. The identified elements are articulated using the OKR model. A more detailed description of the model can be found in the GSFI roadmap document (GSFI and Eurostat, 2024).

Managing the overall roadmap ties the development paths into a whole and provides an overview of the progress. By seeing how their own work links to the whole, stakeholders can be better considered in the work, potentially achieving significant benefits with minimal effort.

Table 3. Table 1. Tasks and roles for development path management using the RACI table. The table must be supplemented when implementing the management model.

Task	Responsible (R)	Accountable (A)	Consulted (C)	Informed (I)
Identifying ongoing and new development opportunities on the roadmap				
Describing the development path using the OKR model				
Implementation of the development path				
Monitoring and responding to the overall picture				
Participation in co-development events				

9. Continuous development of the maintenance model

The effectiveness of the GSFI maintenance model should be evaluated and developed by regularly reviewing activities and, if necessary, planning changes to the maintenance model (Figure 5). After this, the planned changes are implemented, which includes consolidating successful changes, eliminating ineffective practices, and initiating new actions. Finally, during the actual implementation phase, the changes are tested, and lessons are gathered for the next update cycle. If needed, an independent evaluation by a third party can provide an objective view of the activities and their transparency, as well as offer recommendations for improvement.

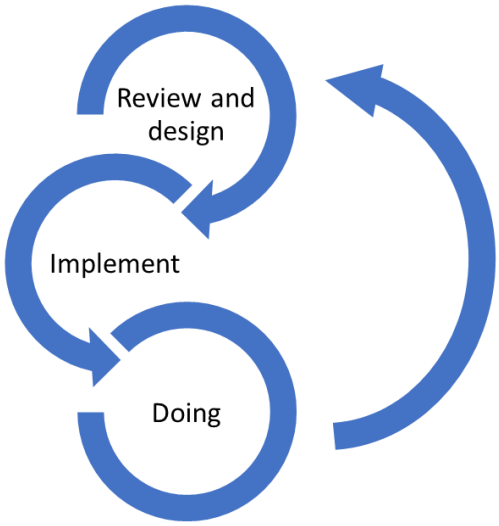

Figure 5. The functionality of the maintenance model must be assessed and developed regularly.

It is also necessary to consider how to synchronize the cycles of the maintenance model with the typical annual rhythm of organisations. The planning of ecosystem activities could operate on a different schedule from organisational planning, so that inputs from ecosystem planning could feed into organisational planning, and conversely, the situation could be reassessed once organisations have completed their own planning.

10. References

GSFI and Eurostat, 2024a. GSFI development roadmap (draft). EU. 101112903 - 2022-FI-GEOS-GSFI.