RESEARCH PROTOCOL FOR THE
GOVERNING GREEN TRANSITIONS (GOGREEN)
RESEARCH PROJECT (2022–2026)

Research Protocol for the Governing the Green Transition (GOGREEN) Research Project (2022-2026)

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1. Introduction

The Governing Green Transitions (GOGREEN) project offers a unique opportunity for independent research groups to collaborate on a cumulative learning approach. Based on a shared research agenda and framework, this collaborative endeavor constitutes an unprecedented effort to rigorously examine co-creation projects and their capacity to promote green transition. The overarching aim is to produce rigorous, high-quality research through in-depth case studies, and, subsequently, the aggregation of these multi-site case studies to conduct a qualitative comparative analysis (QCA) that identifies the criteria for successfully co-created green transitions.

To this end, this research protocol provides a stepwise guideline for the GOGREEN project partners to carry out the data collection, analysis, and scoring required to prepare the subsequent case study report. The research protocol has been drafted to be as instructive and yet parsimonious as possible, and we anticipate that some questions might remain unanswered. If you encounter any remaining ambiguities or unanswered questions in the research protocol, the simplest explanation is that it is a lapse of judgment on our side or something that has escaped our attention. Please get in contact so that we can clarify any remaining issues as early as possible (see **Appendix 6.14** for contact details). Further along these lines, **we will also be organizing Q&A sessions every second month for project members to jointly clarify arising problems and questions**. We recommend that you carefully study the research protocol in its entirety before proceeding with the data collection process.

1.1 The project mission and logic of inquiry

GOGREEN seeks to understand how co-creation in partnerships and networks can help to develop innovative green solutions and achieve the UN Sustainable Development Goals (SDGs) to meet the 2030 deadline. As such, we take inspiration from the fact that Goal 17, "Partnerships for the goals," urges public and private actors to collaborate; exchanging and pooling their different ideas and resources in the design and implementation of new green solutions. The project pays special attention to how different forms of governance factors (GFs), such as public policy, institutional design, leadership, financing, and so on, can support the co-creation of innovative solutions in different parts of the world. New knowledge about how to govern the co-creation of the green transition will help change-makers around the world to reap the fruits of collaborative partnerships and networks.

More concretely, GOGREEN aims to identify the relevant GFs that provide the necessary and sufficient conditions for promoting the co-creation of green solutions. The overarching ambition is to uncover concrete, actionable insights into how government actors, local communities, and other private stakeholders engaged in collaboration can contribute to solving the wide range of environmental challenges currently facing the world. Because these environmental challenges are so multifaceted and ideas and resources so widely distributed, it is essential to collectively mobilize actors from state, markets, and civil society to solve these complex and pressing problems. GOGREEN aims to critically reflect on the GFs that are conditioning co-creation processes (collaborative problem-solving processes), which in turn produce successful green transitions based on a systematic examination of various real-world projects in numerous carefully crafted multi-site case studies (see **Figure 1**). We draw a distinction between *collaborative problem-solving processes supported by GFs* and *co-created green transitions* to avoid conflating the co-creation processes with their

outcomes, as it might otherwise give the mistaken assumption that the measurement of the dependent and independent variable forms a tautological relationship.

Figure 1: The basic relationship between GFs and co-created green transitions
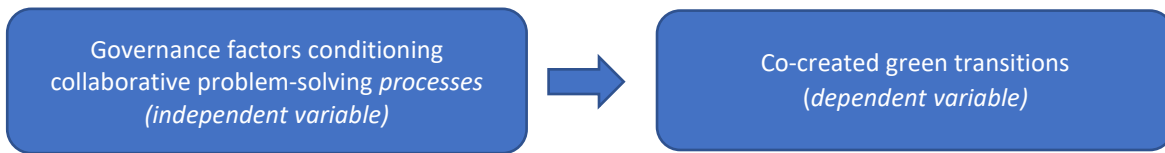
GOGREEN hypothesizes that 16 GFs (see Table 1) are particularly important for collaborative problem-solving and its ability to produce successfully co-created green transitions. GOGREEN therefore aims to investigate how and to what extent each of these GFs support collaborative problem-solving processes, and, in turn, influence the capacity of these problem-solving processes to produce successfully co-created green transitions. To this end, the GFs should be understood as the independent variable of the project, while the dependent variable is the successfully co-created green transitions.

1.2 Research approach

GOGREEN will cast light on the relationship between GFs and co-created green transitions in two different ways. **First**, it will investigate this relationship through a **qualitative comparative analysis (QCA)** method, which seeks to identify the alternative configurations of conditions (independent variables in the form of GFs) that produce a given outcome (dependent variable in the form of co-created sustainable outcomes). QCA is a set-theoretical method formulated by Charles Ragin,[1] which integrates a case-oriented (small to middle number of cases) with a variable-oriented approach to data analysis. Whereas case-oriented studies usually cannot be generalized due to many context-specific factors, variable-based studies such as quantitative methods do not provide much information about individual cases and how things work out due to their focus on the net effects of variables. QCA bridges these respective gaps by combining the logic of inquiry of both methods. Individual case studies are conducted to produce detailed in-case descriptions based on which membership scores are assigned through a uniform calibration (scoring) process. For each case study, we can thus evaluate if each variable is either present or absent. By comparing the cases with each other, we can algorithmically determine which variables are in constant conjunction to produce a specific outcome.

On the one hand, the GFs will be measured based on different data sources that allow membership scores to be triangulated based on a lexical scale construction (see Section 3). On the other hand, the successful co-creation of green solutions (the dependent variable) will be measured through a composite score that considers (a) the degree to which creative problem-solving was stimulated to foster new and better solutions; (b) the degree to which innovative solutions were designed (output); and c) the degree to which the solutions will meet or have met sustainability-related goals (outcome).

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[1] See C. Ragin (1987), The comparative method: moving beyond qualitative and quantitative strategies. In *The Comparative Method* (Issue Tilly). University of California Press.

Second, GOGREEN will also seek to uncover the relationship between GFs and co-created green transitions through **smaller scale comparisons of in-depth case studies**. The wide range of cases from different contexts in GOGREEN provides us with unique opportunity to compare cases from both rather similar and completely different parts of the world. Thus, where the aim of the QCA is to provide more generalizable findings based on a comparison of all the GOGREEN cases, the smaller scale comparative case studies will allow us to conduct more in-depth, qualitative comparisons between fewer cases and to include more contextual data. Moreover, as we investigate GFs at the structural, strategic, and tactical-operational levels, the smaller scale comparative studies offer rich opportunity to zoom in on particular GFs and explore how they unfold in and have an impact on different settings. GOGREEN will produce a goldmine of rich qualitative data to which all of the partners will have access.

Table 1: Summary of the 16 governance factors

Structural GFs
1. Perceived importance of biosphere conditions
2. Supportive legislation, programs, and formal goals
3. Relative openness of public governance paradigms
4. Formal institutional channels for citizen participation and community mobilization
5. Mechanism for ensuring top-down government and bottom-up social accountability
Strategic GFs
6. Strategic agenda-setting by means of translation
7. Construction of narratives about successful multi-actor collaboration
8. Building or harnessing institutional platforms and arenas
9. Provision of access to blended financing
10. The capacity to leverage support from authorities to enable local collaboration
Tactical and operational GFs
11. Inclusion and empowerment of relevant and affected actors
12. Clarification of interdependence vis-à-vis common problem and joint vision
13. Trust-building and conflict mediation
14. Use of experimental tools for innovation
15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation)
16. Exercise of facilitative leadership

Note: See Appendix 6.2 for a full overview of each GF

GOGREEN is testing the impact of 16 GFs (variables/conditions), from which we will theoretically deduce which GFs are necessary and/or sufficient to support the co-creation of a successful green transition (see **Table 1**). Because the QCA and smaller-scale qualitative analysis will be based on a diversified set of cases from around the world, it is a prerequisite that we maintain a certain level of quality, similarity, and commensurability to ensure that the calibration (scoring) can be executed reliably for performing the QCA and to ensure reliability in smaller-scale comparative case studies. To this end, **this research protocol provides a step-by-step guide for how GOGREEN researchers must carry out and report their case studies**.

All GOGREEN cases have been selected based on the definition of **co-created green transitions**; that is, co-creation processes focusing on bringing about green transitions in and through collaborative innovation processes involving public, private, and civic actors, including citizens, community leaders, or civil society organizations (**see Appendix 6.1** for the GOGREEN case selection criteria). The **case studies will be conducted between January and October 2023**, during which time we will host several workshops on how to conduct

the data collection and draft the case report (see **Appendix 6.15** for a timeline). Once **the case reports have been submitted by the end of October 2023**, the GOGREEN researchers at Roskilde University will review them and report back if any changes or amendments need to be made. After the case reports are finalized, the opportunity to collaborate across cases between project members becomes possible. Finally, we will conduct the QCA throughout the remaining months of 2023 and the first months of 2024 and draft a final report on the findings.

Co-Creation for Sustainability (2022) co-authored by Christopher Ansell, Eva Sørensen, and Jacob Torfing, serves as the theoretical backbone for the research project and the accompanying 16 GFs that will be tested. The book is available as a Golden Open Access book and can be retrieved here. We strongly encourage project partners to consult the book and the GOGREEN theoretical framework if they want further clarification on the GFs studied in the project.

2. Planning the case study

GOGREEN is premised on an unprecedented effort to advance cumulative learning, as we bring together more than 20 independent research teams through a uniform research protocol that will be applied in multi-site case studies.[2] The GOGREEN research collaboration is inspired by the belief that all project partners will mutually benefit from participating in joint research objectives. The idea is to support each other, come out strongly with jointly published results, and form a close global network of researchers with a shared focus on unlocking the potential of co-creation as a tool for promoting local green transitions. Before data collection, the GOGREEN researchers at Roskilde University and UC Berkeley have crafted the theoretical framework for the study and a research protocol describing how to conduct a GOGREEN case study in detail (this document). The GOGREEN project partners will all have a contact person among the GOGREEN researchers at Roskilde University to spar with during the case study process. Once we have completed all the case studies and written the case reports, we will collaborate on jointly written articles with case comparisons in edited volumes, journals, and special issues. We will also arrange GOGREEN conferences and online meetings where we present and discuss results with local researchers and practitioners.

Table 2: Approximation of the hours of work required to execute a case study

Task	Hours
Searching for potential cases and establishing cooperation	15
Document retrieval and analysis	25
10–15 interviews, including planning, execution, and transcription	150
Observation of and participation in meetings	10
Administering the survey	10
Data analysis and writing of case report	40
Total	250

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[2] For an inspirational project involving a smaller scale of collaborative research, see Dunning et al. (2022), Voter information campaigns and political accountability: cumulative findings from a preregistered meta-analysis of coordinated trials. *Science Advances* 5(7), eaaw2612.

We estimate that each case study will take approximately 250 hours, which can be distributed among the members of each local research team (see **Table 2**). In other words, you should expect to allocate an average of 25 hours per month to GOGREEN, although the work will most likely be distributed unevenly over the ten months. To this end, some project partners have received modest funding grants to facilitate the case studies while others bring their own funding. For those who have received funding from the original research grant, GOGREEN will not be able provide additional funding if more hours are invested.

Before starting the data collection, make sure that you have a clear focus on a particular problem, process, and innovation. Some cases are large programs with many projects and subprojects. Hence, it is important to zero in on a specific local process in which a relatively clearly defined group of actors addresses a particular problem or goal and collaborate to foster a solution with a measurable outcome. For example, a group of local actors within a broader initiative aiming to enhance sustainable farming may decide to collaborate to find a way to electrify the trucks and machinery used on local farms.

Figure 2: The five phases of data collection

1: Retrospective analysis	• Review of the background, initiation, and current state of the co-creation process and analysis of the structural governance factors (1–5). If need be, parts of this analysis can be based on the work of local assistants combined with desktop studies (Section 4.2)
2: Analysis of the innovation phase	• Focus on the collaborative interaction of the actors and analysis of the strategic and tactical-operational governance factors (6–15) and collect complementary data on the structural governance factors (1–5). This analysis will form the main part of the case analysis (Sections 4.3 and 4.4).
3: Collecting data for the process, outputs, and outcomes	• Focus on how the process is evaluated and which outputs and outcomes are generated. This analysis should be carried out at the end of the data collection phase (Section 4.5).
4: Analyzing and converting the data into QCA scores	• The data collected in phases 1–3 are all used as part of a triangulation process to score each of the fifteen governance factors and to measure the degree of success in co-creating green solution (Section 5).
5: Writing up the case report	• Following the analysis and conversion of data, a case report will be drafted based on a premade template (Appendices 7.8 and 7.9).

We expect the **data collection and analysis to unfold in five cumulative phases** (see **Figure 2**). To avoid overwhelming the case and our informants by trying to collect all the data at once and to ensure that we digest our findings as we move along, we will break up the data collection and data analysis processes in smaller parts that can be accomplished sequentially, one after the other.

Ideally, we will all work in parallel on these five phases and can exchange information on an ongoing basis about the challenges and opportunities during each data collection phase. For this reason, we have also scheduled a Q&A meeting every second month (see **Appendix 6.15**), ensuring that everyone is up to speed with the planned schedule. However, we anticipate that not all project partners can execute the steps chronologically, as the co-creation processes under scrutiny may evolve in different tempi, for which reason bilateral communication might at times be more relevant. While some project partners might find that their data collection goes smoothly, without any hiccups, we still recommend they attend the Q&A sessions to share their experiences to encourage the cross-fertilization of best practices.

3. Data collection procedure

This section provides an overview of the GOGREEN data collection procedure. The goal is to ensure quality and consistency in the collected data across contexts and cases. We suggest that **an iterative strategy** is the most prudent for the **data collection process.** What makes qualitative research qualify as "systematic" is that hypotheses and conclusions are revised against successive rounds of data collection that make us wiser and create a more nuanced picture of what is going on in the case. If new data yields conflicting accounts (negative evidence) to the initial conclusions drawn about a GF conducted through interview data, such ambiguities can be resolved by collecting new data. Put simply, data collection should be conducted until a consistent conclusion can be drawn from the different sources of data. In practice, this suggests that an initial round of data collection – during which several documents will be collected, and interviews will be conducted – will be evaluated against the scoring scheme. Depending on which variables have missing data or yield conflicting evidence, subsequent rounds of data collection can be tailored to resolve these gaps. To this end, we have provided in **Appendix 6.9** a checklist that allows you keep track of the progress of the data collection process.

Note also that the research protocol will ensure that the data required to execute the qualitative comparative analysis (QCA) is retrieved from the data collection process. Project members are, of course, free to use the data collection opportunity to retrieve additional data if they are interested in conducting further analyses on their respective case studies outside the scope of the GOGREEN project. Based on the networking workshops conducted in December and January and the description of the cases, we anticipate that project partners can reach out to each other to discuss the possibility of conducting in-depth comparative case studies in the form of research collaborations, which can inform further data collection.

3.1 Legality and declaration of consent

As a research institution, Roskilde University is subject to strict data protection legislation. This legislation consists of the European Union General Data Protection Regulation together with the Danish Data Protection Act. To comply with this legislation in GOGREEN, we have developed **a Declaration of Consent to be read**

and signed by all informants. Informants are all the actors who participate in interviews, observations, surveys, etc. for the GOGREEN project. This Declaration of Consent provides information about what data is used in our project, how and how long the data is being kept, and the rights of the informants under the data protection legislation. Its legal basis is the General Data Protection Regulation article 6, section 1, subsection a, in combination with General Data Protection Regulation article 9, section 2, subsection a – consent.[3] We have stated that we will keep the data for 10 years after the GOGREEN project ends. The reason for doing so is that the Danish statute of limitations for legal cases regarding scientific misconduct is 10 years, so to be able to accommodate any requests regarding possible scientific misconduct, it is Roskilde University's policy to keep data from all research projects for a 10-year period.

The sample of the Roskilde University Declaration of Consent can be found in **Appendix 6.12** and will also be available as a single file in the GOGREEN collaboration space on Teams and sent out as to GOGREEN project partners by e-mail.

3.1.1 Discretion and anonymity concerns

It is important that we **do not promise complete anonymity** to GOGREEN project informants, as anonymity in the legal sense means that we would have to strip the case reports of too many details to ensure that no statements could be traced back to the informants in any way. However, to comply with the EU General Data Protection Regulation, we do not use informants' names; instead, we advise you to **use pseudonyms for informants in the case reports.** These pseudonyms can be based on their professional titles or roles in the project (e.g., project manager, citizen, public servant). Although we do not use the informants' names, using the names of their organizations is acceptable (e.g., Marin County, EBO Consult) in the case reports.

3.1.2 Local additions to the declaration of consent

Although our Declaration of Consent is valid for all of the case studies in the GOGREEN projects, it might be necessary to include local additions based on your local legal context. **This particularly applies to non-EU countries**. We therefore advise you to send the declaration of consent to the legal advisor(s) at your university to check if any additions should be made. If you have any inquiries in this regard, please contact Oda Hustad at ohustad@ruc.dk.

3.2 Document collection

Written documents about the respective cases serve as both primary and secondary sources of data in the GOGREEN project. We suggest the following steps for the document collection process:

1. **Before interviews and observations**: Collect all publicly available documents on the case (see **Appendix 6.4**). This includes **documents retrieved from project websites, newspaper articles about the project, project descriptions made by project funders, local/regional/national government reports and memos**, etc. Agendas and minutes from past meetings are sometimes publicly available. Read up on the aims and scope of the case as much as possible, collecting as much insight as you can into what the case aims to achieve in terms of green solutions, how it operates, and what it is

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[3] For the legal text, see https://gdpr.eu/article-6-how-to-process-personal-data-legally/ and https://gdpr.eu/article-9-processing-special-categories-of-personal-data-prohibited/

achieving. This is to avoid spending too much time discussing the intention and outcomes during the interviews so that there is enough time to ask the many questions about the GFs. Learning as much as possible from available documents also facilitates better understanding of what is going on at meetings, to ask more precise questions, and thus to make high quality observations about the impact of the GFs.

2. **During interviews and observations**: At the end of interviews with project gatekeepers (e.g., project facilitators, government actors, civil society organizations), **remember to ask if they have any internal documents about the project that they might be interested in sharing**, such as project plans or PowerPoint presentations that are not publicly available.

3. **After interviews and observations**: When listening through interview recordings and/or looking through notes from interviews and observations, make note of the documents to which the informants refer. This could be documents relating concretely to the case, but it could also be legislation, strategies published by national/regional/local governments, and so forth that you may want to retrieve. Note that informants may also refer to actors that would be important to interview.

After all of the relevant documents have been collected, please consult the data analysis and scoring schema (see **Section 5** in this research protocol).

3.3 Interviews

Qualitative interviews constitute a central part of the empirical data used for this project. In many respects, it is the data source that provides crucial insights that are important for our investigation of the role of the GFs and to conduct the QCA scoring. The interview guide can be found in **Appendix 6.5**. We have prepared an extensive set of structured interview questions to ensure a certain level of reliability (consistently reproducible) and validity (accurate measurements). We therefore expect the collection of interviews to assume the bulk of the data collection time for the GOGREEN project. We also recognize that each of the GFs examined are complex and multidimensional, which may be explored through different questioning techniques. However, to ensure that the reliability and validity is upheld, we implore you to use the definitions we have outlined as the point of departure. If ambiguities arise in the interview data and further coaxing of the informants is required to score each variable properly, local researchers are welcome to supplement the existing interview guide with further questions.

3.3.1 Establishing whom to interview

An important first step in the interview data collection will be to establish who is relevant to interview within and in close relation to the co-creation project. We recommend that you start by interviewing one or two informants who are serving as gatekeepers in the case, which will typically be GOGREEN facilitators. **Be sure to reserve some time at the end of each interview to ask about the names and contact details of other actors in the co-creation project who are relevant to contact for interviews.** Ask this question at the end of each interview with all informants. Using informants to find other interview participants in this way is

referred to as snowball sampling.[4] This approach will allow you to go from interviewing the core participants to the periphery of participants in the co-creation project(s) you are investigating. Interviewing someone outside the co-creation can provide a different perspective on the process and its intentions and impact.

It is imperative that we strive to interview a diverse group of informants from the co-creation cases to ensure that all of the participant perspectives become visible, and all voices are heard. We have defined the different roles that actors can play in a GOGREEN case in **Appendix 6.3**. However, a plethora of actors can fit under the "project participant" label (see **Appendix 6.3.1**). When mapping relevant interview participants, it is particularly important to get an overview of who GOGREEN participants are and to interview people representing all types of participants, including relevant and public actors, NGOs, citizens, private companies, and civil society organizations.

Using snowballing to select informants for interviews based on their reputation carries a risk of excluding actors who are critical of or have been excluded from the collaboration process. Since such actors may be able to provide valuable information, we should try to identify and interview 1–2 people who are close to the co-creation project and have relevant knowledge about it but are not themselves part of GOGREEN.

We recommend that you **interview at least 12 informants per GOGREEN case.** Bear in mind that it might be necessary to interview some informants (e.g., project facilitators) more than once.

3.3.2 Three structured interview questions for each GF (independent variable)

In the interview guide, each GF is explored through three cumulative layers of interview questions, informed by the lexical scale construction on which the scoring will be based (see Section 5):

- The *first interview question* aims to establish the **presence** of the GF in question. For GF 8, for instance, the first question asks whether GOGREEN relies on some pre-established or tailor-made digital platforms or meetings pointing to scaffold collaboration. This question aims to establish whether or not there is presence of this GF (institutional platforms). **If the answer to this question is "yes," please proceed to the next question for the same GF. If "no," please proceed to the question for the next GF.**

- The *second interview question* aims to establish whether the GF plays a **significant role** in the collaborative problem-solving process in the sense that most actors are knowledgeable of, refer to, and make use of the GF. For GF 8, for instance, the second question asks whether physical venues and digital platforms are used to a significant degree as a part the collaborative problem-solving process. **If the answer to this question is affirmative (yes) and the actors tend to spend time and energy on the GF that seems to have considerable prominence on the project, please proceed to the next question for the same GF. If the answer is negative, please proceed to the question for the next GF.**

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[4] For a reference on reputational snowball sampling, see K. Farquharson (2005), A different kind of snowball: identifying key policymakers. *International Journal of Social Research Methodology* 8(4), 345–53. DOI: 10.1080/1364557042000203116

- The *third interview question* probes whether the form and functioning of the GF are **supportive** of collaboration, defined as the constructive management of differences aimed at finding common solutions to common problems. For GF 8, for instance, the third question asks informants to provide examples of whether the physical venues and digital platforms were formed and have functioned in a manner that made it easier to collaborate. Please observe that we are **not asking whether the GF in question impacts the co-creation of green solutions at the project level** (the dependent variable), but merely **whether the GF has the capacity to support the collaboration in GOGREEN**.

In short, the first interview question for a particular GF asks about its mere **presence**, the next asks about the **significant role** of what is present, and the third question asks about the **form and functioning** of a GF that is not only present and significant, but also has the **capacity to support collaboration** (see **Box 1** for an illustrative vignette).

Box 1: Illustrative vignette on evaluating leadership as a governance factor in the coffee industry

> Assume that a local co-creation project in a coffee-growing region has a formal leader who is supposed to convene and facilitate the network (there is presence of leadership). Most of the actors participating in the co-creation process may also recognize that the appointed leader is clearly visible and that he aims to lead meetings and drive the activities between them (there is a leader who plays a significant role). However, the appointed leader may not lead in a collaboration-supportive manner. Unknowingly, the leader may tend to make all discussions revolve around their own ideas and proposals, thus preventing open discussion that can lead to new creative ideas and innovative solutions (the leaders have little or no capacity to support collaboration).

3.3.3 Interview guides

In theory, the fifteen GFs can be examined in any order (chronological or otherwise), and each project partner is thus free to proceed as they deem appropriate. After several interviews, project partners might find it preferable to reorganize the sequence of interview questions. However, the experience from the GOGREEN pilot interviews (conducted during the fall of 2022) is that investigating the GFs in chronological order (as outlined in **Table 1**) results in an uneasy flow of questions. For the interview guide, we have therefore rearranged the GFs into an order that, in our experience, gives the best flow of questions and answers. You are of course welcome to apply a different order of GFs in your interviews (see **Appendix 6.5**).

During interviews, informants might spontaneously answer some interview questions related to other GFs than they are asked about. It is therefore important for interviewers to familiarize themselves with the scoring schema prior to conducting interviews. This way, interviewers will be able to adjust the interview process to the emergence of the spontaneous progression of the interview. Consequently, the proposed interview guide cannot be expected to be followed stringently in the proposed order.

If English is not your mother tongue, it is necessary to translate the interview questions before conducting the interviews. **When translating the interview questions, we advise that two different people translate the questions independently and subsequently cross-check their respective translations** to mitigate potential biases and idiosyncrasies. This must be done to avoid or minimize translation bias. Alternatively, a

back-translation procedure can also be used, whereby you (a) translate the document to the target text, (b) translate the translated text back to the original language, (c) compare the original and translated texts, and (d) resolve ambiguities and differences between the original and translated texts.

3.3.4 Overview of interview participants

To help you get an overview and keep track of the diversity of relevant and affected actors that you will want to interview, you are advised to create a document where you can: a) list prospective interview participants and note their formal position, organizational belonging, role in the co-creation project and their contact details, and b) note down details about already conducted interviews. We have prepared a template for doing so (see **Appendix 6.6)**.

3.4 Observational data

Observational data is retrieved from participations in meetings or other contexts and events in which actors from the project convene. As observational data gathered from the meeting focuses on the collaboration process and practices, they will not be relevant for all the GFs. To this end, see **Appendix 6.7 for a full overview of how observational data is linked to each GF.**

Observational data will be recorded in the form of field notes, detailing the events, interactions, routines, ideas, language, and other patterned behavior from meetings and events. As recording everything through handwritten notes is an arduous task, records and photographs can provide a supportive role for contextual information that can aid event recall.

It is important to note that the observational data is not used in the QCA in its customary manner to synthesize richly detailed accounts in the form of thick descriptions. Instead, it will be used as a forensic tool by which to identify relevant and admissible evidence that can serve as a complementary source of data seeking to improve the external validity of conclusions drawn from interviews. The observations from meetings will therefore serve to either corroborate or contradict conclusions drawn from the interviews, especially in relation to GFs that might be prone to reporting bias or omissions. In other words, while it might be relevant nonetheless for the in-depth comparative case studies to collect ethnographic data based on thick descriptions, they will not be explicitly relevant for the QCA part.

Project members should attempt to attend multiple meetings, as drawing any generalized conclusions will otherwise be difficult. However, it is up to the discretion of each local researcher to determine if enough observational data has been collected. Observations can be generalized provided the assumption that other persons embedded in the same context would be expected to act in a similar way. It is thus important to ask: To what degree are the observations recorded at particular events or meetings representative of the case study in general? Further along these lines, local researchers should participate in meetings and events in a passive manner to avoid biasing the data.

3.5 Survey and independent evaluations

While the abovementioned data sources are primarily used to measure the independent variables, we will dedicate the use of survey and independent evaluation reports to evaluate the dependent variable in terms of co-created green outcomes. Here, we are not talking about big national surveys, but rather a small survey

administered to the 12–20 people with whom we have been in contact in relation to the case study. Ideally, we should get responses from at least one individual representing each stakeholder group. Stakeholder groups means all the organizations and groups involved in the project, including companies, NGOs, public organizations, citizen groups and other associations/organizations/groups.

To obtain a high response rate, such a survey may be conducted during a network meeting, workshop, seminar, or conference in which the case actors are all present. Independent evaluation reports refer to reports that measure, calculate, or in some other way aim to estimate the impacts of co-created green solutions. Such reports may be written by researchers participating in or associated with the case or by third-party scientists.

The scoring mechanisms for the outcome variable will be outlined in Section 5.4. The outcome variable essentially seeks to capture three aspects of co-created green transitions, all of which must be present to deem a case successful:

1. **The collaboration between the actors has led to a process of creative idea generation** based on the exchange of different experiences, ideas, and forms of knowledge that are used to reframe the problem, formulate relevant goals, develop fresh perspectives, and search for unconventional problem-solving strategies (establish that collaboration spurred creative idea generation as a condition for innovation).

2. **The collaborative process has fostered a degree of innovation by breaking with common wisdom and established practices in the context of implementation while enjoying widespread support**. The innovation is thus twofold. First, it can be socially innovative, as it commands support from the different societal stakeholders to mobilize around a co-created solution. Second, it can be technologically innovative, as it involves the introduction of new solutions that have not been tried before in a given context. In practice, this could entail new forms of policy, regulation, production, transport, consumption, or social living, which have hitherto not been attempted in the given local, regional, or national context (establish that collaboration produced an innovative solution that is creative, implementable, and likely to have an effect).

3. **The collaborative problem-solving process has led to the formulation of a tangible solution (output) that produces a discernible and measurable improvement via-à-vis sustainability-related problems and goals (outcome)**, which is fully or partially implemented or at least tested in practice and possible to calculate.

First, the survey will be used exclusively for the outcome variable on successfully co-created green transitions, as it will **be used to measure whether the collaborative process stimulated creative idea generation, whether it developed an innovative solution, and whether the more or less innovative solution contributed to the green transition.** To this end, we have prepared a battery of questions in the survey to establish if they find the collaborative problem-solving process and their co-created solution(s) (a) creative, (b) innovative, and (c) to produce a green outcome. The survey can be found in **Appendix 6.8** and will be administered to actors who have participated in the co-creation process and possess knowledge of the case

and its outcome. The survey will be administered at the end of the data collection process to ensure that we are measuring the impact of the collaborative process and how different GFs have supported it. Like the interviews, they must also be either back translated or translated independently by two researchers to ensure that translation bias is mitigated.

Second, evaluations performed by local or third-party experts or researchers will complement the survey data, especially to establish **if the output of the co-creation process produces a measurable outcome that contributes to meeting sustainability-related problems and goals**. Evaluations by third-party experts could be in the form of scientific reports or assessments of GOGREEN solutions derived from scenario-building, calculations, modelling, experimentation, test-runs, or actual measurement. To illustrate, some countries have an emission reduction calculation that tells you exactly how much emissions are reduced when certain changes are made to farming methods.

If the mini-survey cannot be properly conducted for any reason (e.g., only three people return the questionnaire) and there is no research- or expert-based evaluations of the results and impact of the local co-creation, the dependent variable must be measured through an onsite or online focus group interview with the key actors in the case, where the survey questions are used as interview questions and the informants discuss and agree on the answers to the questions. The use of this failsafe will result in a low confidence score.

4. Data analysis and scoring schema

The data collected will serve a dual purpose: (a) to write the case reports for the QCA analysis, and (b) to form the basis for in-depth comparative case studies. **This section outlines how the data is analyzed and scored for the purpose of writing up the QCA case report (see Appendix 6.10 for scoring template). The in-depth comparative case studies, which will be conducted in parallel to the QCA and bring together smaller and larger groups of GOGREEN research partners, will have to be organized on a case-by-case basis depending on the agreements reached between partners.** For this reason, it would be counterproductive to outline an analytical template for the in-depth comparative case studies, as we anticipate that project partners will be independently organizing and negotiating their collaborations based on either shared interest in one or more GFs or through their shared geographical location.

The QCA method requires each GF to be assigned a membership score based on a continuous or ordinal scale between presence (1) and absence (0). The QCA logic of inquiry is that we can examine if the presence of specific GFs (independent variables) is consistent whenever a co-creation project successfully produces co-created green transitions (dependent variable). To this end, GOGREEN has opted for a lexical scale (see **Box 2** for discussion), which distinguishes between four grades based on the aggregation of three conceptual attributes.[5] As the assumption is that each factor has a positive (or negative) influence on the co-creation processes leading to green solutions and outcomes, the lexical scale seeks to capture the **qualitative degree of presence** of the governance based on a cumulative logic.

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[5] J. Gerring, D. Pemstein, and S.E. Skaaning (2021), An ordinal, concept-driven approach to measurement: the lexical scale. *Sociological Methods and Research 50*(2), 778–811. https://doi.org/10.1177/0049124118782531

Box 2: Understanding the lexical scale

The primary challenge to assigning these membership scores is connected to the so-called aggregation problem, which refers to the difficulty for complex phenomena and concepts comprising a multiplicity of dimensions to be combined into a single index. GOGREEN opts for a lexical scale construction based on a ranked and cumulative ordering of conceptual attributes. The lexical scale has been chosen for two reasons. First, the lexical scale is conceptually better than alternatives because attributes are hierarchically ordered and allow us to compare the variables meaningfully. Second, it is the only method we can apply consistently without adding too many layers of complexity that render the execution of the research protocol untenable.

We base our QCA analysis on three cumulative degrees of membership: the (a) presence, (b) significance, and (c) quality of the GFs to bring about support (see **Table 3** and **Figure 3** for tabular and visual representation). Concretely, this implies that condition (c) presupposes (b), and condition (b) presupposes (a). If the GF is absent (a), then it cannot play a significant role in GOGREEN (b). Extending the same logic, if the GF does not play a significant role in the GOGREEN routines and practices (b), it cannot exhibit the form and functioning that can be assumed to support the collaborative problem-solving processes (c). Consistent with the law of transitivity, if a GF is not present (a), then it cannot have quality (c).

Table 3: the four grades in the lexical scaling of dependent variable

QCA membership score	The GF…
0 (Fully out)	**is absent** from the collaborative process
0.33 (More out than in)	**is present** in the collaborative process but does not play any role in GOGREEN
0.66 (More in than out)	is present and plays a **significant role** in GOGREEN
1 (Fully in)	is present and has a form and function that **supports** collaboration

Figure 3: Visual representation of the cumulative logic based on a decision-making tree
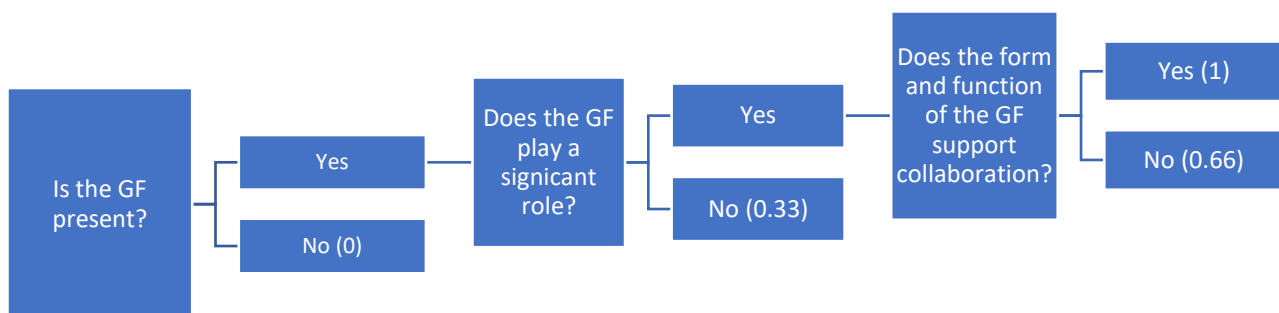
The following subsections will provide the procedure for converting the raw data into these four grades of membership scores for each of the GFs. The chief challenge is to provide clear instructions on how to discern between the different grades, which involves a degree of judgment by each researcher analyzing the data and converting them into membership scores. For this reason, we also provide several measures to ensure the validity and reliability of the scoring process.

4.1 Evidence hierarchy

As part of the scoring process, **the data types have been ranked through a hierarchy of evidence based on the characteristics of the GFs**. To score the GFs, we rely on a contingent but uniformly applied hierarchy of evidence that ranks the relative weight of the different data types. As you will see later, the hierarchy of evidence is different for the dependent variable.

The principal assumption is that the GFs are expected to influence the co-creation project and that this is reflected in its collaborative and organizational practices. **The highest-ranking data source will therefore be the interview data** for two reasons. First, interviews will constitute the bulk of data collected for the case reports in sample size and will provide most of the evidence for scoring the GFs. Second, they have been carefully crafted to elicit data based on which scores can be assigned to the four gradations of the lexical scale construction.

Observations and documents assume a secondary ranking, serving more of an auxiliary function. Their relevance as admissible evidence is asymmetrical, meaning that their application to the scoring schema cannot be uniformly imposed and thus poses problems regarding reliability. Furthermore, there are many instances in which documents (internal to the project) cannot be retrieved, and access to observations might be limited. For this reason, any conclusions drawn from the two data types should ideally be corroborated by interview data, although it should be weighed relative to the reliability of informants that can lie or provide distorted information. If the existing interview data does not corroborate it, you should seek to explore those GFs through further rounds of interviews. For each of the GFs, we will nonetheless provide several exceptions where it is conceivable that observations and documents can overrule the interview data.

Documents and observations will primarily be used to establish a presence (0.33) of a GF and evaluate the institutional embeddedness of a GF in the collaborative and organizational processes of the project (0.66). Documents and observations will be less relevant for establishing the quality of a GF (1) unless there are written evaluations of the GF, or its quality is discussed directly or indirectly in a meeting.

The unique relevance of documents will be the greatest for the structural GFs (1–5), as they are analytically focused on the public administration system of a given local, regional, and national context and should therefore have an objective referent in terms of laws, legislations, campaigns, and codified norms and rules. The unique relevance of observations is that they will also serve as negative evidence; that is, data that contradicts reported accounts from interviews. This will be particularly pertinent for tactical and operational GFs (11–16), which seek to explore intersubjective dynamics such as inclusion, trust, joint visions, and conflict mediation, which are liable to informant bias and blind spots.

4.2 Ensuring the validity and reliability of the scoring process

Converting the raw data into QCA scores is critical for writing the case report, although the conversion process cannot be achieved through an algorithmic procedure that removes all interpretation bias. Still, local researchers will have a better chance of correctly interpreting the different data to produce a relatively precise score. Unavoidably, however, the project partners require a sizeable degree of judgment to assess whether each of the GFs should be assigned one membership score or another. To simultaneously strengthen

the validity and reliability of the measurement of each variable, we introduce three measures to mitigate potential biases.

First, the scoring will be based on a **triangulation process** where the four raw data types will be used jointly to score them. The purpose of triangulation is to seek "convergence and corroboration through the use of different data sources and methods" (Bowen 2009, 28). In **Appendix 6.10**, the scoring schema outlines the triangulation process for consistently scoring each variable and how conflicting evidence can be disambiguated. The protocol cannot give an exhaustive account, so you should contact the Roskilde team, particularly your contact person, if you require consultation for any reason.

Second, **we propose that each GF be scored independently by at least two researchers, ensuring inter-coder reliability**. The purpose of independently assigning scores is to uncover potential interpretation biases that might be overlooked when evaluated in a group. Thus, once each score has been independently assigned, you should compare potential discrepancies and identify the reasons thereof. Discrepancies are likely to occur, especially when the different data types offer conflicting evidence, which might lead to ambiguous interpretations.

Third, each variable score should be accompanied **by a summary of 4–5 sentences providing its rationale and a self-reported score** of your confidence in its accuracy. The short summaries will be helpful for the subsequent QCA, as it becomes possible to recalibrate the membership scores of GFs with low confidence scores to test the robustness of the findings. This also increases the transparency of what types of evidence are weighed heavily and how potentially conflicting evidence is handled when assigning the final membership score. It goes without saying that the qualitative description of the motivation for a certain score must fit with the integrated case analysis that must be supplied in the case report as a prelude to scoring the independent and dependent variables.

4.3 How to score the independent variables: the GFs

The scoring method follows the same cumulative approach of the lexical scale construction, as the score increases based on the aggregation of evidence. The lexical scale construction makes a qualitative distinction between hierarchically ordered characteristics of a GF and their presence. The lexical scale construction draws upon a qualitative (kinds) and quantitative (degree) analytical approach, as the three gradients can also be heuristically interpreted as "degrees of presence." The boundary conditions for the four grades thereby follows this logic, as they seek to identify different degrees of presence. A detailed account of the contextual factors relevant for scoring each of the GFs can be found in **Appendix 6.2.1.**

Firstly, you establish if a variable is absent (score 0) or present (score 0.33). The documents and initial interviews will usually establish the presence or absence of a GF and should be the easiest step in the scoring schema. Presence is established if a GF exists broadly within the environment of the co-creation project, although there might not be a discernible link between the presence of the factor and its influence on GOGREEN. In contrast, the absence of a GF refers to the inability to identify key features of a GF, which would otherwise be able to influence the co-creation project. Furthermore, if you cannot establish any presence, you can also logically assume that the GF neither plays a significant role nor has the capacity to support collaboration. Thus, you can move on to the next variable.

Second, once you establish the presence of a GF, further evidence can be accumulated to establish whether it plays a significant role. This evidence can be found by asking the second interview question, which aims to probe the prominence of the GF (score 0.66). In this instance, you establish that most actors find the GF to be clearly visible, meaning that they are referred to and/or used to a significant extent by the actors in and around GOGREEN. Documents and observations can corroborate such conclusions either if the extensive institutionalization and use is reported in project documents (or elsewhere) or through the attendance of meetings in which the institutionalized use is visible. In rare cases, you might base a scoring of implementation based solely on documents or observations if the practices or routines are tacit and thus not consciously enacted. In other instances, the project facilitator might be the only informant who argues that a GF plays a significant role, which is likely to occur if particular, more or less institutionalized actions are taken for granted due to their tacit character. What appear to be spontaneous gestures from the perspective of project participants can thus represent an underlying institutional pattern of routinized action by the project facilitator.

Lastly, further evidence can be accrued to establish whether the form and functioning of the GF have the capacity to support the collaboration between a diverse group of actors (score 1). The GF will be judged as fully present if it is not only present and significant but also has a form and function that is judged to be helpful for GOGREEN. Conversely, if a GF is purported to be present and play a significant role but lacks the capacity to support collaboration on a concrete level (either according to informants or by the researcher), it should be marked as not fully present.

4.4 How to score the dependent variable: successfully co-created green transitions

The outcome variable will be based on the survey data and the evaluations of local researchers and/or third-party experts.

The survey data will be used in the raw format, as we will have to run statistical tests (e.g., Cronbach's alpha, factor analysis) to ensure internal validity between the battery of items that constitute the outcome variable of "successfully co-created green transitions." We will select the final items on the basis of which we will construct the outcome variable based on the calibrations of the QCA.

As local researchers, we will ask you to score one component of the outcome variable; namely, if the co-created solutions will produce or have produced a green output/outcome. The scoring will be dichotomous, meaning that it is either present (1) or absent (0). The green output/outcome criteria can only be evaluated if GOGREEN can document any quantifiable or demonstrable effect, either by testing prototypes of the solution based on simulated effects or observable effects from implemented solutions. The reason we do not require concrete, measurable outcomes from implemented projects as a criterion for success is because we cannot expect all of the projects to have reached or concluded their implementation phase by October 2023. Scoring a case lower because of the disjointed timetables between the GOGREEN project and each case study would thus be a misleading indicator of success or the lack thereof.

If local circumstances prevent you from properly conducting the mini-survey and there is no research- or expert-based evaluations of the results and impact of the local co-creation, the failsafe is to measure the dependent variable through an onsite or online focus group interview with the key actors in the project,

where the survey questions are used as interview questions and the informants discuss and agree on the answers to the questions. Using this failsafe solution will result in a low confidence score.

5. Feedback to case study projects

The ability to conduct our local case studies is based on considerable goodwill and voluntary commitment on the part of the co-creation projects and their participants. Furthermore, informants have no direct incentives (apart from supporting research and perhaps reflecting on their project) to participate in interviews. For this reason, we can reciprocate the generosity of the local project participants by providing feedback to the co-creation projects based on our in-depth examination of the cases. Through feedback, the local communities can benefit from our qualified judgment on how to improve the co-creation projects, either in the existing or in future projects, to advance co-creation effectively and spur the green transition. Some projects may also be interested in publishing a written research report on their website to help to diffuse knowledge about their project and the lessons learned. However, it is important that such feedback is deferred until the data collection process has been concluded to avoid influencing the data, as giving them advice at an early stage might result in them changing their collaborative processes based on our advice.

Here, it is important to note **that it is up to you as researchers whether and how you would like to give feedback to case informants**. If you choose to provide oral or written feedback to the project that has been researched, it is important to provide balanced and constructive feedback focusing on the achievements, the lessons learned, and what can be improved (perhaps indicating how). It is also important not to compromise informants who have voiced criticisms or expressed dissent. Moreover, if the research findings might appear opaque to laypersons or bureaucratic project facilitators, it might be necessary to communicate the findings in a simplified form such that everyone can comprehend their implications. Finally, depending on our joint planning, we might be able to invite project participants to participate in an online conference where experiences from different cases are shared in an open space.

6. Appendices

The following appendices have been developed as guidelines for all GOGREEN researchers before and during the data-collection and analysis processes. Here, you will find the following documents:

6.1 Case selection criteria
6.2 Overview of variables and how to score them
6.3 Typology of actors
6.4 Documents and their links to variables
6.5 Interview guide
6.6 List of informants
6.7 Observational data collection guide
6.8 Survey for the outcome variable
6.9 Checklist for keeping track of the data-collection progress of GOGREEN case studies
6.10 Scoring schema and guidelines for each GF
6.11 GOGREEN case report template
6.12 Sample of a GOGREEN *Declaration of Consent*
6.13 List of resources available on Teams
6.14 Contact information for GOGREEN researchers at Roskilde University
6.15 Important dates and deadlines

6.1 Case selection criteria

All cases have been selected based on the definition of **co-created green transitions**; that is, projects based on collaborative problem-solving processes focusing on bringing about green transitions in and through innovative and creative processes involving public, private, and civic actors, including citizens, community leaders, and civil society organizations.

The case should contribute to a **green transition**, understood as the transition toward greater environmental sustainability. Explicitly or implicitly, the case should relate to one or more of the green SDGs (6, 7, 11–15). These SDGs focus on, respectively, clean water supply, protection of life in oceans and on land, responsible consumption and production, and urban living that helps to reduce resource depletion and mitigate or adapt to the climate crisis to protect nature and human life. Many cases will more or less directly touch on several of these goals; for example, a ban on plastic bags may affect Goals 6, 11, 12, 14, and 15.

The cases are all expected to focus on **innovation** beyond changes in individual behavior, while not necessarily aiming for sector-wide, systemic change. To help secure comparability, we have **avoided cases** based on major technical infrastructure projects (e.g., offshore wind parks) and projects that only seek to provide immediate benefits to the participants (e.g., tree planting in local streets).

The cases have been instances of **regional and/or local collaborative problem-solving processes involving public, private, and civic actors.** While the participating actors can mainly be local and regional, the national- and international-level actors can also participate in the collaborative problem-solving process. The cases have **included lay actors** (e.g., service users, citizens, neighborhood groups, tribal communities). Ideally, these cases should enable lay actors to influence problem definition and solution design through sustained interaction with other stakeholders.

Collaboration between public and private actors should be perceived as a vehicle for green transitions. However, we **have not** selected cases based on **how successful they are**. Success in co-creating a green transition should be an **emerging feature** of the case and **may vary** from case to case.

The cases all represent **contemporary cases** with an ongoing process that allows us to observe meetings and conduct surveys in addition to interviewing participants and studying documents. Ideally, we should be able to enter the case at the end of the design phase so that it is possible to assess some initial results of the new co-created green solution within the 10-month data-collection period from January 2023 to October 2023. The results may either come from an experiment, the testing of a prototype, or the initial implementation phase.

The case must be of **medium size**, avoiding very big and very small projects. As an indication of size, the cases should allow us to interview at least 10–15 individuals that are key to the project. The cases have been selected based on the assumption that they are **sufficiently robust** so that they do not unexpectedly end before we have collected our data, thereby avoiding that we are left empty-handed. If a subsequent collapse of the case happens contrary to what was expected, they can naturally be categorized as an unsuccessful case.

Case check list

Is the case…	
one of co-creation of green transition solutions? I.e., does it involve public and private stakeholders together with lay actors (e.g., service users, citizens, neighborhood groups, tribal communities)? And is collaboration viewed as the vehicle for green transition?	
one where lay actors are enabled to influence problem-definition and solution design through sustained interaction with other stakeholders in the project?	
contributing to a green transition (SDGs 6, 7, 11, 12, 13, 14, and/or 15)?	
regional and/or local?	
an ongoing case?	
consenting to participate in the GOGREEN project?	
supposedly robust enough to not implode during the data collection?	
large enough to allow us to interview at least 10–12 individuals?	

6.2 Overview of variables and how to score them

The GOGREEN project works with two overall variables. The dependent variable consists of 16 GFs conditioning co-creation, and the independent variable is green transitions (see **Figure 1**). As mentioned in the introduction of this research protocol, we examine the GFs as conditioning factors shaping the collaborative problem-solving processes (of the co-creation project) and, in turn, the capacity of these problem-solving processes to produce successfully co-created green transitions.
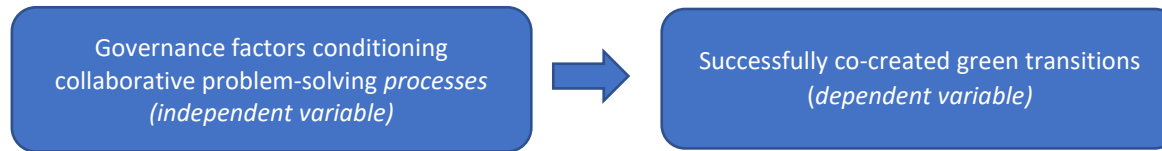
Figure 1: The basic relationship between GFs and green transitions (repeated from section 1).

The following section (6.2.1) describes the independent variable and section 6.2.2 describes the dependent variable.

6.2.1 Independent variable: 16 governance factors

The table below describes the 16 GFs (numbered 1–16) comprising the dependent variable, **including a definition of their key concept(s), a research question for each GF, and instructions on how they should be scored.** The GFs are categorized as structural, strategic, or tactical and operational GFs.

GF	Key concept(s)	Research question(s)
1. Perceived importance of biosphere conditions	*Biosphere conditions* are objective states of the natural world relating to atmospheric, terrestrial, and aquatic conditions. These conditions are discursively *constructed* and institutionally embedded at the international, national, and local levels, which in turn become a motivational force for collaborative problem-solving processes.	What perceptions of the biosphere condition do the actors draw on to explain why they started the collaborative problem-solving process?
2. National and international legislation, programs, and formal goals	*National and international legislation, programs, and formal goals* are written laws, rules, policies, goals, and programs that convey more or less explicit expectations regarding the contribution to be made by local actors to finding new solutions or improve existing ones.	To what extent do legislation, policy programs, and formal goals positively/negatively affect collaborative problem-solving processes and their capacity for developing solutions to the sustainability issue at hand?

GF	Key concept(s)	Research question(s)
3. Relative openness of public governance paradigms	*Public governance paradigms* can be more open or more closed to collaborative problem-solving due to decentralized political responsibilities and tasks to relatively resourceful local political-administrative institutions capable of orchestrating collaborative problem-solving processes.	To what extent and how does the bureaucratic apparatus create or inhibit opportunities for actors to engage in collaborative problem-solving processes on the local-government level?
4. Formalized institutional channels for citizen participation and community mobilization	*Formalized institutional channels* involve any codified rules and laws that enable the regular occurrence of an action, such as civic participation or other instances of collective agency.	How do legal, institutional, and organizational rules and channels for local citizen participation and community mobilization support the involvement of lay actors in collaborative problem-solving processes?
5. Mechanism for ensuring top-down government and bottom-up social accountability	*Accountability mechanisms* are mechanisms for ensuring that the actors engaged in the collaborative problem-solving process are compliant with institutional norms, rules, or other informal requirements.	How are the interests of service users, relevant and affected actors secured by accountability mechanisms (downward accountability)? How does downward accountability interplay with accountability mechanisms toward public authorities and sponsors (upward accountability)?
6. Strategic agenda-setting by means of translation	Effective *translation* entails a reshaping of the agenda to fit the purpose of local actors, a reinterpretation in light of local forms of knowledge, practices, and norms, and an alignment with local discourses, belief systems, and logics of appropriateness.	How do project participants translate the green SDGs to make them attractive, productive, and meaningful to their local contexts? How does this translation work drive green transition projects?
7. Construction of narratives about successful multi-actor collaboration	*Positive narratives* are local stories about successful multi-actor collaboration that help convince actors of the necessity of local collaborative problem-solving processes.	To what extent and how do positive (or negative) local narratives about collaboration entice local actors to participate in and commit to collaborative problem-solving processes?
8. Building or harnessing institutional platforms and arenas	*Platforms* are relatively permanent institutional frameworks designed to scaffold collaboration by helping local actors to organize and innovate. They can be digital, organizational, or physical structures. They often do so by creating ad hoc *arenas*, which are spaces for participation, communication, and joint action.	To what extent and how do platforms enhance the collaborative development of green solutions by providing arenas and infrastructural support that enhance the collaborative problem-solving processes?

GF	Key concept(s)	Research question(s)
9. Provision of access to blended financing	*Blended financing* uses public funds and development assistance strategically to improve the risk and return profile of investments through the provision of basic investments, grants, guarantees, equity, low interest loans, capped return schemes, etc.	Does the project have access to blended financing? If yes, to what extent and how does this help to spur the collaborative problem-solving process?
10. The capacity to leverage support from authorities to enable local collaboration	*Leveraging support* entails the capacity to engage in close and continuous dialogue and, consequently, request support from public authorities to remove or mitigate obstacles for the collaborative project.	How does the interaction between governments (at different levels) and local actors convert into support that enables the collaborative problem-solving process?
11. Inclusion and empowerment of relevant and affected actors:	*Inclusion* refers to the implementation of measures to actively involve potentially marginalized actors in the collaborative process. *Empowerment* can be defined as capacity-building actions, interventions, and conditions that enable individual actors or groups to achieve a desirable outcome, which allows them to influence the collaborative processes. *Relevant actors* are public, private, and third-sector actors who possess important knowledge, skills, and resources rendering them capable of contributing to understanding the problem and designing and implementing a solution. *Affected actors* are those who, in addition to skills and resources, have valuable experiences with existing problems and solutions or will feel the impact of new solutions, and thus can help to identify local needs.	To what extent and how are relevant and affected actors empowered in the collaborative problem-solving process? And to what extent and how does this help to harness their experiences, ideas, competences, and resources?
12. Clarification of interdependence vis-à-vis common problem and joint vision	*Clarification of interdependence vis-à-vis common problem and joint vision* involves the recognition that all affected and relevant actors included in the collaborative process are needed to solve the goals of the project through a joint effort	To what extent and how is there a perceived interdependency between the actors involved in the collaborative problem-solving process? And how do leaders attempt to clarify, strengthen, and create interdependencies to enable collaborative processes?
13. Trust-building and conflict mediation	*Trust* is defined as the positive but uncertain expectation that other actors will refrain from exploiting a given situation to act opportunistically. *Interpersonal trust* is a matter of spurring social interaction between participants. *Institutional trust* is a matter of involving the participants in defining the set of rules, norms, and procedures for the project.	To what extent and how is the project marked by interpersonal and institutional trust? How are conflicts handled in the project?

GF	Key concept(s)	Research question(s)
14. Use of experimental tools for innovation	Two innovation tools are central in collaborative problem-solving processes: *User-centered design* stresses the importance of accessing the knowledge and perspectives of those who will ultimately use the product, policy, or institution. *Prototyping* is a process of iteratively improving design based on continuous user feedback.	Is a user-centered design and/or prototypes used in the project? How does this affect the collaborative problem-solving process?
15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation)	*Process evaluation* seeks to evaluate the ongoing quality of collaboration so as to garner feedback that can be used to improve collaboration in a timely fashion. *Developmental evaluation* introduces critical diagnostic questions into the collaborative problem-solving process that encourage participants to address basic assumptions about the direction of the collaboration and to collect information on whether current understandings and objectives are "on the right track" and whether provisional solutions produce the expected results.	To what extent and how does the project use critical self-reflection and learning in the form of process and/or developmental evaluation?
16. Exercise of facilitative leadership	*Facilitative leadership* is crucial for convening actors, facilitating collaboration, catalyzing creative problem-solving, and ensuring progression toward project completion.	To what extent is there a clear and visible exercise of leadership? Has it been exercised in a manner that supports collaboration?

6.2.2 Successfully co-created green transitions as dependent variable

Outcome of interest	Key concepts	Research question(s)
Successfully co-created green transitions	*Successfully co-created green transitions* refer to when the collaborative problem-solving processes of co-creation projects formulate and agree upon a solution that (a) produces green outcomes, (b) involves a degree of innovation, and (c) utilizes creative problem-solving processes. *Green outcome(s)* are defined as solutions that have led to the formulation of a tangible solution (output) that produces a discernible improvement via-à-vis sustainability-related problems and goals (outcome), which are either (a) fully or partially implemented or (b) at least tested in practice and possible to calculate/measure. *Innovation* is defined as solutions that break with conventional wisdom and established practices in the context of implementation, while also enjoying widespread support. The innovation is thus twofold. First, it can be socially innovative, as it commands support from the different societal stakeholders to mobilize around a co-created solution. Second, it can be technologically innovative, as it involves introducing new solutions that have not been tried before in a given context. *Creativity* is defined as problem-solving and idea-generation processes based on the exchange of different experiences, ideas, and forms of knowledge that are used in reframing the problem, formulating relevant goals, developing fresh perspectives, and searching for unconventional problem-solving strategies.	To what extent has the project produced an innovative, green solution? Has it been premised on creative problem-solving processes and idea generation?

6.3 Typology of actors

The following section briefly outlines the typology of actors that the GOGREEN project uses as its starting point. This typology is particularly relevant for the conducting of interviews and making observations.

Please note that a single actor can play multiple roles in a collaborative project; for instance, a municipal organization can be both project participant, project facilitator, funder, owner, and bureaucratic actor at the same time. In cases where the same actor has multiple roles, please make sure to ask all of the questions that are relevant for all of the roles that the actor has in the collaborative project.

6.3.1 Project participants (PP)

Project participants are actors who participate in the project but have no formal ownership over it. They can be citizens, private companies, volunteers, and civil society organizations. They can also be participants from the public sector if they do not have any of the other roles described below. When selecting informants among the project participants, please make an effort to choose informants who represent the different project participant organizations/groups as much as possible, and to balance the number of interviews per project-participant type; for instance, in the case of a project where the project participants are one citizen group and one private company, an equal number of informants (or close to it) should ideally be interviewed from the citizen group and company.

6.3.2 Project facilitators (PF)

Project facilitators manage the day-to-day project operations. They typically act as middle-managers between project participants and project owners/funders/bureaucratic actors, and they accommodate the requests of all of these actors. Public sector organizations can act as project facilitators in collaborative projects, but projects can also be facilitated by e.g., consultancies, grassroots organizations, and NGOs.

6.3.3 Funders (F)

Funders are actors who provide funding and/or financing for the collaborative project (for an explanation of the conceptual distinction between funding and financing, see table 9.1. and figure 9.1. Source: Ansell, Sørensen, and Torfing, 2022). The funder role implies not playing an active part in the facilitation and/or implementation of collaborative project(s). However, if funders take on additional roles in such projects (e.g., the role of owner and/or project facilitators), taking these roles may lead them to play an active part as participants or in facilitation and/or implementation.

Table 9.1. The Conceptual Distinction Between Funding and Financing.

	Funding	Financing
Coverage	Specific developmental purpose	Investment in initial startup and operation of new solution
Endurance	Short-term (a couple of years)	Long-term (into foreseeable future)
Main sources	Government, donor institutions, corporate firms, community organizations, philanthropists, or crowds	Government, banks, or private investors
Regulatory status	Agreement	Contract
Pay back	No expectation that money is paid back	Money provided by financial institutions or investors is paid back with interest
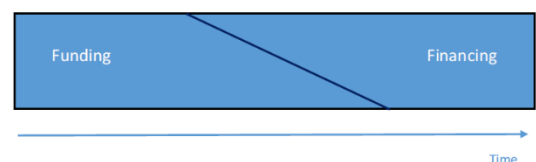
Fig. 9.1. The Combination of Funding and Financing Over Time.

6.3.4 Owners (O)

Project owners have ownership over the project in the sense that they are accountable for its success or failure. The project owner creates the project vision, sets objectives, secures funding, and acts as an ambassador for it. Project owners are typically actively involved in the initiation phase, where they set the direction and

assemble the team. Once the project is initiated, the project facilitator(s) (PF) typically take over the day-to-day project management and report back to project owner(s) on the project process.

6.3.5 Bureaucratic actors (BA)

Bureaucratic actors are street-level bureaucrats whose bureaucratic actions somehow affect collaborative projects. The bureaucratic actor role does not imply taking an active part in collaborative projects, but bureaucratic actors can do so if they take on other roles simultaneously.

6.4 Documents and their link to variables

GF	Key concept(s)	Relevant document(s)	Relevant document info
1. Perceived importance of biosphere conditions	*Biosphere conditions* are objective states of the natural world relating to atmospheric, terrestrial, and aquatic conditions. These conditions are discursively *constructed* and institutionally embedded at the international, national, and local levels, which in turn become a motivational force for collaborative problem-solving processes.	Global and national strategies that emphasize the severity of biosphere conditions (i.e., national sustainability policies, the SDGs) Environmental reports Articles by project partners Project descriptions (websites and presentation documents) Local newspapers Minutes from project meetings	How do the sustainability policies that the project participants draw on frame the severity of biosphere conditions? How are biosphere conditions framed in project websites, project presentations, project meetings, and local newspapers?
2. National and international legislation, programs, and formal goals	*National and international legislation, programs, and formal goals* are written laws, rules, policies, goals, and programs that convey more or less explicit expectations regarding the contribution to be made by local actors to finding new solutions or improve existing ones.	News reports on national and/or international sustainability legislation or campaigns National and/or international sustainability legislation, policies, and formal goals	What specific national and/or international sustainability legislation, policy programs, and/or formal goals are relevant for the project?
3. Relative openness of public governance paradigms	*Public governance paradigms* can be more open or more closed for collaborative problem-solving by means of decentralizing political responsibilities and tasks to relatively resourceful local political-administrative institutions capable of orchestrating collaborative problem-solving processes.	Local and regional strategies, white papers, and legislation on collaborative forms of governance involving citizens and local communities (if applicable) Plans for implementation of sustainability initiatives through collaborative processes	To what extent is collaboration with civil society mentioned in sustainability strategies and initiatives? How do laws and rules frame engagement with civil society? Are resources (e.g., financial, labor) awarded to collaborative projects?
4. Formalized institutional channels for citizen participation and	*Formalized institutional channels* involve any codified rules and laws that enable the regular occurrence of an action, such as civic participation or other instances of collective agency.	Local, regional, and/or national strategies regarding citizen participation Laws or formalized institutional channels for citizen participation on the local, regional, or national level	What formal (laws) institutional channels (enablers and obstacles) exist for citizen participation (e.g., referendum, citizen councils)?

GF	Key concept(s)	Relevant document(s)	Relevant document info
community mobilization			Do these institutional channels have any discernible influence on the project and its collaborative problem-solving processes?
5. Mechanism for ensuring top-down government and bottom-up social accountability	*Accountability mechanisms* are mechanisms for ensuring that the actors engaged in the collaborative problem-solving process are compliant with institutional norms, rules, or other informal requirements.	Project description and contracts Project time schedules Project evaluations	Are there any reporting mechanisms enshrined in the project description? Are there any requirements in the form of norms, rules, or other informal practices imposed on the project?
6. Strategic agenda-setting by means of translation	Effective *translation* entails a reshaping of the agenda to fit the purpose of local actors, a reinterpretation in light of local forms of knowledge, practices, and norms, and an alignment with local discourses, belief systems, and logics of appropriateness.	Project descriptions, evaluations, and meeting minutes Environmental reports on the project News articles reporting on the project	How are SDGs reframed to fit local goals? How are project goals reframed to meet the SDG requirements? Are there any news or environmental reports about SDGs and their relationship to the project?
7. Construction of narratives about successful multi-actor collaboration	*Positive narratives* are local stories about successful multi-actor collaboration that help convince actors regarding the necessity of local collaborative problem-solving processes.	Regional and municipal plans News articles about previous local collaborative projects Minutes from meetings	Are previous collaborative projects mentioned? If yes, how are they framed? What informal (norms, values, routines, traditions) institutional practices have shaped local-level citizen participation?
8. Building or harnessing institutional platforms and arenas	*Platforms* are relatively permanent institutional frameworks that are designed to scaffold collaboration by helping local actors to organize and innovate. They can be digital, organizational, or physical structures. They often do so by creating ad hoc *arenas*, which are spaces for	Project descriptions Digital platforms/arenas (e.g., Teams, Slack)	What documentation is provided about the use of digital platforms/arenas or physical venues for the collaborative problem-solving processes? What information is provided on how the daily project work is organized?

GF	Key concept(s)	Relevant document(s)	Relevant document info
	participation, communication, and joint action.		
9. Provision of access to blended financing	*Blended financing* uses public funds and development assistance strategically to improve the risk and return profile of investments through the provision of basic investments, grants, guarantees, equity, low interest loans, capped return schemes, etc.	Project descriptions, contracts, and budgets Funder reports Funder websites Meeting minutes from meetings with funders	Is there any information on the financing and funding structure of the project? What requirements accompany the funding and financing, such as compliance with requirements, inclusion of project components, etc. Do the funders report on any specific missions in relation to their funding and financing (particularly relevant for foundations and charities)?
10. The capacity to leverage support from authorities to enable local collaboration	*Leveraging support* entails the capacity to engage in close and continuous dialogue and, consequently, request support from public authorities to remove or mitigate obstacles for the collaborative project.	Meeting minutes or meeting observations from dialogues between governments and project participants	Is there a dialogue between the project participants and the (local/regional/national) government? If yes, to what extent and how does this seem to benefit the collaborative process?
11. Inclusion and empowerment of relevant and affected actors:	*Inclusion* refers to the implementation of measures to actively involve potentially marginalized actors in the collaborative process. *Empowerment* can be defined as capacity-building actions, interventions, and conditions that enable individual actors or groups to achieve a desirable outcome, which allows them to influence the collaborative processes. *Relevant actors* are public, private, and third-sector actors who possess important knowledge, skills, and resources, thus enabling them to contribute to understanding the	Project descriptions Meeting minutes from meetings and/or workshops with relevant and affected actors	To what extent and how are relevant and affected actors included in the collaborative process? To what extent and how are the perspectives and inputs of relevant and affected actors being put to use in the production of the green solution?

GF	Key concept(s)	Relevant document(s)	Relevant document info
	problem and designing and implementing a solution. *Affected actors* are those who, in addition to skills and resources, have valuable experiences with existing problems and solutions or will feel the impact of new solutions, and thus can help to identify local needs.		
12. Clarification of interdependence vis-à-vis common problem and joint vision	*Clarification of interdependence vis-à-vis common problem and joint vision* involves the recognition that all affected and relevant actors included in the collaborative process are needed to solve the project goals through a joint effort	Minutes from meetings Project plans	How are the respective competences and contributions of each group of relevant and affected actors framed in meetings or as part of the project plan?
13. Trust-building and conflict mediation	*Trust* is defined as the positive but uncertain expectation that other actors will refrain from exploiting a given situation to act opportunistically. *Interpersonal trust* is a matter of spurring social interaction between participants. *Institutional trust* is a matter of involving the participants in defining the set of rules, norms, and procedures for the project.	Observations from project meetings	Do the participants seem to know each other well on a personal level? Do they seem comfortable in providing their perspectives on the discussion points? If there are conflicts, how are they handled?
14. Use of experimental tools for innovation	Two innovation tools are central in collaborative problem-solving processes: *User-centered design* stresses the importance of accessing the knowledge and perspectives of those who will ultimately use the product, policy, or institution. *Prototyping* is a process of iteratively improving design based on continuous user feedback.	Meeting minutes/observation notes from meetings/workshops with relevant and affected actors	To what extent do the project facilitators use user-centered design and/or prototypes? How are these tools put to use?

GF	Key concept(s)	Relevant document(s)	Relevant document info
15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation)	*Process evaluation* seeks to evaluate the ongoing quality of collaboration so as to garner feedback that can be used to improve collaboration in a timely fashion. *Developmental evaluation* introduces critical diagnostic questions into the collaborative problem-solving process that encourage participants to address basic assumptions about the direction of the collaboration and to collect information on whether current understandings and objectives are "on the right track" and whether provisional solutions produce the expected results.	Project descriptions Project evaluations	Is the project under continuous evaluation or is it evaluated after the project ends? How often is the project evaluated and according to which parameters?
16. Exercise of facilitative leadership	*Facilitative leadership* is crucial for convening actors, facilitating collaboration, catalyzing creative problem-solving, and ensuring progression toward project completion.	Project descriptions Project evaluations News articles about the project	What is the assigned role of the project facilitator, and what prior experiences (if available) do they have with facilitating similar projects?

6.5 Interview guide

Introductory questions
The interview guide consists of an initial battery of introductory questions followed by three layers of questions organized around related issues. We suggest you ask the introductory questions and then move to one of the three layers.   *Please feel free to adjust the formatting and style according to your personal preference.*   What is the background, history, and context of the project? What are the project's aims, and which sustainability problems does it seek to address? (Layer 1: structural conditions and resource-building for collaborative problem-solving → GFs 1, 6, 4, 7, 12)   Which international, national, regional, and/or local public agencies and authorities participate in this project directly or indirectly? (Layer 2: politics of scale → GFs 2, 3, 9, 5, 10)   Who are the participants in the project's initial phase, and how were they selected? (Layer 3: participation, collaboration, and practices → GFs 8, 11, 13, 14, 15, 16)   • How often do you meet in the project? Do you communicate with partners between meetings? Has the meeting/contact frequency changed?   • Did the composition of participants change over time? What is the current participation?   • Who do the different participants represent?   • How do the actors share knowledge, coordinate activities, and collaborate to manage their differences while solving joint problems?   • Who leads the collaboration? Is it a lead actor, a group of key actors, or all actors together through plenary meetings?   • How do the actors share knowledge, coordinate activities, and collaborate to manage their differences while solving joint problems? Is there mostly consensus or conflicts between the actors engaged in the collaboration, and how are the latter handled?

GF	Research question(s)	Interview questions	Interview notes
1. Perceived importance of biosphere conditions	What perceptions of the biosphere conditions do the actors draw on to explain why they started the collaborative problem-solving process?	Did anybody in or around the project refer to climate, environmental, and/or sustainability problems in relation to the project at any point in time? (PP, PF, O) Can you give one or more examples of how the perception of these climate, environmental, and/or sustainability problems have played a consistent role	

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		throughout the project? (PP, PF, O)	
		Has the consistent role of climate, environmental, and/or sustainability problems in the project served as a motivational force for collaboration? (PP, PF, O)	
6. Strategic agenda-setting by means of translation	How do project participants translate the green SDGs to make them attractive, productive, and meaningful to their local contexts, and how does this translation work to drive green transition projects?	Does the local agenda for the collaborative project refer to one or more of the UN SDGs? (PP, PF, O) Has the relevance of the SDGs been enhanced by linking them to local problems and goals (or vice versa)? Please give one or more examples of how. (PF, O) Have references to the UN SDGs and efforts to link them to local problems and goals (or vice versa) helped to attract local actors and motivate their collaboration in the project? (PF, O)	
4. Formalized institutional channels for citizen participation and community mobilization	How do legal, institutional, and organizational rules and channels for local citizen participation and community mobilization support the involvement of lay actors in collaborative problem-solving processes?	Are there formal policies, rules, or mechanisms that permit or mandate the participation of societal actors such as NGOs, communities, and citizens in public governance? Can you name examples of such formal channels that were in effect over the last 3–5 years? (PP, PF, O, BA)	

		Have these formal channels for participation played a significant role in the sense that the public actors recognize and use them to mobilize other actors? (PP, PF, O, BA) How have the formal channels, laws, or venues supported the project's collaborative process? Could you give an example of how this occurs (if applicable)? (PP, PF, O, BA)	
7. Construction of narratives about successful multi-actor collaboration	To what extent and how do positive (or negative) local narratives about collaboration entice local actors to participate in and commit to collaborative problem-solving processes?	Are you familiar with any local stories or experiences about collaboration between public and private partners in your local area? (PP, PF, O, BA) Do you discuss these stories and experiences in the project together? (PP, PF, O, BA) Do the references in the project to local stories and experiences with collaboration support the local collaborative process in and around the project? (PP, PF, O)	
12. Clarification of interdependence vis-à-vis common problem and joint vision	To what extent and how is there a perceived interdependency between the actors involved in the collaborative problem-solving process, and how do	Do the participants consider themselves dependent on each other's resources and contributions? (PP, PF, O) Have there been any measures implemented to ensure that all project participants feel mutual dependence or, at least, attempts	

	leaders attempt to clarify, strengthen, and create interdependencies in order to enable collaborative processes?	to clarify this interdependence? (PP, PF, O) Please give examples. Have references to the mutual dependence between the participating actors supported your collaboration? Please elaborate on how. (PP, PF, O)	
2. National and international legislation, programs, and formal goals	To what extent do national and international sustainability legislation, programs, and formal goals positively/negatively affect collaborative problem-solving processes and their capacity for developing solutions to the sustainability issue at hand?	Are you aware of any national and/or international sustainability laws, goals, strategies and/or campaigns relevant to your project? Can you give some concrete examples? (PP, PF, O) *(Note for the interviewer: if you found documents describing national laws/strategies/goals/campaigns that might be relevant, you can ask project facilitators if they are familiar with it/them).* Have you adjusted the form and content of the project according to these sustainability policies, laws, goals, etc., either due to inspiration or a wish to comply? (PP, PF, O) To what extent do you think that project adjustments to these sustainability laws, goals, etc. have supported your collaborative project? (PP, PF, O)	
3. Relative openness of public	To what extent and how does the bureaucratic	Are the local and/or regional government institutions open to	

governance paradigms	apparatus create or inhibit opportunities for actors to engage in collaborative problem-solving processes on the level of local government?	input from societal actors? (PF, O, BA) Does the local and/or regional government actively offer support for your project to solicit or encourage inputs from non-state actors; for example, by arranging events, campaigns, etc. on behalf of the project? (PP, PF, O, BA) Has the active support of local and/or regional government institutions helped to strengthen your collaborative process? Please give examples of how. (PP, PF, O)	
9. Provision of access to blended financing	Does the project have access to blended financing? If yes, to what extent and how does this help to spur the collaborative problem-solving process?	How is the development of new green solutions in the project funded and how is the implementation of eventual solution(s) financed? Please mention all the different sources of funding and financing. (PF, O, F) What kind of requirements do the different sources of funding and financing impose on the project, and how important are they for the project operations? (PF, O, F) How has the combination of different sources of funding and financing shaped the collaborative processes between	

		the actors in the project? (PP, PF, O)	
5. Mechanism for ensuring top-down government and bottom-up social accountability	How are the interests of service users, relevant and affected actors secured by accountability mechanisms (downward accountability)? How does downward accountability interplay with accountability mechanisms towards public authorities and sponsors (upward accountability)?	Are there any expectations from the government and/or local citizens that the project must regularly account for its work, progression, and/or results? Please explain how this works (PF, O, BA) Does the project routinely report on its activities and results upward to the government and downward to local citizens and communities? (PF, O, BA) Have these channels of feedback helped to reinforce the collaboration between the actors in the project? Please give one or more examples. (PF)	
10. The capacity to leverage support from authorities to enable local collaboration	How does the interaction between governments (at different levels) and local actors convert into support that enables the collaborative problem-solving process?	Is the local project able to get help from higher-level authorities to solve emerging problems and challenges? (PP, PF, O, BA) Do you reckon that the public authorities are consistently available to support the project? (PP, PF, O, BA) Has access to help from higher-level authorities supported the collaborative efforts of your project? Please explain what this access means to your project. (PP, PF, O, BA)	

8. Building or harnessing institutional platforms and arenas	To what extent and how do platforms enhance the collaborative development of green solutions by providing arenas and infrastructural support that enhance the collaborative problem-solving processes?	Are there any supportive structures or mechanisms such as digital platforms and/or physical meeting points for the collaborative process? (PP, PF, O) To what extent do you routinely use these supportive structures and mechanisms in your collaborative problem-solving? (PP, PF, O) From your perspective, does the use of digital platforms or physical meeting points positively affect your local collaboration? If yes, please give examples of how. (PP, PF, O)	
16. Exercise of facilitative leadership	To what extent is there a clear and visible exercise of leadership and is it exercised in a manner that supports collaboration?	Does the collaborative project have formal leadership? If yes, please name the formal leading actor(s) of the project. (PP, PF, O) Does the formal leader(s) clearly attempt to lead meetings and drive the collaborative problem-solving process forward? (PP, PF, O) Is the formal leader(s) successful in driving the collaborative problem-solving process forward by enabling collaborative interaction between the project participants? (PP, PF, O)	
11. Inclusion and empowerment	To what extent and how are relevant and affected actors	Has the project tried to include all relevant (those with relevant knowledge, skills, and resources)	

of relevant and affected actors	empowered in the collaborative problem-solving process, and to what extent and how does this help to harness their experiences, ideas, competences, and resources?	and affected actors (those who are affected by problems and new solutions)? (PP, PF, O) Has the project leadership made any effort to grant all actors, especially those perceived as potentially marginalized, an active voice in the project; that is, to include routines that ensure that all voices are heard? (PP, PF, O) How have the included potentially marginalized actors been heard, and how has this affected the collaboration in the project? Please give examples. (PP, PF, O)	
13. Trust-building and conflict mediation	To what extent and how is there interpersonal and institutional trust in the project? How are conflicts handled in the project?	Is it important for the project that the participants trust each other and that conflicts are reduced? (PP, PF) Has the project leadership made dedicated efforts in the form of systematic measures, events, or routines in the project aimed at building trust and/or mediating conflicts between the participants? Please give examples. (PP, PF) Has the project collaboration benefitted from efforts to build trust or to overcome emerging conflicts based on these	

		dedicated efforts? Please give examples. (PP, PF)	
14. Use of experimental tools for innovation	Is a user-centered design and/or prototypes used in the project? How does this affect the collaborative problem-solving process?	Does the project use provisional solutions (prototypes/mock-ups) and/or user-centered design (to solicit feedback from end users)? (PP, PF, O) Does the building and testing of provisional solutions (prototypes/mock-ups) and/or the soliciting of inputs from end users influence the process of designing the project solution? (PP, PF, O) Have adjustments in the design of the project solution, based on these experimental methods, in some way improved the project's collaborative process? Please give examples. (PP, PF, O)	
15. Ongoing critical self-reflection and learning (e.g., developmental evaluation)	To what extent and how does the project use critical self-reflection and learning in the form of process and/or developmental evaluation?	Have you evaluated the project one or more times during its lifespan? If so, how? (PP, PF, O, F) Do you use the inputs from the evaluations in your collaborative problem-solving process? Please provide concrete examples. (PP, PF, O, F) Are there examples of how project evaluation and critical scrutiny of your problem-solving efforts have improved your collaboration? (PP, PF, O, F)	

6.6 List of informants

The first line has been filled out to provide an example.

Case title:

Project role	Name	Job title	Organization	E-mail	Telephone	Interview date	Interview length	Signed DoC[6]	Comments
Project facilitator	Bob Jensen	Consultant	B-consult	bob@bconsult.com	0000000	15.02.23	00:56	X	

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[6] DoC = *Declaration of Consent*

6.7 Observational data collection guide

GF	Key concept(s)	Observations
1. Perceived importance of biosphere conditions	*Biosphere conditions* are objective states of the natural world relating to atmospheric, terrestrial, and aquatic conditions. These conditions are discursively *constructed* and institutionally embedded at the international, national, and local levels, which in turn become a motivational force for collaborative problem-solving processes.	How are biosphere conditions framed in discussions during project meetings/workshops?
2. National and international legislation, programs, and formal goals	*National and international legislation, programs, and formal goals* are written laws, rules, policies, goals, and programs that convey more or less explicit expectations regarding the contribution to be made by local actors to finding new solutions or improve existing ones.	What written sustainability laws, rules, policies, goals, and programs (if any) are discussed during project meetings/workshops? According to the discussions, how do these influence the project in question?
3. Relative openness of public governance paradigms	*Public governance paradigms* can be more open or closed for collaborative problem-solving by means of decentralizing political responsibilities and tasks to relatively resourceful local political-administrative institutions capable of orchestrating collaborative problem-solving processes.	To what extent and how is the (national governmental) administrative apparatus discussed as an enabler for collaborative problem-solving processes? What role do bureaucratic actors take in project meetings/workshops?
4. Formalized institutional channels for citizen participation and community mobilization	*Formalized institutional channels* involve any codified rules and laws that enable the regular occurrence of an action, such as civic participation or other instances of collective agency.	Do the participants draw upon existing institutional channels for citizen participation as part of their collaborative processes?
5. Mechanism for ensuring top-down government and bottom-up social accountability	*Accountability mechanisms* are mechanisms for ensuring that the actors engaged in the collaborative problem-solving process are compliant with institutional norms, rules, or other informal requirements.	How does communication with relevant and affected actors—as well as accountability toward public authorities and sponsors—take place? What other practical measures do the actors take to receive feedback from the public authorities and/or local citizens not mentioned in interviews? Does the local community have the opportunity to provide feedback to the project during meetings?

6. Strategic agenda-setting by means of translation	Effective *translation* entails a reshaping of the agenda to fit the purpose of local actors, a reinterpretation in light of local forms of knowledge, practices, and norms, and an alignment with local discourses, belief systems, and logics of appropriateness.	How are the SDGs and other sustainability goals framed and discussed as locally relevant during project meetings/workshops? How are local, co-created solutions framed as contributing to the SDGs and other sustainability goals?
7. Construction of narratives about successful multi-actor collaboration	*Positive narratives* are local stories about successful multi-actor collaboration that help convince actors of the necessity of local collaborative problem-solving processes.	Are previous experiences with collaboration in the local area referred to during project meetings/workshops? Do civic participants draw upon narratives of parallel or past instances of citizen participation and community mobilization during the collaborative process? And how do such narratives shape the current project?
8. Building or harnessing institutional platforms and arenas	*Platforms* are relatively permanent institutional frameworks designed to scaffold collaboration by helping local actors to organize and innovate. They can be digital, organizational, or physical structures. They often do so by creating ad hoc *arenas*, which are spaces for participation, communication, and joint action.	Which platforms and arenas are being used prior to, during, and after project meetings and/or workshops?
9. Provision of access to blended financing	*Blended financing* strategically uses public funds and development assistance to improve the risk and return profile of investments through the provision of basic investments, grants, guarantees, equity, low interest loans, capped return schemes, etc.	According to discussions during project meetings/workshop, how is the project funding structured?
10. The capacity to leverage support from authorities to enable local collaboration	*Leveraging support* entails the capacity to engage in close and continuous dialogue and, consequently, request support from public authorities to remove or mitigate obstacles for the collaborative project.	Which government actors (from different levels of government), if any, are involved in project meetings/workshops? Do representatives of the public authority consistently attend meetings and are available to offer support? How does the dialogue between these government actors and local actors seem to enable the collaborative problem-solving process?
11. Inclusion and empowerment of relevant and affected actors:	*Inclusion* refers to the implementation of measures to actively involve potentially marginalized actors in the collaborative process. *Empowerment* can be defined as capacity-building actions, interventions, and conditions that enable individual actors or groups	To what extent and how are relevant and affected actors included in the collaborative problem-solving process during project meetings/workshops; e.g., are they asked to perform specific tasks or granted time to speak?

	to achieve a desirable outcome, which allows them to influence the collaborative processes. *Relevant actors* are public, private, and third-sector actors who possess important knowledge, skills, and resources and can thus contribute to understanding the problem and designing and implementing a solution. *Affected actors* are those who, in addition to skills and resources, have valuable experiences with existing problems and solutions or will feel the impact of new solutions and can thus help to identify local needs.	To what extent are the experiences, ideas, competences, and resources of these relevant and affected actors promoted in these meetings/workshops and beyond?
12. Clarification of interdependence vis-à-vis common problem and joint vision	*Clarification of interdependence vis-à-vis common problem and joint vision* involves the recognition that all affected and relevant actors included in the collaborative process are needed to solve the project goals through a joint effort	How do interdependencies between project actors seem to materialize in project meetings/workshops? How do the different participants and stakeholders actively refer to or draw upon the resources or competences others?
13. Trust-building and conflict mediation	*Trust* is defined as the positive but uncertain expectation that other actors will refrain from exploiting a given situation to act opportunistically. *Interpersonal trust* is a matter of spurring social interaction between the participants. *Institutional trust* is a matter of involving the participants in defining the set of rules, norms, and procedures for the project.	How are conflicts and discussions managed in project meetings/workshops? To what extent and how are all the participating actors involved in defining the rules, norms, and procedures for the project during project meetings/workshops?
14. Use of experimental tools for innovation	Two innovation tools are central in collaborative problem-solving processes: *User-centered design* stresses the importance of accessing the knowledge and perspectives of those who will ultimately use the product, policy, or institution. *Prototyping* is a process of iteratively improving design based on continuous user feedback.	If relevant, how are user-centered design and/or prototypes used in the project meetings/workshops?
15. Ongoing critical self-reflection and learning (e.g., developmental evaluation)	*Process evaluation* seeks to evaluate the ongoing quality of collaboration so as to garner feedback that can be used to improve collaboration in a timely fashion. *Developmental evaluation* introduces critical diagnostic questions into the collaborative problem-solving process that encourage participants to address basic assumptions about the direction of the collaboration and to collect information on whether current understandings and objectives are "on the right track" and whether provisional solutions produce the expected results.	To what extent and how do critical self-reflection and learning take place during project meetings/workshops? How often does the project use some sort of evaluation? How are evaluations and/or critical self-reflection and learning put to use?

16. Exercise of facilitative leadership	*Facilitative leadership* is crucial for convening actors, facilitating collaboration, catalyzing creative problem-solving, and ensuring progression toward project completion.	To what extent is there a clear and visible exercise of leadership? Is the leadership exercised in a manner that motivates actors to engage actively in the collaborative problem-solving process?

6.8 Survey for the outcome variable

Introductory information (free text)
This introductory information will be shared with the following researchers in the GOGREEN the research project: Benedetta Trivellato and Daniela Cristofoli, University of Milano-Bicocca. Data will be used with an aim to publish in recognized scientific journals and edited volumes. Data will, however, be used in such a manner that the readers of the publications cannot identify you as a participant in the research project.

Project name	
Name of affiliated organization/association/citizen group	

1. The project:	Yes	No
…did not produce any green transition solution		
…is expected to produce/produced a green transition solution aiming to avoid a worsening in the status quo		
…is expected to produce/produced a green transition solution aiming to maintain the status quo		
…is expected to produce/produced a green transition solution aiming to improve the status quo		

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
1. Problem-solving mobilized different experiences, and/or ideas and/or forms of knowledge to develop new perspectives							
2. Through the collaborative problem-solving process, different							

experiences and/or ideas and/or forms of knowledge have been mobilized to search for unconventional solutions							
3. The collaborative problem-solving process mobilized different experiences, and/or ideas and/or forms of knowledge to search for solutions that go beyond standard/text-book solutions							
4. The co-created solution breaks with established practices							
5. The co-created solution disrupts							

conventional wisdom						
6. The co-created solution offers new ideas to address the green transition problem						
7. I'm supportive of the co-created solution						
8. I'm content with the overall collaborative process of the project						
9. I feel the multi-actor collaboration process was a prerequisite for the success of the project						
10. I'm satisfied by the results of the co-creation effort in terms of expected impact on the welfare of the community						

11. The collaborative interaction in the project has led to an innovative solution						
12. The actors involved in the project are engaged in collaborative interaction that stimulated creative problem-solving						
13. The co-created solution meets the proposed goals of the project						
14. The co-created solution will be durable and robust in the long run						
15. The co-created solution is expected to significantly improve						

sustainability for the whole community							

6.9 Checklist for keeping track of the data collection progress of GOGREEN case studies

Case: _____

Data about	How far are we? (started, in progress, nearly done, finished)
Background, history, and context of the project	
Content of project and its link to sustainability development goals (SDGs)	
What public actors from different levels are involved?	
Who are the participants? How do they meet and collaborate?	
1) Perceived importance of biosphere conditions	
2) Supportive legislation, programs, and formal goals	
3) Relative openness of public governance paradigms	
4) Formal institutional channels for citizen participation and community mobilization	
5) Mechanism for ensuring top-down government and bottom-up social accountability	
6) Strategic agenda-setting by means of translation	
7) Construction of narratives about successful multi-actor collaboration	
8) Building or harnessing institutional platforms and arenas	
9) Provision of access to blended financing	
10) The capacity to leverage support from authorities to enable local collaboration	
11) Inclusion and empowerment of relevant and affected actors	
12) Clarification of interdependence vis-à-vis common problem and joint vision	
13) Trust-building and conflict mediation	
14) Use of experimental tools for innovation	
15) Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation)	
16) Exercise of facilitative leadership	
Survey about outcomes	
Reports about outcomes	

6.10 Scoring schema and guidelines for each GF

The scoring schema provides instructions and examples for how to score each GF. It can be used as an intermediate output to note the scoring for each GF and can thereafter be transposed into the case report template in **Appendix 6.11.** Each scoring example follows a predictable pattern by (a) clarifying the **meaning of the GF**, (b) providing examples of **what evidence would qualify as corresponding to each of the four scores**, (c) discussing boundary conditions between scores by **outlining examples that do not meet a particular score**, and (d) **potential sources of data/evidence** that are relevant for scoring. The scoring schema should not be viewed as an exhaustive list of examples, as we cannot account for all the theoretically possible permutations of supporting and conflicting evidence. In instances where the scoring cannot be determined according to the scoring schema or the application of your basic intuition, we recommend that you reach out to your contact person to solicit a second opinion. In some instances, the inability to establish a score can also be due to the lack of data, which would require a further round of data collection that is targeted around the specific GFs missing tie-breaking data/evidence.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
1. Perceived importance of biosphere conditions	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** Biosphere conditions (e.g., climate, environment, biodiversity issues) were not a reason for starting the project (in this case, the project should not be included in GOGREEN) **Presence (0.33)**: Biosphere conditions have been referred to in relation to the project **Significance (0.66)**: Biosphere conditions play a significant and continuous role in the project **Support (1):** Biosphere conditions have been a motivational force (to collaborate) for a majority of stakeholders	**Absence (0)** can be established if neither interviews nor project documents include any reference to biosphere conditions. **Presence (0.33)** can be established by examining the project description accompanied by interview questions, which will usually hint at the possible consideration of biosphere conditions. Insofar as the case studies have been chosen based on the criteria that they meet one of the green UN SDGs, most cases will probably score at the very least presence. However, presence does not necessarily result in the significance of biosphere conditions, as such considerations regarding biosphere conditions might have played a temporary role but subsequently been overshadowed by other factors (e.g., financial, political). **Significance (0.66)** can be established in project descriptions and interview statements if they signal that biosphere conditions have played a consistent and continuous role in the project. Observations from meetings can also be relevant, but insofar as your attendance will be limited, it will be difficult to conclude if discussions of biosphere conditions play a consistent and continuous role. Significance does not result in support if it has not supported the collaborative problem-solving processes; e.g., if biosphere conditions do not play a motivational factor for a majority of stakeholders, as they are primarily moved by other considerations (financial, political, etc.). **Support (1)** will require that different informants uniformly report in the interviews and documents, or from observations from meetings that biosphere conditions function as a motivational force for collaboration; e.g., if different stakeholders find it urgent that

Governance factor	QCA scoring	Scoring instructions	Scoring examples
			biosphere conditions must be addressed and collaboration on such issues is the vehicle to this end.
2. National and international legislation, programs, and formal goals	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** No international and/or national sustainability legislation, programs, nor formal goals are relevant for the sustainability aspects of project **Presence (0.33)**: Existing national and/or international sustainability legislation, programs, and/or formal goals are relevant for the project, but they do not carry any significance for the project **Significance (0.66)**: The project has to some degree been adjusted to better fit existing sustainability legislation, programs, and/or formal goals **Support (1):** Existing sustainability legislation, programs, and/or formal goals have supported the sustainability aspects of the project	**Absence (0)** is established if neither informants nor project description state that any national and/or international sustainability legislation, programs, or formal goals are relevant for the project. If the researcher is aware of specific laws that are relevant, they should have inquired about their knowledge thereof during the interviews to ensure that they are not omitting any information about their knowledge of such sustainability legislation, programs, and formal goals. **Presence (0.33)** will be initially identified through documents to establish if documents exist outlining sustainability legislation, programs, campaigns, laws, guidelines, and/or rules. However, they must thereafter also be recognized by the project participants (particularly the project facilitator). Presence does not result in significance if the project has not been adjusted to any sustainability legislation, programs, and formal goals, which might be the case if they are vague or have no concrete significance for the project apart from a general declaration of political/moral support from the authorities. **Significance (0.66)** can be identified through interviews, especially with project facilitators, who will be able to establish whether the project has been partially adjusted to fit sustainability legislation, programs and/or formal goals. Project descriptions will also sometimes signal how the project builds on such existing legislation, programs, or goals. Significance does not result in support if the adjustments have no direct influence on the collaborative aspects of the project; e.g., if sustainability legislation has no discernable relevance for collaboration. **Support (1)** is established primarily through interviews when sustainability legislation, programs, and/or formal goals have supported the collaborative problem-solving processes of the project through different types of support (political, financial, legal), such as providing a mandate to solve sustainability issues through collaborative problem-solving processes, providing monetary support earmarked for sustainability projects, and so on; e.g., the EU renewable energy directive has an aim to stimulate local energy communities, which are based on local collaboration.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
3. Relative openness of public governance paradigms	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**No presence (0):** The local and/or regional government is not open to inputs from non-state (societal) actors in solving perceived local problems **Presence (0.33)**: The local and/or regional government is open to inputs from non-state (societal actors) in solving perceived local problems **Significance (0.66)**: The local and/or regional government actively creates initiatives on behalf of the project that facilitate the solicitation of inputs from non-state (societal actors) in solving perceived local problems **Support (1):** The initiatives created by local and/or regional government on behalf of the project have improved the project's collaborative problem-solving processes	**Absence (0)** is established if informants state that the local and/or regional government is not open to input from local actors. For most case studies, it is unlikely that this GF will be absent altogether, as co-creation projects presuppose a rudimentary willingness from local governments to solicit inputs from the local community. However, there are several cases where local governments are weak and therefore lack the capacity to solicit inputs from the local community. In such instances, co-creation projects can nonetheless exist with the passive and very limited support of local governments participating in the margins of the project. **Presence (0.33)** can be established through local/regional strategies and observations documenting how the government provides channels for civil society inputs. Usually, if the local government actively participates in the project, this is already indication of openness to inputs on a fundamental level. Interview data from bureaucrats involved in the project can also provide evidence for the general openness of the public governance paradigm. Presence can be established without significance if the absence of barriers for collaborative problem-solving is not supported by any active support for collaboration; for instance, in the form of initiatives on behalf of the project to solicit inputs from non-state actors. **Significance (0.66)** requires that the local and/or regional government actively creates initiatives on behalf of the project that can solicit input from non-state actors. For instance, they can contact local citizens, make advertisements for the project, and so on. Significance can be established through interview statements with bureaucratic actors and/or project facilitators who describe such initiatives, as well as project websites, newsletters, and other related documents. Significance without support can be found if the initiatives created by the local and/or regional government are insufficient. For instance, the local government can initiate a recruitment meeting to attract more participants to the project, but they do not spend the needed resources for people to show up. **Support (1)** can be established if the local and/or regional government initiatives have discernibly supported the collaborative processes; for instance, by attracting new participants to the project or strengthening the collaboration between existing participants.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
4. Formal institutional channels for citizen participation and community mobilization	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** There are no formal channels, laws, or venues that facilitate citizen participation and community mobilization at the local, regional, or national level **Presence (0.33)**: Formal channels, laws, or venues that support civic participation at the local, regional, or national level exist **Significance (0.66)**: Formal channels, laws, or venues are integrated in the project's collaborative process **Support (1):** Formal channels, laws, or venues have helped to improve the project's collaborative process	**Absence (0)** refers to cases where there are no recorded examples or discernible institutional channels through which different societal actors have participated in public governance. This is more likely to be the case in authoritarian states where citizen inputs are severely curbed. **Presence (0.33)** can be established through documents identifying specific formal institutional channels for community mobilization and citizen participation, such as referendums, the right to protest, and platforms for citizen involvement, such as petitions and citizen meetings. Interviews can also be pertinent to establish local instances of such institutional channels. **Significance (0.66)** requires that existing formal institutional channels are integrated with the current project, shaping the collaboration. Perhaps the project draws on practices or routines used in referendums in the collaborative process or emulates citizen meetings. Project descriptions might outline if the co-creation project draws on any such existing formal institutional channels. Alternatively, interviews with (particularly) the project facilitator might also provide evidence. Although such existing formal institutional channels are integrated in the co-creation project, they do not necessarily have the potential capacity to support collaborative problem-solving processes if they are not properly supportive or have no relevance for the project. **Support (1)** implies that the integration of these existing formal institutional channels within the project create a discernible improvement in its collaborative processes, such as familiarity with practices related to community mobilization and norms surrounding collaboration. Interview data is the best way to establish if these integrated channels exist, as informants can evaluate if they can think of actual instances in which they have been helpful for the collaborative processes of the project.
5. Mechanism for ensuring top-down government and bottom-up social accountability	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** No formal (administrative requirements) or informal demands (public expectations) from public authorities and/or local citizens to account for the work, progression, and/or results of the project	**Absence (0)** can be established if both project descriptions and interviews with the project facilitator reveal that the project involves no accountability mechanisms toward either public authorities or local citizens in the form of reporting on the project activities, operations, and progress. **Presence (0.33)** can be identified in the project description, which outlines the project requirements together with its commitment to accountability. Interviews with the project facilitator will most likely corroborate if such requirements or expectations to maintain communications channels with the local community or government exist. Presence does not imply significance if such accountability mechanisms are not

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		Presence (0.33): The project must comply with any formal (administrative requirements) or informal demands (public expectations) from public authorities and/or local citizens to account for the work, progression, and/or results of the project **Significance (0.66)**: The project routinely accounts for the work, progression, and/or results of the project with the local government or community. **Support (1):** These accountability mechanisms and the feedback they generate are actively utilized to support the project's collaborative problem-solving process	routinized and institutionalized in the project. Concretely, it would entail that there might be some attempts by the projects to communicate with the local government and community, but nothing systematic that yields significance. **Significance (0.66)** requires that the responsiveness to formal or informal requirements/demands is routinized and forms an integrated part of the project. From the project descriptions or cognate documents, codified practices will be stated as a sign of routinized behavior. However, there is naturally a chance that documents are not practiced in reality, so this should be corroborated through interviews affirming that such routines exist. Significance does not result in support if such accountability mechanisms are not used as a source of feedback to improve the collaborative problem-solving processes. The communication with the local government and community might thus be superficial, as they only do it to appease these stakeholders rather than to use their feedback substantively. **Support (1**) implies that these routinized efforts to account for the work, progress, and/or results of the projects have improved the broader collaborative processes. Interview data is the most likely source of data to establish support, as informants can inform us about how communication, feedback, and other channels of responsiveness have solved specific problems in the collaborative problem-solving processes; e.g., how the dialogue with the local communities or public authorities have created a more cooperative environment, support for the project, pre-emptively address concerns from concerned stakeholders, etc.
6. Strategic agenda-setting by means of translation	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The local agenda for the project is not shaped by any of the UN SDGs **Presence (0.33)**: The local agenda for the project is shaped by one or more of the UN SDGs **Significance (0.66)**: The SDGs have been changed/redefined to better match local problems and goals (or vice versa)	**Absence (0)** can be identified if the project is in no way shaped or inspired by the UN SDGs, which is corroborated through interviews with informants or the project description. Ideally, there should be no reference to the UN SDGs in both sources of data, as the omission from one source is not necessarily an accurate representation of absence. **Presence (0.33)** can be established by examining project descriptions and cognate documents that make a connection to the UN SDGs as a source of inspiration (in any sense). It can be corroborated by interview or observational data, as informants can report on such references or if they appear in project meetings. There can be loose, off-hand references to the UN SDGs without them mattering substantively to the project, which would imply presence but not significance.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		Support (1): References to the SDGs and efforts to match them to local problems and goals have attracted local actors and motivated them to participate in the project	**Significance (0.66)** requires that the SDGs have been actively adapted (translated) to local contexts, which would be evident in project descriptions, news reports, or interviews. In other words, the project must be reinterpreted through the lens of the SDG agenda. Alternatively, it is also possible for the translation process, whereby the local problems are reformulated to match the SDG agenda. Significance does not necessarily imply support, as the translation of the SDGs has not helped to attract or appeal to local actors. Perhaps the participants do not care about the SDGs altogether, although they may be acquainted with them.

Support (1) suggests that the translation of SDGs to local problems has the capacity to support the collaborative problem-solving processes of the project, as it either has mobilized local actors or motivated other actors involved in the process. Both interviews and observations can possibly establish how actors show more enthusiasm because they support the SDGs; e.g., if informants report being motivated to participate in the project due to its links to the SDGs. |
| 7. Construction of narratives about successful multi-actor collaboration | ☐ 0
☐ 0.33
☐ 0.66
☐ 1 | **Absence (0):** Informants have no positive experience with multi-actor collaboration

Presence (0.33): Informants have positive experiences with multi-actor collaboration

Significance (0.66): Informants collectively draw on narratives/ positive experiences with multi-actor collaboration in the project

Support (1): The positive experiences with multi-actor collaboration that project participants collectively draw upon become sources of collective motivation or rallying points for the collaborative | **Absence (0)** can be established through interviews if informants report that they cannot think of any positive experiences with multi-actor collaboration. As you will most likely not get uniform responses from all informants, the general threshold for absence is if more than half of all stakeholders (note: not the amount of people interviewed, as you might interview multiple people from the same stakeholder group) express they have no experience with multi-actor collaboration. Observations and documents have limited use for establishing absence, as the lack of any active references to such multi-actor collaboration narratives does not suffice as negative evidence against presence.

Presence (0.33) is primarily uncovered through interviews, as we need the actors in the project to actively report on their subjective experiences on prior cases of multi-actor collaboration in its broadest sense. Local newspaper articles might also reveal that multi-actor collaboration has taken place in the local community, although it is not guaranteed that the informants have direct experience with them. Consequently, they must still be corroborated directly by the informants interviewed. Furthermore, presence, as opposed to significance, refers to instances in which such positive experiences are held by individuals but not shared within the collaborative processes of the project.

Significance (0.66) can draw on direct reports from informants on how the reference and discussion to past positive experiences with multi-actor collaboration are leveraged |

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		problem-solving processes of the project	in the collaborative problem-solving process. For significance to be established, individual experiences must be aggregated into a collective narrative and form the basis of inter-subjectively held narratives about multi-actor collaboration. To this end, observations can corroborate the interviews if such positive experiences manifest during meetings, site visits, and other social events where project participants gather. Significance does not result in support if these narratives do not play a supportive role in collaboration; e.g., if people are familiar with these inter-subjectively held narratives but do not feel particularly connected to them. They can thus appear as slogans lacking reflexive engagement. **Support (1)** can primarily be established through interviews if informants self-report that these narratives about successful multi-actor collaboration increase their motivation to participate and support collaborative processes in one way or another. If a majority of stakeholders report increased motivation, it is indicative of support. Examples of evidence for support could be increased willingness or motivation to invest time and energy in the project, improved ease of collaboration between different stakeholders, who refer to such positive experiences and narratives, and so on.
8. Building or harnessing institutional platforms and arenas	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The project uses neither digital platforms nor physical venues **Presence (0.33)**: The project uses digital platforms and physical venues **Significance (0.66)**: Digital platforms and physical arenas are actively used in the collaborative problem-solving process, and routines and measures are employed that influence collaborative problem-solving processes **Support (1):** The use of digital platforms and physical arenas has the capacity to enable or	**Absence (0)** requires no explicit physical venues or platforms to be used as part of the project. This would imply that when they presumably meet, they do so inconsistently at ad hoc meeting places that do not offer any facilities to enable collaboration. **Presence (0.33)** can be identified through project descriptions, which will usually state if there is any shared venue or space for gathering as part of the collaborative processes of the project. Informants will usually report with ease during interviews if such digital platforms or physical venues exist. Observations from attending such meetings will also give direct experience of said physical venues or digital platforms. Presence does not result in significance if these platforms are reported to exist but are not systematically used; e.g., there might be a physical gathering point that has formally been agreed upon as the meeting spot, which is available for use but underutilized in practice because of a lack of routinization. **Significance (0.66)** differs from presence because "building or harnessing" such platforms and arenas implies that specific institutional practices, routines, and norms are leveraged in these digital platforms and physical venues to facilitate the collaborative processes. Significance can be established through interviews with project facilitators, who should be cognizant of specific institutional practices, routines, and norms embedded in the use of such platforms or venues. Project participants might not

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		support the problem-solving processes.	be able to report on such institutional elements because they can be tacit or taken for granted. Project descriptions might also outline specific initiatives implemented as part of such venues or platforms to foster collaboration. Finally, local researchers could corroborate if such institutional elements reported by project facilitators indeed exist by attending meetings. Significance does not result in support if the routines institutionalized around the use of the physical venue or digital platforms do not support collaboration; for instance, a project can be using (a) an old, local community house that has insufficient space and poor acoustics, (b) Microsoft Teams but not everyone can be heard because people do not have proper video and audio equipment, or (c) there are no routines or measures that render it possible for all participants to voice their opinions during meetings. **Support (1)** is established through interviews if informants can make a clear link between (a) specific institutional practices, routines, or norms accompanying the use of physical venues and digital platforms, and (b) improved collaborative problem-solving processes. In addition, observations can carefully examine how such institutional elements unfold in practice, on which basis the local researcher can evaluate if it positively impacts the collaborative processes.
9. Provision of access to blended financing	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The project has one type of or no funding and/or financing sources **Presence (0.33)**: The project has at least two funding and/or financing sources, where at least one source is public and at least one source is private **Significance (0.66)**: The project has been substantially adapted to the requirements of multiple funding and/or financing sources. **Support (1):** The adjustment of the project according to the requirements of the funding	**Absence (0)** can be concluded if the project only relies on one type of either public or private funding. This absence can be established through project description documents and/or interviews with project facilitators, project owners, and/or funders. **Presence (0.33)** can be established by examining the project description or funding documents, which will customarily outline all funding sources. To obtain blended finance, two non-standard forms of financing (not a private bank) and funding must be identified. It is helpful to confirm this with the project facilitators through interviews, as they usually have a complete overview or an updated list of funders if new ones are added along the way. If funding or financing comes without specific requirements, except for repayments, it involves presence but no significance as the hypothesized mechanism of multiple sources of funder accountability is not identifiable. **Significance (0.66)** can be documented by the funding documents or project description specifying requirements from the different sources of funding and/or financing. It is necessary to corroborate further if such requirements are implemented in the project through interviews with the project facilitators and/or owners, as it is conceivable that they might be non-compliant with the requirements. As all funding involves minimal requirements of reporting and mechanisms of due diligence, the criterion for

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		and/or financing resource(s) has had a potentially supportive influence on the collaborative problem-solving processes in the project	significance is that the project has substantially adjusted its practices based on these requirements. It is not assumed to be significant if the requirements are minimal and could easily be slotted into any project. Significance does not result in support if the requirements of different funding and/or financing sources are inconsequential to the collaborative problem-solving process.
			Support (1) requires that project facilitators and/or owners report in interviews that specific requirements have played a discernibly positive role in the project's collaborative processes; e.g., some foundations require public dissemination, which might have positively affected the broader collaborative process by expanding the communicative reach of the project and garnering local support due to increased awareness. Interview statements from project participants can reveal whether the funding requirements also entail specific practices embedded in the collaborative process, such as demanding specific stakeholders to be included that might otherwise not be.
10. The capacity to leverage support from authorities to enable local collaboration	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** Support from higher-level authorities cannot be requested for solving challenges in the project **Presence (0.33)**: Higher-level authorities can be contacted with a request to help solve challenges **Significance (0.66)**: Higher-level authorities are consistently available to solve challenges **Support (1):** Higher-level authorities have, on request, helped informants to overcome challenges	**Absence (0)** can be established through interviews with project facilitators, project owners, and/or bureaucratic actors on the local level who reveal that it is not possible to reach higher-level authorities to request support for the project; e.g., if informants from the local government have no knowledge about how they would be able to reach higher-level authorities on the regional or national level for assistance, or if they describe a generally hostile environment toward local collaboration in the bureaucratic apparatus. **Presence (0.33)** is found in interview statements revealing that it is possible to contact higher-level authorities to remove barriers related to the project solutions; e.g., adjusting or removing legal barriers on the regional level or providing contact information for actors with skills and resources that can be valuable for advancing the process of designing the project outcome. This may be confirmed by newspaper articles about the project as well as written descriptions of the project's progress. Presence does not result in significance if contact can be established but it cannot be reliably used and rather depends on the circumstances, such as the predilections of the individual bureaucrat from higher authorities. Another reason could be if they simply do not prioritize helping local projects, for which reason support will only be available to help in rare circumstances.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
			Significance (0.66) suggests that such communication channels are institutionalized or routinized, which might be outlined in the project description. Interviews can corroborate if such communication channels exist and if they are being used at all. Observations from meetings can also ascertain if higher-level authorities regularly attend the co-creation meetings, which would signal a form of ongoing dialogue. As the availability of higher-level authorities through their occasional attendance at meetings does not necessarily imply that they will provide any substantive support to solve issues, significance does not necessarily imply support. **Support (1)** can be revealed through interviews if the informants report on any concrete instances where the co-creation project has solicited help and has received it. In some instances, local newspaper articles could report on such supporting activities provided by higher-level authorities; e.g., if higher-level authorities have been mobilized to solve red tape legal issues or offered concrete support to meet specific needs in the collaborative problem-solving process, such as extra funds, administrative help, opening communication channels to relevant expert actors or bureaucratic agencies, and so on.
11. Inclusion and empowerment of relevant and affected actors	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** No measures have been taken to secure that all relevant actors (those with relevant knowledge, skills, and resources) and affected actors (those who have a strong interest in problems being solved and in the impact of the new solutions) are included in the project **Presence (0.33)**: Measures have been taken to secure that all relevant actors (those with relevant knowledge, skills, and resources) and affected actors (those who have a strong interest in problems being solved and in the impact of the	**Absence (0)** means there are no measures taken to secure that all relevant and affected actors are included in the project, and the selection of participation has thus most likely been based on an ad hoc selection or on interested members of society. Absence can be corroborated primarily through interviews, as the project facilitator would know based on what criteria different project participants were included (if any). Furthermore, the omission of such details in documents is not necessarily proof of absence. **Presence (0.33)** can primarily be established through interviews, which will indicate whether conscious measures have been taken to include relevant and affected actors. It is conceivable that despite efforts to include all affected and relevant actors, they have not managed to include them all. However, it still qualifies as presence if a genuine attempt has been made. We obviously cannot guarantee against the informant lying about the extent of such attempts, so the discretion of the local researcher should apply. Further evidence can be in the form of project descriptions, which will typically indicate which actors (and types of actors) are included in the project. **Significance (0.66)** refers to when the inclusion of all affected and relevant actors is also buttressed by further measures to allow them all to have a voice, especially marginalized voices that might otherwise be silenced, in the collaborative problem-

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		new solutions) are included in the project **Significance (0.66)**: Specific measures have been taken to ensure that not only are all relevant and affected actors included in the project, but all actors (particularly the marginalized ones) are also able to have a voice in the collaborative problem-solving process **Support (1):** The voices of all actors, especially the potentially marginalized ones, have been actively and meaningfully included in collaborative problem-solving process, rather than being dismissed subsequently	solving processes. Interviews can establish whether project facilitators have made an active effort to include potentially marginalized actors; e.g., by inviting them to project meetings and/or routinely gathering their inputs. Here, the interview accounts of the potentially marginalized actors themselves will be particularly important. Observations during project meetings can also ascertain whether potentially marginalized actors are routinely invited to, and are able to speak up during, project meetings. Significance does not result in support if, despite routines or measures to allow them to regularly speak, there is no subsequent effort to incorporate their inputs into the collaborative problem-solving process. **Support (1)** can be revealed through interviews if the informants report that the inputs and feedback of potentially marginalized actors have been actively and meaningfully included in the collaborative problem-solving process. It will only be possible to identify support once the project has commenced a while ago, as you need some time lag between marginalized (and all other) actors offering their inputs and their manifestation in the form of the workings, intermediary outputs, or final solution of the project.
12. Clarification of interdependence vis-à-vis common problem and joint vision	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** There are no measures in place to show all project participants how each of them can contribute to the project **Presence (0.33)**: The project participants believe that the collaborative problem-solving process can be a productive way to solve the common problem they are addressing, although they do not recognize it as necessary	**Absence (0)** refers to when a majority of interviewed informants express that they do not find the collaboration between all project participants productive or useful for the project and its collaborative problem-solving processes. It might often be accompanied by a general air of distrust or hostility, as informants might feel that certain actors are either not necessary for the collaborative problem-solving process or find their participation unpleasant or undesirable for the overall project. **Presence (0.33)** can be established through interview accounts, where informants acknowledge the importance of collaborative problem-solving and joint action on a rudimentary level. Here, interview statements by project participants are particularly important. Presence without significance is when informants recognize that collaborative problem-solving is a possible way to solve the common problem, although they might hold that it could be better solved in other ways. Alternatively, project participants can hold that the problem-solving process would have been better if some project participants (in the form of stakeholder groups) were actively excluded, thereby

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		Significance (0.66): There are measures in place in the project for project participants to recognize that these common problems necessarily require the contributions of all project participants and consequently that collaborative problem-solving processes are necessary to address it **Support (1):** The sense of interdependence between project participants has the potential capacity to support or motivate the project participants in the collaborative problem-solving process of the project	revealing that the sense of interdependence is limited apart from an abstract recognition that collaboration is important. **Significance (0.66)** suggests that there are measures in place, typically undertaken by project facilitators, to show how each project participant can contribute to the project. Significance can be established through interview accounts in which informants reveal that measures have been taken in the project to show the potential contributions of each project participant. Observations during project meetings can also confirm significance by revealing the extent to which and how these measures unfold in practice. Significance does not imply support if the measures by project facilitators are poorly organized and result in backlash; e.g., project facilitators could ask all project members during the initiation and later stages of the project to introduce their competences and relevance for the project. However, this measure does not guarantee that all project participants will recognize each other's relevance for the projects. It is presumably the role of the project facilitator to assume a facilitative role to ensure that the role of each stakeholder group appears as legitimate and relevant in the collaborative problem-solving process. **Support (1)** can be revealed through interviews if the majority of informants state that project participants feel dependent on each other's resources and/or competences for the success of the project and elaborate on how this dependency unfolds in practice; e.g., project participants trying to improve the maritime ecosystem around the coastline might have initially preferred to exclude private actors (fisheries), as they have partly been the reason for the ecological degradation of the area. However, if the project facilitator successfully convinces the project participants that it is better to include such actors in the collaborative problem-solving process, rather than risking entering conflicts later on once the solutions have been implemented, this indicates support.
13. Trust-building and conflict mediation	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The project has at no stage taken steps to build trust or mediate conflict **Presence (0.33)**: The project has at some stage taken steps to build trust or mediate conflict	**Absence (0)** involves instances when the project facilitator or participants have dedicated any time to build trust, get to know each other, or make any attempt to mediate conflict. It can be corroborated by interviews, as project facilitators and participants know best if they have been involved in such arrangements. **Presence (0.33)** can be established through interview accounts where project participants state that, at some stage, the project has taken steps to build trust or mediate conflict, usually in the form of reports that there have been instances of conflict that project facilitators (or participants) have tried to proactively mediate or

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		Significance (0.66): The project has systematic measures or routines in place to build continuous trust and to mediate conflict **Support (1):** The systematic measures and routines to build continuous trust and mediate conflict in the project have served an important function for supporting the collaborative problem-solving processes	resolve. Events where all project participants are encouraged to get to know each other or build mutual rapport can also be examples of trust-building exercises. Presence does not imply significance if these instances or events have only occurred in a single instance or if they are not systematic. The latter implies that there have been occasions where conflicts have not been mediated or no measures have been in place to remedy them. **Significance (0.66)** requires that systematic measures or routines are institutionalized in the project, which serves the functional equivalence of trust-building or conflict mediation. This effort will typically be conducted by project facilitator(s). Significance can be established through interview accounts that reveal that such an effort has been made. Informants might have different views on this, in which case it is particularly important to look for examples in the interview material on how such efforts have unfolded. Observations from project meetings can confirm significance if they display efforts from the project facilitator(s) (or others) to help the project participants to get to know each other. Significance does not imply support if the measures and routines implemented do not work as intended; e.g. if they do not effectively mediate conflicts or the format for trust-building is poorly organized. **Support (1)** is established through interviews if informants report that the systematic measures and routines to build continuous support trust and mediate conflict function as intended and have, consequently, been a positive influence on the collaborative problem-solving processes. Interviews can provide evidence of positive experiences with either trust-building or conflict mediation that has, in their opinion, enhanced the general willingness of project participants to collaborate.
14. Use of experimental tools for innovation	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The project does not solicit inputs from end-users/affected actors (who have experience with existing problems and solutions or will feel the impact of new solutions) in designing new solutions and does not create provisional solutions based on an iterative process of experimentation and provisional solutions	**Absence (0)** refers to cases where there is no discernible use of any experimental tools (prototyping or user-centered design) based on an iterative process of experimentation with provisional solutions or the use of organizational tools to ensure the feedback by end-users. This can easily be established through interviews with project facilitators. **Presence (0.33)** is established through interview accounts with project facilitators/owners/project participants describing that the project uses experimental tools (prototyping or user-centered design) to systematically draw upon inputs from end-users (affected actors), and/or that the project produces provisional solutions in the process of designing new solutions. This can be backed up by observations of workshops where inputs from affected actors are solicited. It is common for projects to have vague references to such experimental tools but not correctly (actually)

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		Presence (0.33): The project solicits inputs from affected actors or builds provisional solutions in the process of designing new solutions **Significance (0.66)**: The project builds and tests provisional solutions (prototypes/mock-up) developed by the project to facilitate feedback from users in the process of designing the project solution **Support (1):** The use of feedback from test and provisional solutions in designing the project solution has contributed positively to the project's collaborative process	implement them, in which case they are vaguely present but not actually implemented. For instance, input could be solicited through user-centered design but never used as feedback for the design process. Another example could be that the project has built a mock-up but never used it actively for the design process. **Significance (0.66)** requires that the project actively uses experimental tools as part of the design process. This is established through interview accounts describing the use of such experimental tools and can be backed up by observations of project workshops in which these experimental tools are put to use and/or documentation of such use during workshops (pictures, videos, written descriptions, etc.). For instance, prototypes are built and evaluated by project participants based on which further prototypes or the final solution is built. For user-centered design, this entails dialogue about the project solution at some point in the design process. Significance does not result in support if the use of experimental tools in the project's design process does not improve the project's collaboration in any way; e.g., if the gathered inputs are not prioritized in the design process and ultimately become inconsequential for the final solution. **Support (1)** is established through interviews if informants state that learning and inputs from provisional solutions are actively being used in the process of designing the project solution and that it has spurred the collaborative problem-solving; e.g., if the feedback from these experimental tools ultimately makes it to the design of the project solution or it is expected to do so (if the project has not yet been concluded).
15. Ongoing critical self-reflection and learning	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** The project has not been evaluated during its lifespan **Presence (0.33)**: The project has been evaluated at least once during its lifespan **Significance (0.66)**: Inputs from evaluations are used during the collaborative process **Support (1):** The use of inputs from project evaluations has	**Absence (0)** if the project does not involve any evaluative measures in any form prior to its conclusion. This can be established through interviews; e.g., with project facilitators and/or owners. So-called waterfall projects that move sequentially between phases where there are no deliberate measures to self-evaluate until the end usually qualify as having no ongoing critical self-reflection and learning. **Presence (0.33)** is established through interviews, if informants reveal that the project has been evaluated at least once during its lifetime. This can be backed up by documents (e.g., concrete project evaluations) from during its lifespan or the mention of such evaluations in project descriptions. Presence, but not significance, means that although the project has been evaluated at some point, the evaluation results are not used in the project during its lifespan.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
		helped to advance the collaborative process of the project	**Significance (0.66)** requires that the inputs from evaluations are actively used in the project's collaborative problem-solving processes. Significance is established if informants can give concrete examples on how evaluation inputs have been used during the course of the project. This can be backed up by observations (e.g., from project workshops) if evaluation inputs are actively being used during such workshops. Significance, but not presence, means that evaluation inputs are used but do not contribute to improve the project's collaborative problem-solving process. For instance, if the evaluation process is poorly organized and does not adequately capture people's opinions and inputs. **Support (1)** is established if interview accounts reveal that the active use of inputs from evaluations has advanced the project's collaborative problem-solving processes.
16. Exercise of facilitative leadership	☐ 0 ☐ 0.33 ☐ 0.66 ☐ 1	**Absence (0):** There is no formal leadership in the project **Presence (0.33):** There is formal leadership in the project (one or more formal leader(s)) **Significance (0.66):** The formal leader(s) clearly attempt to lead meetings and drive the collaborative problem-solving process forward **Support (1):** The efforts made by project leader(s) to drive the collaborative problem-solving process forward is successful, as they are enabling collaborative interaction between project participants	**Absence (0)** is established when there is no formal leadership in the collaborative project. Interview statements from project participants will quickly be able to establish this if informants cannot name at least one formal leader of the project. Documents such as project descriptions and/or project evaluations can confirm absence. **Presence (0.33)** is revealed through interviews if informants have a clear view of who is the formal leader(s) of the collaborative project. This is established through interviews if the majority of informants can name the formal leader(s). Meeting observations and documents such as project descriptions, project evaluations and/or news articles about the project and its formal leadership can confirm presence. Presence, but not significance, means that there is at least one formal leader of the project, but that no efforts are made by the formal leader(s) to drive the collaborative problem-solving process forward. **Significance (0.66)** requires that the formal leader(s) of the project make a clear effort to drive the collaborative problem-solving process forward, e.g. by facilitating meetings where project participants and stakeholders meet and discuss the next steps in the collaborative process. This is revealed through interviews if informants state that according to their observations, the project leader(s) makes a clear effort to drive the project forward. Observations from project meetings where project leader(s) attempt to drive the collaborative problem-solving process forward can confirm significance, as well as documents in the form of meeting minutes from such meetings and/or descriptions of the project process. Significance, but not support, means that project leader(s) try to drive the project forward, but are not successful in doing this.

Governance factor	QCA scoring	Scoring instructions	Scoring examples
			Support (1) is established if interview accounts clearly state that the efforts made by project leader(s) to drive the project's collaborative problem-solving process forward is successful, and that these efforts enable collaborative interaction between project participants. This can be corroborated by observations from project meetings, if it is clear that the project advances in its collaborative process during these meetings as a result of the project leadership's facilitation.
Outcome variable: successfully co-created green transitions in the form of green outcomes	☐ 0 ☐ 1	**Absence (0):** The co-created solution does or will not create any green transition that will at least marginally improve the status quo **Presence (1):** The co-created solution does or will be expected to produce a green transition that will at least marginally improve the status quo	Local research partners will be asked to evaluate one part of the conceptualization of successfully co-created green transitions; that is, if the co-created solutions have or will be expected to produce a green outcome. A green outcome will be represented as a dichotomous variable; either it does produce a green transition that marginally improves the status quo, or it does not. **Absence (0)** requires that the co-created solution either does not exist or will not create any discernible effects for the environment. **Presence (1)** can be established if testing through prototypes, simulations, or implemented solutions produce a discernible effect that can be measured or documented.

6.11 GOGREEN case report template

Case title:
Scored by name(s):
Date:

Is the project a case of…:

☐ State-initiated co-creation

☐ Entrepreneur-driven co-creation

☐ Grassroots-based co-creation*

For an elaboration of the typology, please consult the GOGREEN theoretical framework p. 25.

Integrated case analysis

Before proceeding to the scoring of the GFs, please provide a *3–5 page case analysis* in which you describe the background, history, and national, regional, and local contexts of the case, the problems, and goals addressed by the local collaboration, the participating actors and their relationships, the unfolding of the co-creation process, the most important governance factors (this may include factors other than those in focus in this project), and the generated outputs and outcomes. The conclusion may specify a few lessons learned from the case study.

1. Perceived importance of biosphere conditions

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

2. Legislation, programs, and formal goals

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

3. Relative openness of public governance paradigms

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

4. Formalized institutional channels for citizen participation and community mobilization

QCA score:
☐ 0
☐ 0.33
☐ 0.66
☐ 1

Scoring confidence:
☐ Low confidence
☐ Medium confidence
☐ High confidence

Data sources:
☐ Interviews
☐ Documents
☐ Observations

Please elaborate on the reasoning behind your scoring for this governance factor:

5. Mechanism for ensuring top-down government and bottom-up social accountability

QCA score:
☐ 0
☐ 0.33
☐ 0.66
☐ 1

Scoring confidence:
☐ Low confidence
☐ Medium confidence
☐ High confidence

Data sources:
☐ Interviews
☐ Documents
☐ Observations

Please elaborate on the reasoning behind your scoring for this governance factor:

6. Strategic agenda-setting by means of translation

QCA score:
☐ 0
☐ 0.33
☐ 0.66
☐ 1

Scoring confidence:
☐ Low confidence
☐ Medium confidence
☐ High confidence

Data sources:
☐ Interviews
☐ Documents
☐ Observations

Please elaborate on the reasoning behind your scoring for this governance factor:

7. Construction of narratives about successful multi-actor collaboration

QCA score:
☐ 0
☐ 0.33

Scoring confidence:
☐ Low confidence
☐ Medium confidence

Data sources:
☐ Interviews
☐ Documents

☐ 0.66
☐ 1   ☐ High confidence   ☐ Observations

Please elaborate on the reasoning behind your scoring for this governance factor:

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8. Building or harnessing institutional platforms and arenas

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

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9. Provision of access to blended financing

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

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10. The capacity to leverage support from authorities to enable local collaboration

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

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11. Inclusion and empowerment of relevant and affected actors

QCA score: Scoring confidence: Data sources:

☐ 0   ☐ Low confidence   ☐ Interviews

☐ 0.33   ☐ Medium confidence   ☐ Documents

☐ 0.66   ☐ High confidence   ☐ Observations

☐ 1

Please elaborate on the reasoning behind your scoring for this governance factor:

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12. Clarification of interdependence vis-à-vis common problem and joint vision

QCA score: Scoring confidence: Data sources:

☐ 0   ☐ Low confidence   ☐ Interviews

☐ 0.33   ☐ Medium confidence   ☐ Documents

☐ 0.66   ☐ High confidence   ☐ Observations

☐ 1

Please elaborate on the reasoning behind your scoring for this governance factor:

```

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13. Trust-building and conflict mediation

QCA score: Scoring confidence: Data sources:

☐ 0   ☐ Low confidence   ☐ Interviews

☐ 0.33   ☐ Medium confidence   ☐ Documents

☐ 0.66   ☐ High confidence   ☐ Observations

☐ 1

Please elaborate on the reasoning behind your scoring for this governance factor:

```
[                                                                        ]
[                                                                        ]
[                                                                        ]
[                                                                        ]
```

14. Use of experimental tools for innovation

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

```
[                                                                        ]
[                                                                        ]
[                                                                        ]
[                                                                        ]
```

15. Ongoing critical self-reflection and learning (i.e., process and/or developmental evaluation):

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

```
[                                                                        ]
[                                                                        ]
[                                                                        ]
[                                                                        ]
```

16. Exercise of facilitative leadership:

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Interviews
☐ 0.33	☐ Medium confidence	☐ Documents
☐ 0.66	☐ High confidence	☐ Observations
☐ 1		

Please elaborate on the reasoning behind your scoring for this governance factor:

Outcome variable: Successfully co-created green transitions

QCA score:	Scoring confidence:	Data sources:
☐ 0	☐ Low confidence	☐ Survey
☐ 0.33	☐ Medium confidence	☐ Interviews
☐ 0.66	☐ High confidence	☐ Documents
☐ 1		☐ Observations

Please elaborate on the reasoning behind your scoring for this governance factor:

Please list all the informants you have interviewed for the case study (list project role + interview date):

Please list all the observations you have made (type of meeting/workshop/etc. + observation date):

Please note the response rate for the survey/measurement of outcome variable:

6.12 Sample of a Declaration of Consent for GOGREEN

NOTE: This is only a sample for the Roskilde University template, as each research partner must draft their independent *Declaration of Consent* compliant with local regulations.

Roskilde University is conducting a research project entitled "Governing Green Transitions" (GOGREEN). The leading researcher on the project is Professor Jacob Torfing.

The project aims to investigate how to govern the co-creation of sustainable solutions in order to contribute to the green transition.

The collection of the information will take place via interviews, meeting observations, documents, and surveys.

Participation in the project is voluntary. The legal basis for the processing of your information is the General Data Protection Regulation article 6, section 1, subsection a in combination with General Data Protection Regulation article 9, section 2, subsection a – consent.

After collecting the data, it will be kept in such a manner that it is inaccessible for unauthorized people.

Roskilde University retains your information until March 31, 2036. Your information will then be deleted.

Data will be used with an aim to publish in recognized scientific journals and edited volumes. Case reports will also be published on the project website (not yet accessible) and in the Collaborative Governance Database (https://collaborativegovernancecasedatabase.sites.uu.nl/). The data will be used and presented in such a manner that the readers of the publications will not be able to identify you as a participant in the research project or that you have participated at all.

Before we share any of your information with anyone, Roskilde University will ensure that we comply with both European and Danish rules on the matter, which may mean that we must request permission from the Danish Data Protection Agency before doing so.

You have several rights under the General Data Protection Regulation.

- The right to request the deletion of your data
- The right to withdraw your consent
- The right to have a copy of your data handed over to you
- The right to lodge a complaint with the Danish Data Protection Agency (you can find their contact information at datatilsynet.dk/English/)

To make use of these rights, you can contact Roskilde University via this contact information:
Corresponding researcher: Name, role, e-mail, telephone no.
Project leader: Professor Jacob Torfing, jtor@ruc.dk, +4546742185
Roskilde University's Data Protection Officer, dpo@ruc.dk

Best regards
Name, Role

6.13 List of resources available on Teams

The following resources are available in the GOGREEN Collaboration Space on Teams: link
- Folder: Background Reading:
  - A compendium with background reading for the project
- Folder: Project Management:
  - Mailing list
  - Project timetable
  - Overview of the steps in the research project (GOGREEN at a glance)
  - Project description (folder: Project Management)
- Folder: Legality and Ethical Guidelines:
  - GOGREEN *Declaration of Consent*
  - The European Code of Conduct for Research Integrity

6.14 Contact information of GOGREEN researchers at Roskilde University

Name	Role	E-mail	Picture
Jacob Torfing	Principal investigator	jtor@ruc.dk	
Alexander L. Q. Chen	Project facilitator	alq@ruc.dk	
Oda Hustad	Project facilitator	ohustad@ruc.dk	
Eva Sørensen	Primary advisor	eva@ruc.dk	

6.15 Important dates and deadlines

Year	2023												2024
Activity	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
Q&A meetings	Wed, 18		Wed, 8		Wed, 10			Wed, 9		Wed, 11			
Case studies	■	■	■	■	■	■	■	■	■	■	■		
Coding and case report workshop										TBD			
Cross-case analysis											■		
Revision of SDG governance model												■	■
Feedback on cases													■
Dissemination of results to national and local actors													

Year	2024											2025					
Activity	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
Planning of QCA and recruiting additional data	■	■	■	■	■												
Conducting the QCA						■	■	■	■	■							
Interpretation of QCA											■	■	■				
Writing reports on QCA															■	■	■