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Gebara, Caroline Herlev; Poll, Christian; Hauschild, Michael Zwicky

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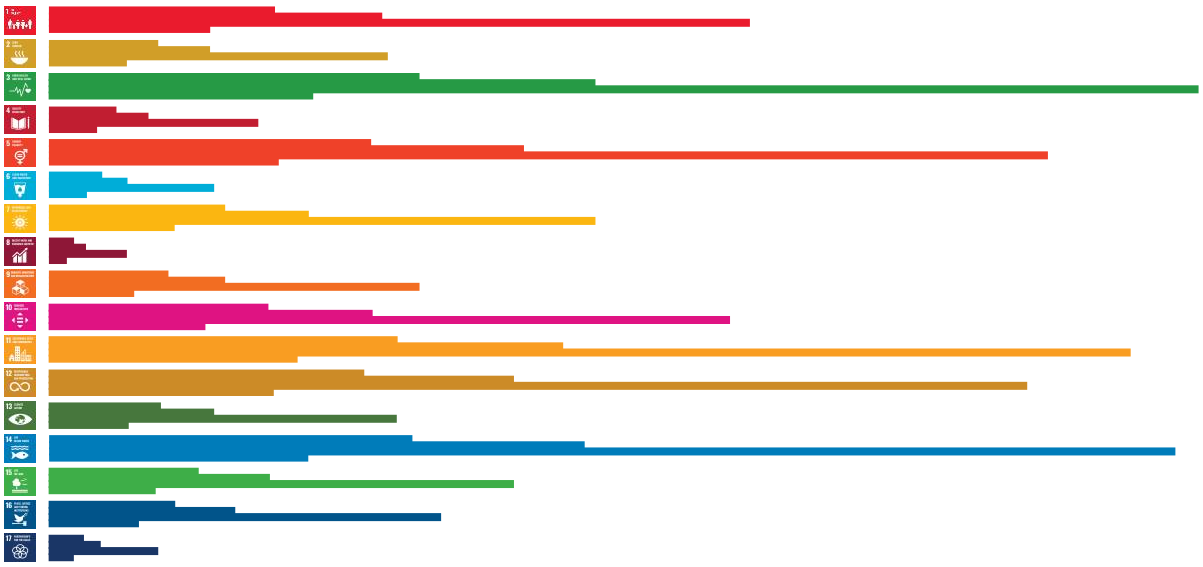

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Methodology Guideline

Report
2023

By
Caroline Herlev Gebara, Christian Poll, Michael Hauschild

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Preface

This project was carried out by DTU Sustain with a grant from the COWI Foundation and in dialogue with FRI - The Trade Organization for Consulting Engineers in Denmark. Originally, the project was initiated by COWI with the aim of developing a specific set of indicators, but in order to embrace the entire consulting engineering sector, the project was converted into a methodology development project instead, with the aim of developing a solid platform for companies in the sector to build on, when working with SDG indicators.

From DTU Sustain, Section for Quantitative Sustainability Assessment, the following key staff members were involved in the project: Special Consultant M. Sci. Eng. Christian Poll (project manager), PhD Student Caroline Herlev Gebara and Professor Michael Hauschild.

The project was followed by an Advisory Board of:

- The Danish Association of Consulting Engineers, FRI
- COWI
- NIRAS
- Danish Energy Management (DEM)
- EKJ Consulting Engineers
- Artelia A/S (tidl. MOE)
- The Confederation of Danish Industry
- Danish Standards
- Ecolabelling Denmark
- Statistics Denmark
- The Danish 92 Group (umbrella of Danish NGOs)
- Bureau Veritas

Furthermore, the Danish 2030 Panel and the Danish Business Authority have been briefed along the project development.

Lyngby, May 2023

Christian Poll
Special consultant

Contents

Abbreviations and definitions

Abbreviations:

AESA	Absolute Environmental Sustainability Assessment
CSR	Corporate social responsibility
DPSIR	Driver, Pressure, State, Impact, Response
ESG	Environmental, Social and Governance
GHG	Green House Gas
GRI	Global Reporting Initiative
ILCD	International Life Cycle Data system
LCA	Life Cycle Assessment
LCT	Life Cycle Thinking
MECE	Mutually Exclusive and Collectively Exhaustive
PBs	Planetary Boundaries
SDGs	Sustainable Development Goals
WBCSD	World Business Council for Sustainable Development

Summary and recommendations

Summary

The guideline suggests a systematic approach to follow when selecting indicators for SDG performances of projects. Having such a guide can ease the selection process for companies and projects, and free practitioners from having to invent the wheel every time an assessment has to be done nor to end up picking indicators more or less randomly. Furthermore, the guideline can inspire the development of more concrete guidelines that fit the context of sectors, such as for the infrastructure-engineering sector or the chemicals plant engineering sector.

Prior to the development of the guideline, the current practical experience with SDG reporting was scanned in order to identify current practices and limitations. Furthermore, an extensive literature review of existing indicator selection criteria was undertaken to identify a comprehensive set of criteria to evaluate indicators. Finally, a number of key principles that are relevant when assessing sustainability performance were used to shape the guideline. These covered theories of life cycle thinking, causes and effects, absolute sustainability assessment, and indicator selection criteria.

A methodology guideline was developed, answering the call for a systematic method for selecting SDG indicators. The guideline was validated on a selection of cases. The suggested methodology consists of four main steps, namely:

1. Goal and scope determining,
2. SDG screening,
3. indicator selection and
4. reporting of the selected indicators and choices made by application of the guideline (see Figure 1).

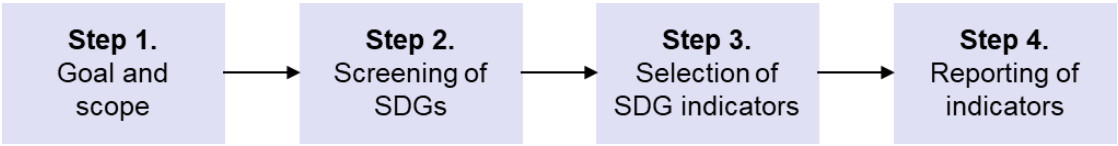

Figure 1. Main steps included in the suggested SDG indicators selection methodology guideline.

- Step 1 is proposed to settle the project goal and scope and thereby define the right questions to be answered through the use of the indicators and defining the system boundaries. Inspiration was taken mainly from the goal and scope definition phase of the Life Cycle Assessment (LCA) methodology. Emphasis has been put on the proper scoping of the life cycle of the project.
- Step 2 suggests a pre-screening of the relevance of each SDG concerning the project scope. This step is proposed to guide users to reflect upon the potential relevance for all 17 SDGs. Again, the life cycle thinking is used to guide the screening process, to further check for relevance throughout the whole life cycle to avoid overlooking potential relevance of certain SDGs and problem shifting between life cycle stages or SDGs.

- Step 3 consists of the SDG indicator selection process, being the core part of this guideline. The guide suggests a set of indicator criteria that the user needs to go through step by step to check whether potential indicators are suitable for the assessment purpose. The set proposes both criteria for individual indicator performance and for the performance of the indicator system as a whole. Furthermore, two levels of criteria are put forward, distinguishing "must-comply" criteria and "nice-to-comply" criteria.
- Step 4 recommends a set of questions that need to be answered along with communication of the indicator results. Since a selection of indicators will always hold some degree of subjectivity, transparent reporting is very important in order to put forward the choices or decisions made along the process.

The guideline was tested on three SDGs, namely 5, 12, and 13 with one real case and two hypothetical cases with relevance for the consulting engineering sector. The real case was based on an existing construction project about building a new kindergarten based on recycled materials in a Danish municipality in the Greater Copenhagen Area. A full application of the guideline was tested with this case, resulting in a list of well-defined indicators and reporting of the steps following the guideline. For the other cases, selected parts of the guideline were tested to illustrate deviations from the first case and show potential implications.

The guideline has some limitations that should be kept in mind when applying it. Firstly, the guideline is limited to the indicator selection process, thus, it does not provide guidance on how to perform a full-sized SDG assessment (i.e. including data collection and assessment of the actual project performance). Instead, it helps to answer what is relevant to measure in such an assessment. Secondly, while the guideline highlights three out of the 17 SDGs to illustrate the applicability, it does not provide any examples of how to apply this for the remaining SDGs. Nevertheless, the three SDGs used in this guide serve as an example of how the same steps can apply for other SDGs and other project contexts. Thirdly, it does not ensure a perfect and objective set of indicators, as some degree of subjectivity will always be a part of an indicator selection process. Therefore, there is not one correct solution to applying this guide on a project, as the final indicator set will depend on the initial starting point of indicators to evaluate, which are chosen by the user.

Recommendations

Below we provide some recommendations for possible follow up projects to the present:

- As this is first generation, there is a need for further testing and validation of the methodology towards the remaining SDGs. Also, collecting use data on how the guide and the methodology is being implemented will be very useful for further methodology development. Such data collection should preferably be structured as a minimum by SDG, by indicator criteria, and by project type and sector.
- Within the level of sectors or themes, a development of more specific sub-guides that can provide a common practice for all projects within the field, hereunder specific suggestions for mandatory indicators, may improve the user friendliness by narrowing down the degrees of freedom, providing a more precise standard for each sector. Thereby the feasibility of the methodology over time may increase.
- When communicating the results of an SDG assessment, where subjective choices are present, it is very important to be transparent. Whenever decisions and choices are made, it is highly recommended to be open about these and present robust justifications. Therefore, it

is important that companies communicate transparently about the weaknesses of the project and the SDG assessment. Thus, a follow-up project on how the implementation of the methodology is being communicated would also be interesting. Furthermore, based on such knowledge, an extension to the guideline on communication may be developed.
- This first iteration of the methodology is performance-based. On top of a performance-based indicator approach, it will be relevant to develop an action-based approach to SDG indicator selection. Thus, where performance indicators are close to the objective state of the relevant impact categories, like the emission of CO_2-equivalents for a climate impact, action-based indicators focus on the later steps in the DPSIR cycle, especially the response indicators. Those are for example the introduction of a CO_2 tax on a group of products. While such indicators are central in actions needed for solving the big crises, they are also much more complex and often stirred with political aspects, thus often giving results that are more ambiguous.

Chapter 1. Introduction

1.1 Background

In 2015 the United Nations agreed on the 17 sustainable development goals for 2030 (the SDGs). The decision was a culmination of many years of debate at all levels on how to understand sustainable development as defined in the 1987 Brundtland report "Our Common Future"[1]. Since the adoption of the SDGs, the entire world society has been seeking ways to work practically with the goals, targets and indicators, developed for this new framework.

The UN itself has developed normative targets and indicators. At the national level, governments are working on implementing the SDGs, e.g. by adjusting targets and indicators to fit specific national conditions. In Denmark, through an extensive stakeholder involvement process in 2019-20, the project Vores Maal established a set of indicators, adjusted to Danish conditions[2]. Both the UN and the Danish indicator sets are designed for national and publicly available data as for nationally controlled parameters like school systems and public social and health services.

At the sub-national level, agencies, municipalities, societies, institutions and companies are struggling to find ways to work systematically with the SDGs. The 17 goals, 169 targets and around 240 indicators of the SDG framework is designed to fulfil national or supra-national goals and activities. Thus, when a local school or a company wish to improve their sustainability effort by implementing the UN SDG framework, there is currently little help on how to select suitable indicators. Not that there is no guidance on how to work with sustainability and the SDGs at the organization level. There are numerous guidelines on how to manage the process of implementing the UN-SDGs in the strategic effort on working with sustainability in organizations (e.g. Global Compact, WBCSD, GRI, the Confederation of Danish Industry etc.), but when it comes to selecting indicators, stringent criteria are not on the top of minds. Rather, users are directed towards large inventories of hundreds of possible indicators to choose more or less randomly from, the SDG Compass with the Inventory of Business Indicators being the most well-known example[3].

Although several approaches have been developed, the process of developing and selecting indicators still remains a challenging task[4]. Indicator selection criteria found in literature are generally diverse and the context of a study plays a big role in how much importance is given to these criteria[5]. Furthermore, the precise meaning of some of the mostly used criteria differ between studies[6].

The lack of guidance on selecting indicators puts SDG practitioners in an awkward situation, because with hundreds of indicators to choose from and no criteria to guide you, the practical choice taken will lack documentation. Why did you choose this indicator, not that one?[7] Are you deliberately twisting the outcome of the exercise or are your choices simply random? That situation may not only be awkward, it may even invite external criticism that cannot easily be rejected. Therefore, there is a strong need for scientifically based criteria for the selection of indicators for the SDGs.

1.2 Goal and scope

The guideline aims at establishing a set of recommendations for the consulting engineers sector in Denmark about how to select feasible yet sufficient SDG indicators on the project or project type level. A project is defined as a set of activities, in this context carried out by a consulting engineering company, which typically is described in a project description. Two examples could be the construction of a building or a due diligence assessment of some changes in the facilities of a customer's production site. The scope may be defined narrowly like only the building materials, or it may cover other aspects of the building, like the use and maintenance over 50 years. The term may even be used for a palette of similar projects, assessed as a whole. For a more formal definition of projects, see references[8,9].

This guideline establishes methodology and a set of principles on how to select appropriate SDG indicators for a given case. It provides a generic guide for which principles to follow when selecting SDG indicators in specific contexts. Thus, the guide intends to assist companies or other users who want to develop an SDG indicator selection procedure that suit their context. The purpose of the methodology is not to develop specific tools or ways of performing the selection process, as this is the role of the company itself or their advisors. There is a growing market for tools, handling the various steps and aspects of managing organization's effort on working with sustainability. Furthermore, such tools may need to vary across disciplines. FRI's members – the consulting engineers – are key providers in Denmark of such services. Instead, this guideline suggests criteria and procedures to qualify and maybe streamline the way such tools give advice on selecting indicators.

Finally, the guideline evolves around the SDG indicator selection. It does therefore not consider any further steps, which should be included in a full SDG assessment, e.g. including data collection, performance assessment and target setting. Instead, the guideline is considered a key input to developers and users who need to define a set of SDG indicators to be assesses in SDG assessments.
Figure **2** illustrates the scoping of the methodology proposed in this report visually.

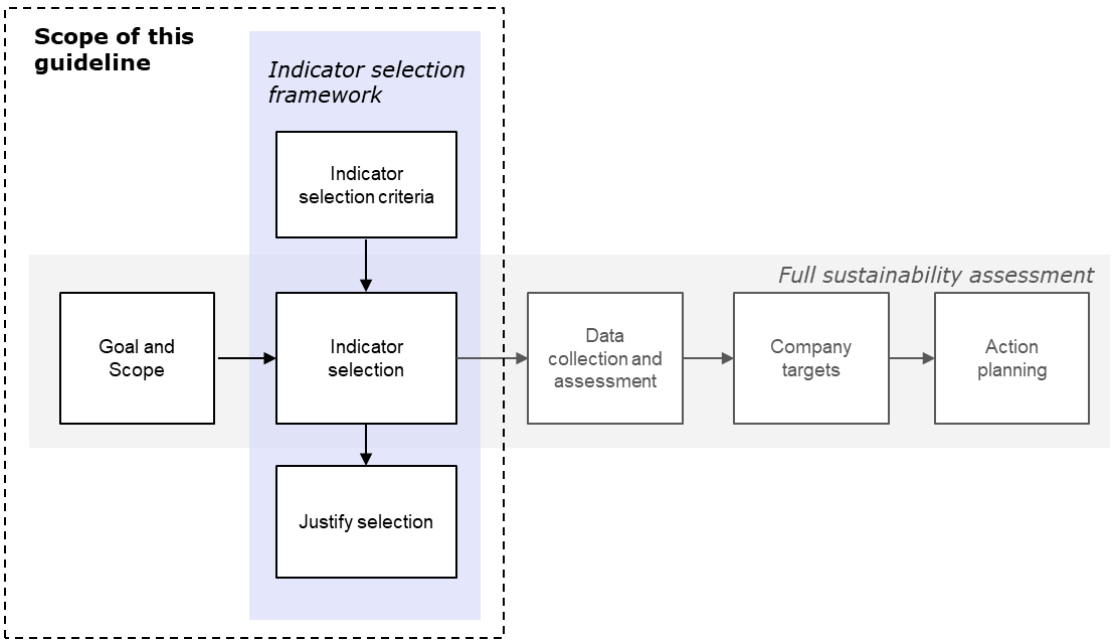

Figure 2. The general steps of sustainability assessments (horizontally) and the cross-cutting steps of the indicator selection process (vertically). The dotted line indicates the scope of this guideline.

Because of the scope of the SDG iSelect methodology and guideline, specifications given in legal documents like the taxonomy, ESG guides, the CSR directive, the CS due diligence directive and other normative documents with specific requirements for monitoring or criteria to be met, there is no contradiction to the guideline. The guideline specifies how to select good indicators. Thus, if a fixed set of parameters, criteria or indicators is given by legislation, the SDG iSelect is not a relevant tool, because it does not specify specific indicators. The guideline may, however be used to assess the relevance of the given mandatory indicators in relation to a specific project, and thereby qualify the process of implementing the legislation.

1.3 Development of the guideline

To ensure the relevance and feasibility of the guideline, key stakeholders have been involved during the methodology development. FRI has been central, but also a line of member companies from FRI and other key stakeholders (see the list of members of the Advisory Board in preface) have been consulted. The guideline focuses on the top-down-approach of indicator development methodology, based on objective and scientifically defined criteria. As this guideline takes the technical and scientific starting point, aiming at establishing an objective basis for selecting indicators, it does not dig deep into the bottom-up-approach for selecting SDG indicators. The guideline, however, allows for some flexibility by the company who chooses their own starting point for which indicators to assess and how. Reporting transparently the choices behind the selected indicator set is therefore key for keeping the legitimacy of the final set of indicators.

Developing a successful guideline is to find the right balance between what is scientifically dictated and what is practically feasible in a typical project of the consulting engineers sector. To ensure scientific grounding, the guideline was built on a solid basis of 1) indicator selection

methodology, 2) life cycle assessment, 3) cause and effect theory, and 4) absolute sustainability assessment. An extensive scientific literature review was carried out to identify current indicator selection criteria. Besides these principles, practical experience was scanned to draw on the existing experience with SDG assessment. Hereunder, standard-setting in institution's guiding documents (e.g. by the UN and OECD) and practical implementation by companies when working with or reporting on SDGs. During the development process, the guideline was tested towards both a real case study and towards fictive cases to validate its usability. We kept the case validation limited to the three SDGs 5, 12, and 13 that cover social, technological and environmental aspects of the SDG framework, therefore representing the applicability of the guideline of different types of SDGs. However, when working with the guide on a project, all SDGs should by default be included in the selection process, imposing the methodology of the guide, despite the limited testing so far.

Complementary to this guideline is a background report, which elaborates on the key concepts and findings that form the basis of the suggested methodology and describes some practical steps taken prior to the methodology development.

1.4 Competence requirements

Working with the methodology requires solid experience in assessing environmental and sustainability aspects in the technical sphere of the project field. A technical education at the level of bachelor supplemented with some years of practical experience in the field of assessing environmental aspects, like climate, water, chemicals, eutrophication, waste, resources and biodiversity is considered minimum. Furthermore, it is crucial with some education and experience working with the life cycle approach, understanding the concept of functional unit, life cycle phases, upstream and downstream processes in the product chain etc. Finally, one must have some experience working with indicators, understanding the cause-effect-mechanisms that make indicators relevant for some cases and not others, understanding the difference between e.g. impact indicators and response indicator and understanding the consequences of data quality and availability for an indicator to work well.

1.5 How to read this report

This guideline takes you step-by-step through a set of principles for selecting a set of SDG indicators. The guideline is a stand-alone document, which can be read independently.

Chapter 2 presents an overview of the main steps within the guideline and thus the overall framework applied.

Chapter 3 presents the methodology guideline and describes each of the practical steps that need to be carried out. To comply with the suggested guideline, it is important to read the whole guideline and follow the steps in the presented order. If one only intends to evaluate existing indicators against the criteria, one can jump directly to the indicator selection criteria presented in Section 3.3.2 and 3.3.3. However, this does not guarantee full compliance with this guideline.

Chapter 4 presents the results for the cases used to validate the guideline and serves as inspiration and examples of the application. The reader can also jump between the guideline and the case examples to support the guideline and seek inspiration.

As mentioned, there is a background report explaining the main methodological steps and principles that makes up the foundation of this guideline. The background report can be read in its full length or used as a look-up document to support the understanding and reasoning behind the guideline development. Throughout this document, where relevant, reference to the background report is made.

Chapter 2. Methodological framework

Sustainability performance assessments typically includes the main steps: 1) defining objectives and scope, 2) selecting indicators, 3) collecting data, 4) impact assessment, and 5) interpretation. While consensus exists to a larger extend for the steps 1 and 3-5, this is not the case for step 2 about indicator selection. Therefore, the aim of this methodology guideline is to suggest a set of principles for this step. In order to define a good set of indicators, it is important to know the purpose of the project and have a clear scoping. Therefore, step 1 is an essential prerequisite for the indicator selection in step 2. Furthermore, assessing all 17 SDGs fully, might be a cumbersome task and acknowledging that some might be more relevant for certain projects than others, this guideline proposed an additional step prior to the indicator selection where SDGs can be screened upfront. The subsequent steps, i.e. data collection, assessment and interpretation are not considered in this guideline, but the methodology can be used as input to such assessments adding more steps (see scope in
Figure **2**).

The proposed methodology and its inherent framework thereby serves as a basis for 'good practice' when selecting indicators for SDG performances assessments of projects in the consultancy sector. The methodology consist of the four main steps 1) Purpose and scoping of the project, 2) screening for SDG relevance, 3) selection of indicators, and 4) reporting of indicators. The methodology is presented in Figure 3, where each steps consist of a set of sub steps. The following sections describe and guide each step in details.

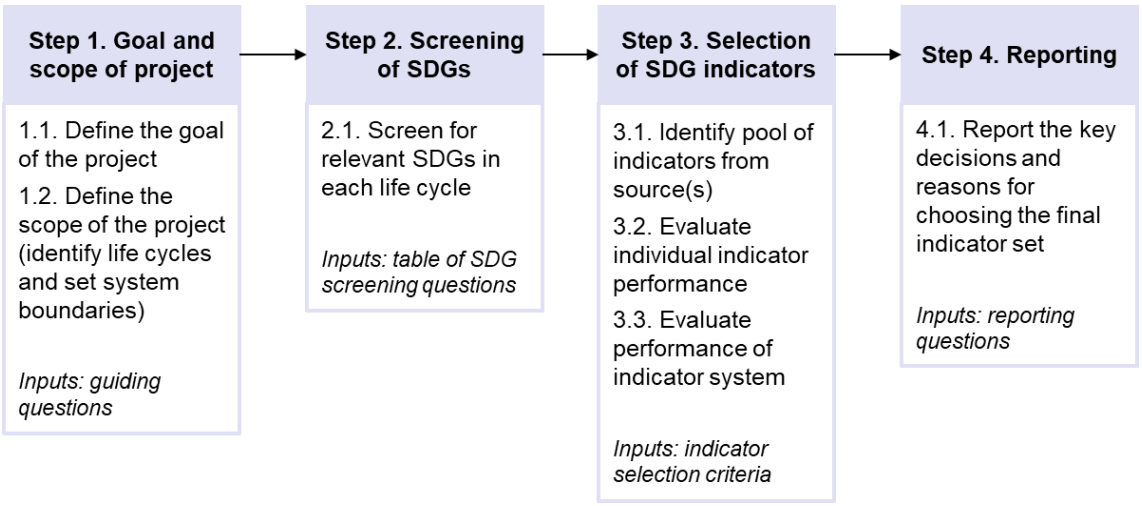

Figure 3. Overview of steps in the proposed methodology for selecting SDG indicators.

Chapter 3. SDG Indicator Selection Methodology

This chapter presents the four main steps of the methodology. The theoretical background information supporting the steps are found in the background report[1]. Where relevant, explicit references are given to the background report throughout the different steps.

3.1 Step 1: Define goal and scope of the project

Prior to selecting SDG indicators for a project of any kind, it is important that the purpose of the project and the indicators are clearly defined and that the system is accordingly scoped. Therefore, this step is very important for laying the basis for the indicator selection later (i.e. Step 3).

3.1.1 Defining the goal

First, the purpose of the assessment must be clearly defined and stated. This defines what the indicators are intended to be used for, which has a big influence of the output of the final indicator set. To guide the goal of the assessment, it is recommended to follow the similar guiding questions and suggested by the structure of the ILCD guideline for the Goal definition[2]. Table 1, sums an example of the important questions to ask here, including some examples of sub questions for inspiration. The questions for defining the goal can be put differently, as long as the intension of the use of the assessment it clearly defined.

[1] See document "*SDG Select - Development of a scientific methodology for selecting SDG indicators on project level in the consulting engineering sector - Background Report*" that accompanies this guideline.

[2] https://eplca.jrc.ec.europa.eu/uploads/ILCD-Handbook-General-guide-for-LCA-DETAILED-GUIDANCE-12March2010-ISBN-fin-v1.0-EN.pdf

The guideline distinguishes between performance based and action based indicators, where the former measure how the system is performing (also referred to as lagging indicators) and the latter measure the level of potential actions for achieving changes in the performance (also referred to as leading indicators). Performance based indicators are tied to the question of what we want to achieve and, therefore, less context specific. Action based indicators, on the other hand are much more dynamic in space and time and, therefore, should be seen as a complementary to the performance based indicators, as means to achieve improved performance, not as goals in themselves. Since this guideline is scoped towards the selection of indicators for SDG performance assessments, the recommendations and examples focus on this purpose, and thus cover only performance based indicators. However, this might be extended to or serve as inspiration for other scopes (e.g. developing SDG action based indicators).

Table 1. Guiding questions for defining the goal. The second column presents some additional examples of guiding questions to ask when defining the goal.

Guiding questions	Examples
1. What is the intended application and reason for carrying out the assessment?	• *Identifying relevant KPIs?* • *Identify potential actions to achieve targets?* • *Benchmarking purposes (e.g. how far are we from a certain target?)?* • *Internal or external communication?* • *CSR reporting?*
2. Who is the target audience?	• *The sustainability team within the company?* • *All companies within a certain sector?* • *Costumers?*
3. Who are the influential actors involved?	• *Sustainability team only?* • *Stakeholder interests?* • *End users?*

3.1.2 Scoping the system

When scoping the project system, it is first important to clarify what is being assessed and what this project provides. Second, the life cycle of the project system needs to be identified and presented as illustrated in Figure 4. See guiding questions in Table 2 below.

Table 2. Guiding questions for defining the scope. The second column presents some additional examples of guiding questions to ask when defining the scope.

Guiding questions	**Examples**
1. What is being assessed? What function or need does the project fulfil?	• *A specific sector of consideration?* • *Project is implemented within a certain period of time?* • *Global, national, sectoral, field specific?* • *Is the project a solution to a current problem?* • *Is the project fulfilling a current need in society?*
2. What are the operational boundaries of the project?	• *Are some parts of the project excluded for this assessment?* • *Is the whole value chain/life cycle of the project considered? Or has anything being cut-off?* • *Are some actors (e.g. suppliers, users) not considered as part of the project?*

The system boundary is an essential part when assessing sustainability aspects of a system, and excluding certain parts of a system might lead to overlooking important impacts, which should be measured within the project. The life cycle can be approached in different ways, such as considering the different life cycle stages, upstream/downstream, scope 1-3. It is up to the practitioner to decide what would be the best approach to consider, as long as the whole life cycle has been considered. More and more companies are getting familiar with the definition of the three scopes proposed in the corporate standard of the GHG protocol[10], thus, it might be preferable to follow this approach for the project of consideration. In other cases, it might be preferable to follow the chronological structure of the different life cycle stages. Therefore, Table 3 attempts to present the life cycle stages in the three main steps of 1) upstream processes, 2) project facilities and energy purchases, and 3) downstream processes, indicating the analogues scope as proposed three scope of the GHG protocol. The activities that need to be considered are listed within each stage. See further description of life cycle thinking in the background report.

It is recommended to follow the scoping that differentiates Scope 3 upstream processes and downstream processes when defining the system for SDG assessments prior to the indicator selection. Since the processes physically happen at different ends of the company/project operations, it can provide a better overview of the process and help to avoid overlooking certain parts in the up- or downstream. An example of this is illustrated in Figure 4 for a simplified building project. In this guideline, the same structure is followed in the case examples in Chapter 4. However, other grouping can be carried out if preferable, as long as the whole value chain is accounted for and potential exclusions are explicitly mentioned and well justified.

Table 3. Corresponding table of different ways of representing the project life cycle, including the three company scopes suggested by the GHG protocol[10] and the main activities that should be included.

Upstream processes	**Project facilities and energy purchases**	**Downstream processes**
Scope 3	***Scope 1 + 2***	***Scope 3***
Indirect	***Direct and indirect (energy)***	***Indirect***
• Extraction of raw materials • Extraction, production, transportation of fuels consumed for electricity production • Energy losses from transmission • Imbedded impacts in all purchased materials needed upstream • Transport of purchased products • Worker's transport • Outsourced activities not controlled by the company/commissioner	• Direct impacts from company facilities • Production facilities • Office activities • company vehicles • Fuel combustion • Purchased electricity (i.e. direct impacts from energy production)	• Use of product/service • Employees business travels • Waste treatment • Transportation for sold products/ needed in the use stage • Transportation to waste treatment

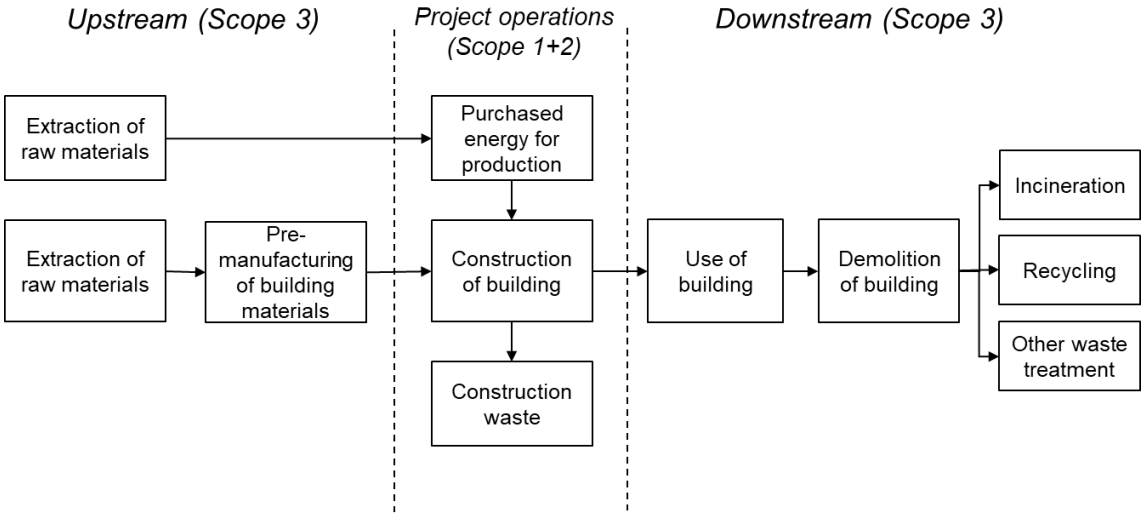

Figure 4. Example of life cycle representation representing the three company/project scopes as defined by the GHG protocol.

3.2 Step 2: Screening of relevant SDGs throughout the value chain

As a second step prior to the indicator selection, this step serves as a screening of the SDG importance to the project. Some companies select the SDGs that they find the most relevant, without further reasoning behind the selection process. The issue is that either such a selection can appear arbitrary or, when there is a fair reasoning behind such a selection, companies use very different approaches, which can make it seem less credible for externals (e.g. potential consumers). Furthermore, it is not obvious for people outside what is considered in the scope of the assessment when companies brand their projects based on certain SDGs (e.g. *are they only referring to direct impact? Or the impacts of the products or services provided? What about consumption impacts?).*

All the SDGs are potentially important and often intertwined. Therefore, it may confuse the target audience, when the SDG selection is not transparent. Ideally, all the SDGs should be considered somehow when assessing projects' or companies' contribution to the SDGs. However, acknowledging the complexity of such an assessment, the added level of effort, and the difficulty in communicating the outcomes, it is instead highly recommend to develop a common guide for companies to 1) screen for potential SDG implications and 2) clearly state the reasoning behind their choices. In the case of exclusion of one or more SDGs, this should be based on justified irrelevance to the project and its outcomes and transparently communicated to the audience.

To ensure that the whole life cycle is taken into account, it is recommended that such a screening goes through each of the life cycle stages as defined in the previous step for each of the SDGs. Simply asking if each SDG is relevant in the implementation of the project is not necessarily sufficient since this can (unintentionally) result in overlooking relevance in other aspects of the value chain (e.g. *child labour is not relevant for Danish companies in their direct impacts, but what about for the purchased products?*). Furthermore, as the SDGs were designed as a set of global goals, their definition and targets might not always be fit for assessments at smaller scales (e.g. countries, cities, organizations, etc.). Thus, it is important to assess the aspects of

each SDG and how it can relate to the context of companies or projects. If we consider SDG 1 ("*end poverty in all its forms everywhere*"), it might not seem relevant for a Danish company, however, it is still relevant to consider questions such as: "*How can we contribute to everyone having some kind of access to products/services that are key to a life out of poverty?*", "*How are we paying employees in production facilities in other countries?*" Therefore, it is important to identify the main aspects that define an SDG and its underlying targets and how they relate to the context of the project. To follow this step of the guideline, it is therefore, recommended to make an analysis of how each SDG translates to the context of the SDG assessment. Preferably, this can be carried out at topic or sector level, which can apply to all projects herein. Reaching a level of consensus within a higher level than the specific projects, can ease the task for carrying out SDG assessments at project level and strengthen the comparability across. Thus, working together at the sector level on identifying level playing ground may be a good idea.

Table 4 shows an example of the first step for extracting the relevant aspects of SDG13, highlighting the relevant aspects related to both physical stages (i.e. early warnings, climate change, impacts and resilience), and the management oriented stages (i.e. awareness and education, reduction strategies, and capacity building and adaptation). See example for other SDGs in the background report.

Table 4. Example of extracting the main aspects of SDG 13 as basis for further translation into the project context.

SDG and target definition	**Identified topics/aspects**
SDG 13: Take urgent action to combat climate change and its impacts	→ *Reduce climate change and its impacts*
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	→ *Build resilience and capacity*
13.2 Integrate climate change measures into national policies, strategies and planning	
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	→ *Formulate climate change measures in strategies and policies*
	→ *Raise awareness on adaptation, mitigation and early warning*

As the scope of this guideline centres around SDG performance assessments, it intends to guide the indicators selection towards an assessment of "*how well does the project perform on the goal?"* and therefore omits the means of getting there. The intention of improving performance should lie in actual outcome, not in the means. There might be projects that perform well in terms of policies and strategies, but if these do not result in changes of the performance of the intended impact, they do not tell whether the project is actually contributing to changes in

the SDG performance. However, the means-based aspects might serve as inspiration for more action-based project specific indicators beyond the scope of this guideline.

As an approach to cover all aspects and the whole life cycle of the project, the guide proposes the development of an SDG screening table or checklist that can guide the user to identify potential relevance of each SDG. An example for this is presented below in Table 5, serving as a crude template, which can be used for inspiration at different project levels or sectoral purposes. For each SDG, the underlying targets must be consulted as a kind of mandatory inspiration, as they ensure that all aspects under the goal have been considered.

The relevant questions can differ a lot across different types of projects, and they should therefore be developed based on an analysis of the sector. The example in Table 5 is kept as a generic example, showing the concept for a few SDGs, with emphasis on the three SDGs 5, 12, and 13. In a full-size application of this guideline, all SDGs should be included in this list for the screening. The more specific the assessment is intended for, the more specific questions can be stated. Hence, for the consultancy sector this can be kept generic for all types of projects and beneficially made into derivatives of sectoral variations (e.g. building projects, food projects, etc.).

For the application of the screening table, the user should go through each of the SDGs one by one, for each of the life cycle stages and evaluate whether the aspects are relevant to the project being assessed. The evaluation can then be kept qualitative by describing the relevance and reasons for including/excluding an SDG, or semi-quantitative by indicating a categorical score (e.g. high, medium or low relevance). Which approach to use, might depend on the level of resources for carrying out the indicator selection assessment.

The table serves as basis for the initial selection but can also be updated after doing the indicator selection and performance assessment, where some aspects might be deemed irrelevant or more relevant than initially estimated.

Table 5. Example of guiding questions for screening potential SDG relevance to the project. The current list of questions should not be seen as exhaustive, but as support for developing more thorough tables matching the given context. All cells should be filled to achieve an exhaustive check-list.

SDG	Upstream (Scope 3)	Operation and energy purchase (Scope 1 + 2)	Downstream (Scope 3)
1	*...*	*...*	*...*
2	*…*	*...*	*...*
3	*...*	*...*	*...*
4	*...*	*...*	*...*
5	*Potential discrimination or violence against women among suppliers?* *Any policies on gender balance in supplier's? (E.g. empowering women workers)*	*Gender ratio in different employments in company facilities?* *Equal salary for equal work?*	*Possibility of product/service discriminating by gender?* *Any gender biases by design of the product service?*

SDG	Upstream (Scope 3)	Operation and energy purchase (Scope 1 + 2)	Downstream (Scope 3)
	Allow workers/employees to achieve domestic support?	*Women in leader roles in the company/project activities?* *Promoting equal responsibilities at home across genders (e.g. equal parental leave policies)* *Any policies/code of conducts related to discrimination, offending behaviour or violence?* *Respecting work-life balance?*	*Gender balance associated to potential workers related to application of the product/service?* *Any policies/code of conducts related to discrimination, offending behaviour or violence?*
6	…	…	…
7	*Energy embedded in purchased products?* *Energy security in location of suppliers?* *Energy efficiency related to upstream processes?* *Supplier's access to clean and affordable energy?* *Energy accidents in upstream processes?*	*Energy consumptions in company facilities?* *Company producing or managing energy?* *Share of renewable energy in purchased energy mix?* *Share of renewable energy in produced energy?* *Energy mix used for production of products?* *Energy efficiency on-site?*	*Does the company provide energy?* *Are large amounts of energy needed for the application?* *Does the product/service contribute to energy savings?*
8	…	…	…
9	…	…	…
10	…	…	…
11	…	…	…
12	*Production and consumption patterns upstream?* *Sustainable management and efficient use of natural resources among suppliers?* *Food losses and wastes from supply chain?* *Chemicals and wastes treatment upstream?* *Sustainable public procurement practices?*	*Production and consumption patterns onsite?* *Food losses and wastes on-site?* *Chemicals and wastes treatment on-site?* *Reporting on sustainability information regarding the company/project activities?*	*Production and consumption patterns downstream?* *Food losses and wastes on consumer site?* *Chemicals and wastes treatment on the consumer site?* *Product/service contribution to prevent consumption or reduce or reuse?* *Products reused or recycled after end lifetime?* *Product promote and inform about sustainable uses?*

SDG	Upstream (Scope 3)	Operation and energy purchase (Scope 1 + 2)	Downstream (Scope 3)
13	*Main suppliers' resilience and capacity towards climate change impacts?* *GHG emissions upstream processes?* *Awareness raising of climate change among suppliers?* *Climate policies of suppliers?*	*Project GHG emissions in company facilities?* *Energy purchase mix?* *Project's resilience towards climate change impacts?* *Awareness raising/education of employees related to the project?* *Policies or strategies for carrying out the project?*	*GHG emissions from use of service?* *GHG emissions from end of life?* *Product/services contributing to reliance or capacity building towards climate change?* *Investments fossil fuel/activities participating largely to climate change? Policies hereof?*
14	…	…	…
15	…	…	…
16	…	…	
17	…	…	

3.3 Step 3: SDG indicator selection

In this step, the indicators for the considered SDGs will be selected. The overall selection guide is presented in Figure 5. The main steps consist of i) preparation of the indicator bases, ii) testing individual indicators, and iii) testing the set of indicators. The figure is followed by a description of the main steps of the framework in further detail.

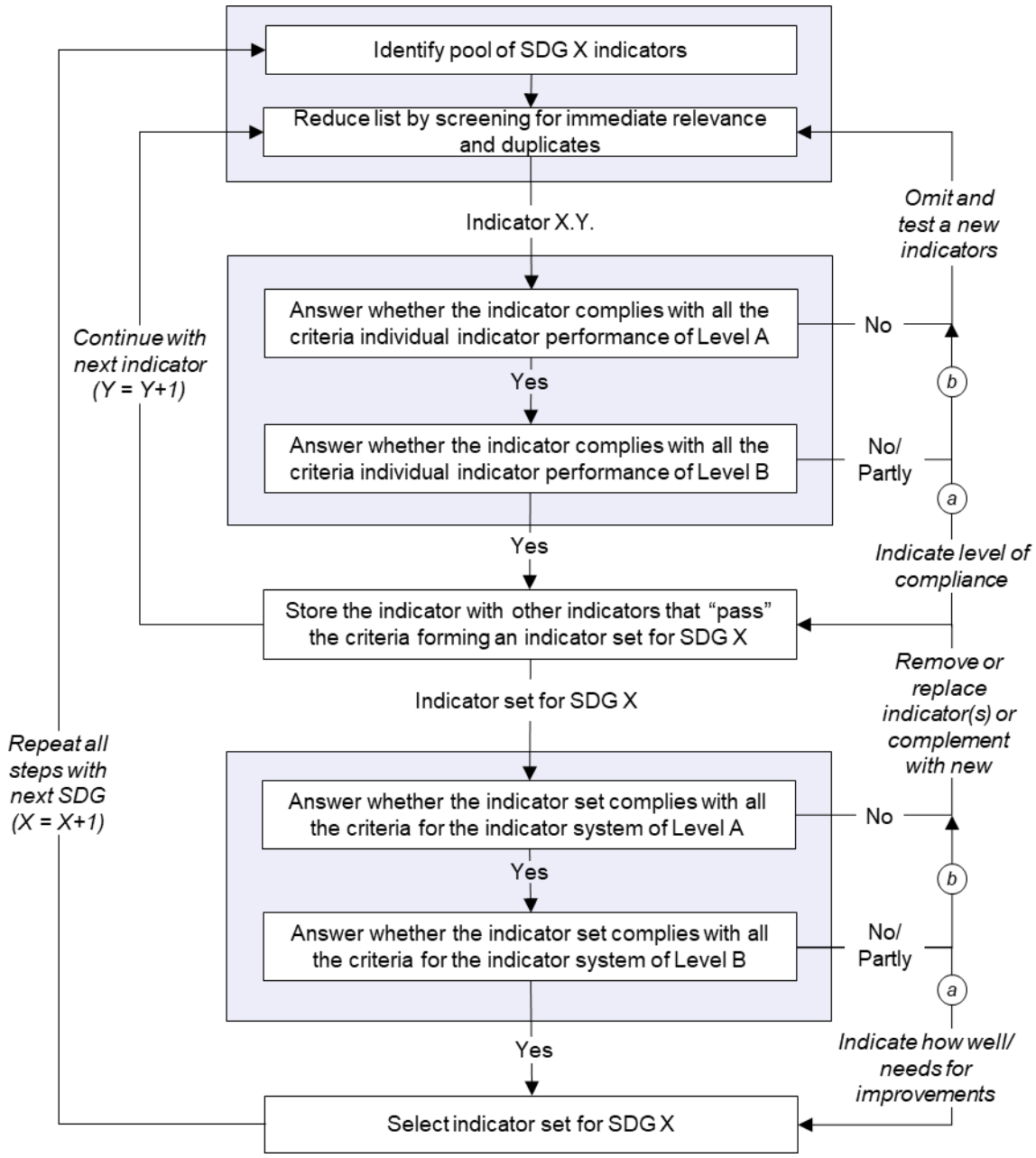

Figure 5. Indicator selection guide for SDG assessments in companies. The list of criteria for individual indicator performance can be found in Table 7 and the list of criteria for performance of the indicator set can be found in Table 10. The small circles with 'a' and 'b' indicates that it is optional to either keep the indicator(s) or improve it or the set. (Adapted from Gebara et al., 2024[11]).

3.3.1 Identifying an indicator basis for the selection

If an indicator set already exists and the intention firstly is to evaluate this set, one can start directly with the indicator testing step (i.e. starting with Indicator X.Y in Figure 5 and go to Section 3.3.2). If no indicator set exists already or the user wants to update/replace an existing set after evaluating their existing set of indicators, it is recommended to identify relevant sources and prepare a pool of indicators to select from.

Different indicator sources can be considered for selecting a good set of indicators. Firstly, the company/stakeholders might already have a number of indicators that are currently being used for assessing different aspects of sustainability performances of their practices or in some cases indicators to assess SDG performance have already been suggested. It can be a good starting point for basing the indicator testing and selection, as the indicators will have a clear link to the scope of concern, and the company (i.e. the people carrying out the assessment) is familiar with the indicators and most likely data will already exist to some degree. However, relying only on in-house indicators, one might risk overlooking relevant aspects that has not been considered so far and the indicators will most likely lead to a business-as-usual outcome.

Secondly, finding some external databases or collections of indicators that are relevant for the SDGs and the company and project scope would be preferred in order to get inspiration. The most exhaustive inventory that aims to collect SDG relevant indicators for businesses is the inventory of business indicators by SDG Compass[3], which already propose a link to the SDGs and their targets. Another relevant source is the *'Guidance on core indicators for entity reporting on contribution towards implementation of the Sustainable Development Goals*' by the UNCTAD[12], which provides a limited set of company indicators to assist streamlining reporting across entities. Databases of ESG indicators for businesses can also be used for inspiration, as these have been used for company assessment in the time before the SDGs were invented and can serve as a good basis for SDG indicator candidates as business level (e.g. Datastream's 'ESG datastream glossary').

Finally, global and national SDG indicators can be used for inspiration either directly if they can fit the company/project level scope or by translating it into a similar indicator. For projects in Denmark, this is specifically the Vores Mål ('Our Goals) indicators, which translate the SDGs into indicators in a Danish context. The official global level indicators suggested by the UN can also be considered.

Table 6 summarizes the different sources of inspiration; although not exhaustive, it serves as a starting point for the assessment including the pros and cons to be considered. It is recommended to combine different types of sources to sufficiently cover the best set of indicators (e.g. indicators that the company already use combined with an external source).

Table 6. Example of sources for inspiration tom identify indicators prior to the selection step.

Indicator sources	**Pros**	**Cons**
"In-house" indicators	• The company/practitioner is already familiar with it • Data will most likely exist • Good fit to the scope	• The possibility that some aspects might be overlooked • Might lead to business as usual

[3] https://sdgcompass.org/business-indicators/

Indicator sources	Pros	Cons
SDG Compass indicators[4]	• Extensive collection of indicators with company-level scope • Pre-made link to the SDGs	• Not all indicators might be relevant for the company/project of consideration • The large set of indicators can be overwhelming
Our Goals (Vores Mål)[5]	• Relevant in Danish context	• Indicators are not always relevant in a company/project level context
UN SDG indicators[6]	• Can inspire the development of indicators at project level with direct link to the SDGs and their targets	• Often not relevant to the scope of company and project level • Indicators are not always relevant in a Danish context
ESG indicator database (e.g. investment data from Refinitiv Datastream, Morningstar, Bloomberg)	• The indicator bases are rather large • They have a broad coverage of topics	• Link to the SDGs have not been pre-made • The lists might be overwhelming and require a lot of effort to sort and match to the SDGs
UNCTAD indicators[7]	• Relevant to business level • Proposed as SDG indicators with link to the overall sustainability dimension	• Not linked directly to a specific SDG • Not necessarily relevant at project level
Indicators defined in standards, like sources: [13–18]	• Reflect international consensus	• May not fit the specific application

3.3.2 Indicator selection criteria (individual indicator level)

After having identified the sources of potential indicators, each indicator needs to be evaluated against the list of criteria in Table 7. This part of the selection guide is presented in Figure 6 below. The list differentiates two levels of criteria, i.e. criteria that are mandatory for indicators to fulfil and criteria that are recommend to fulfil to the extent possible (see further explanation in the background report). The two levels are referred to as Level A and Level B, respectively.

[4] https://sdgcompass.org/business-indicators/

[5] https://www.dst.dk/da/Statistik/temaer/SDG/danske-maalepunkter

[6] https://unstats.un.org/sdgs/indicators/indicators-list/

[7] https://unctad.org/publication/guidance-core-indicators-entity-reporting-contribution-towards-implementation

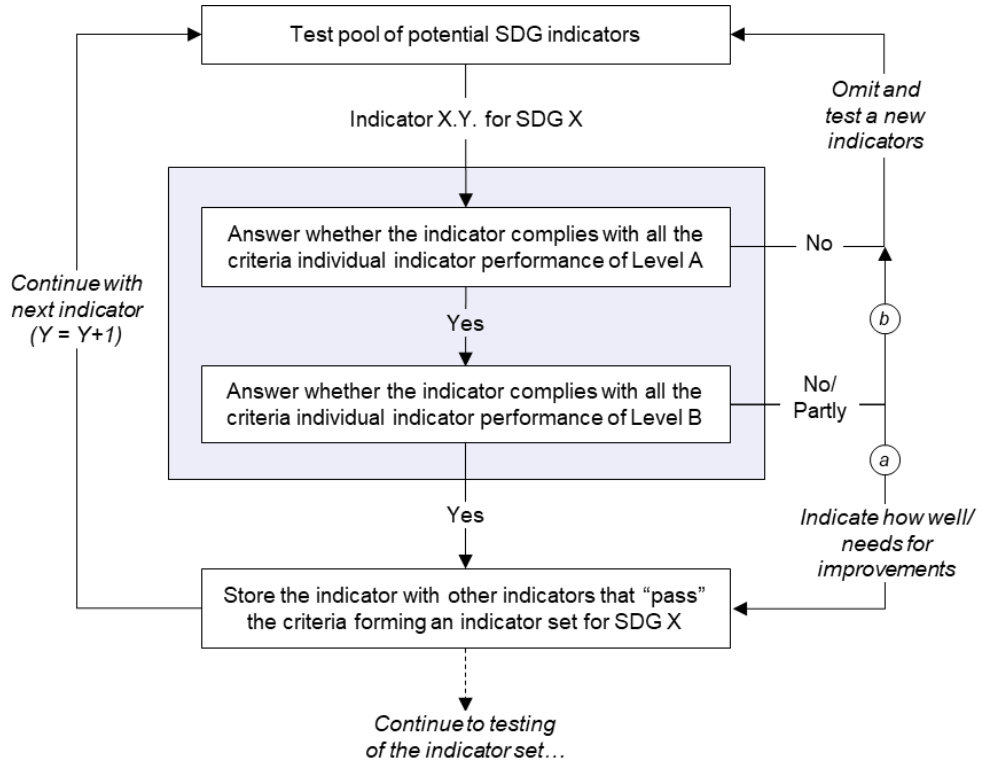

Figure 6. First part of the indicator selection for evaluating individual indicators. The criteria inputs to this part of the framework for selection are presented in Table 7.

Since the Level A criteria are mandatory, the indicators needs to fulfil the Level A criteria (i.e. Level A in Table 7) prior to "pass" as appropriate indicators. Each indicator is tested one by one starting for SDG X, indicating the first SDG to test (i.e. Indicator X.Y. is indicator Y for the considered SDG).

If an indicator does not comply with Level A criteria, it disqualifies and should therefore be disregarded and a new indicator can be tested. If the indicator complies with all the Level A criteria, it should be evaluated with the Level B criteria (i.e. Level B in Table 10). This list consist of recommended criteria, meaning that it is recommended that the indicators follow these criteria. However, acknowledging that it is not always feasible to comply fully with these criteria, it is not a strict requirement. Instead, the indicators should be evaluated based on how well they perform concerning the criteria. This guide proposes a set of guiding questions to assist the evaluation of these criteria (see questions in Table 7). These questions use a scale of three degrees of compliance: 'yes' (= *the indicator complies*), 'partly' (= *the indicator complies to come extent*), 'no' (= *the indicator does not comply*). Other scales or evaluation approaches can be used if more appropriate, as long as the justification for the indicator choices are documented. If an indicator does not answer strictly yes to all criteria of Level B one might either decide to keep the indicator and document its degree of compliance (a) or disregard the indicator (b).

Once indicator X.Y has been tested, the steps are repeated for the next indicator (i.e. Y = Y+1). When all potential indicators for SDG X have been evaluated as an appropriate set of indicators that have "passed" the criteria, continue to next step for evaluating the whole set of indicators.

Table 7. List of indicator selection criteria for single indicators. The Levels referred to as A and B indicate the hierarchy of testing ones indicators. Level A are mandatory criteria, for which indicators can be disqualified if they do not comply. Level B are recommended criteria that should be assessed secondary to Level A and can indicate further performance qualities of the indicator. A simplified version of the criteria description is provided here, while a full description is found in the background report. (Adapted from Gebara et al., 2024[11]).

Level	Criterion and brief description	Evaluation checks
	Relevance	
A	**Relevant to the scope** Relevant to the context and the issue being asked (e.g. spatial and temporal scope, area of concern).	- *It is relevant to the spatial and temporal scope; and* - *It is relevant to the area of concern/sector/topic*
A	**Relevant to the SDG** Relevant to the context of the SDG of consideration. It is important to have a clear overview of the important aspects that constitute the SDG in the given context.	- *It is targeting the SDG directly or one or more aspects that constitute the SDG of consideration (e.g. as identified from the SDG screening)* - *All targets under the SDG have been considered.*
	Scientific quality	
A	**Measurable** The indicator is something that can be measured (either quantitatively or qualitative). Meaning that what is intended to be measured is tangible and not a broader concept that consists of multiple dimensions.	- *It can be measured quantitatively; or* - *If not directly, it can be measured by a binary or categorical measure*
A	**Performance based** The indicator is measuring the performance of the SDG or a relevant aspect of the SDG. If the indicator is measuring something further back in the cause-effect chain, e.g. a driver or a more action-oriented indicator, e.g. response to the performance level, this is not measuring the performance and thus is not complying with the criterion.	- *It is relating to the performance of the whole or parts of the SDG; and* - *It is not leading or prescribing actions to reach/improve the SDG performance*
A	**Scientifically robust link to the SDG effect**	- *No cause-effect estimation modelling is required to assess the indicator performance; or*

Level	Criterion and brief description	Evaluation checks
	The indicator is scientifically robust in the field of concern. If cause-effect estimation modelling is required in the assessment method, it should be based a scientific pathways. If no model needed, the indicator is scientifically robust.	- *If cause-effect estimation modelling is required, the assessment method should be based on a scientific pathway, with scientific backing and general consensus*
A	**Comparable** The indicator is comparable across time, space and field. E.g. ensure comparability across companies (for corporate assessment), regions (for global and national assessments), years, etc.	- *It is comparable across time, e.g. not affected by external factors that are linked to the time; and* - *It is comparable across geographical areas (relevant within the scope); and* - *It is comparable across other actors within the scope of the assessment, e.g. countries/ regions/ organisations/ sectors/ fields (if used for inter-company, or inter-sectoral comparison)*
	Data	
B	**Data quality** The indicator is measured using high quality data, i.e. the data being from a reliable, trustworthy and sound source, and that it should be adequately documented.	Yes: - *The data coming from a reliable/ sound/trustworthy source; and* - *The data is accurate and precise* Partly: - *The data comes from a reliable/ sound/trustworthy source; and* - *The data serves as proxy for more precise data* No: - *Not applicable since no data; or* - *Data is not from a reliable source*
B	**Data availability** The data used for measuring the indicators is easily accessible and can be obtained with limited human and financial resources (e.g. calculations, processing).	Yes: - *The required data is available to the user; and* - *The data does not require any cost or extra calculations and processing*

Level	Criterion and brief description	Evaluation checks
		Partly: - *The required data is partly available; and* - *The data requires some effort to achieve or process (e.g. calculations, collection process, etc.)* No: - *The required data is not available; or* - *The data requires substantial effort (e.g. processing/calculations/high costs)*
	Acceptability	
B	**Broad acceptance** The indicator is generally accepted by involved parties (e.g. stakeholders, local society, end-users).	Yes: - It is generally accepted by the involved actors (e.g. stakeholders, users, etc.); and - Stakeholders and end-users were involved in developing the indicator or consulted when the indicators were selected Partly: - It is accepted by a large part of the involved actors - Only some involved actors were either included in the development phase or consulted for the selection process No: - Only accepted by few of the involved actors
B	**Compliance and consensus** The indicator should comply with existing systems or standards where these already exist or based on a general consensus within the field of use. New indicators can comply if used	Yes: - It complies with existing standards or practices within the field/sustainability area; or

Level	Criterion and brief description	Evaluation checks
	for updating standards or develop new standards.	- There is a general consensus about the use of the indicator within the field of use at a higher level; or - If the indicator is new: it will be used for updating current standards or suggesting new standards within a field of topic which will be coordinated at a higher level (e.g. sector, country) Partly: - It complies with existing standards or practices among some actors within the field/area; or - There is some consensus about use the indicator across actors No: - It does not comply with any existing standards or practices within the field - There is no consensus on the indicator nor a plan to achieve it.
	Application	
B	**Clarity and understandability** The indicator is understandable and unambiguous, uses clear language, and can be understood by users, stakeholders and policy makers.	Yes: - *It is easy to understand. I.e. uses understandable language, which can be understood by end users, stakeholder, and policy makers; and* - *It is clear how the indicator should be interpreted (e.g. what the desired direction towards sustainability is)* Partly: - *It can be understood by people with some knowledge about the topic; and* - *The indicator is hard to interpret*

Level	Criterion and brief description	Evaluation checks
		No: - *The indicator is not well defined/described or uses language which is hard to understand by lay people; and* - *The indicator is hard to interpret with regards to the issue of concern*
B	**Transparency** The indicator is transparently documented and can be replicated or is self-explaining.	Yes: - *The indicator is self-explaining; or* - *The methodology for assessing it is well documented and easy to replicate* Partly: - *The indicator is not self-explaining; or* - *Documentation for explaining the methodology is provided, but needs improvements* No: - *The indicator is not self-explaining; and* - *No documentation for explaining the methodology is provided*

Box 1. Example of evaluating indicators against the criteria

When performing the practical evaluation of the indicators, it can be an advantage to decide upon a scale of performance. An example of how this can be carried out is presented in Table 8 and Table 9 below. In Table 8, the indicators are simply evaluated based on strict requirements (i.e. yes or no) and are therefore removed if at least one criterion is not fulfilled. Table 9 gives an example of evaluating the Level B criteria and suggest a qualitative scale for assessing the sum of the indicators.

Table 8. Example of indicator evaluation against the mandatory Level A criteria.

Indicator example for mandatory indicators:	Relevance to scope	Relevance to SDG	Measurable	Performance based	Scientifically robust	Comparable	Assessment
Indicator X.1	yes	yes	yes	yes	yes	yes	*Pass*
Indicator X.2	yes	yes	yes	no	yes	yes	*Dismiss*

Table 9. Example of indicator evaluation against the recommended Level B criteria.

Indicator example for recommended indicators:	Data quality	Data accessibility	Data availability	Acceptance	Compliance	Clear and understandable	Transparent	Assessment
Indicator X.1	partly	yes	yes	yes	partly	yes	yes	*Good*
Indicator X.2	no	no	yes	yes	no	no	partly	*Poor*

3.3.3 Indicator selection criteria (indicator system level)

Having tested all the individual indicators in the potential pool of SDG indicators, this part of the guideline suggests evaluating the performance of the set as a whole following the steps in Figure 7. The concept of indicator sets to be mutually exclusive and collective exhaustive (i.e. MECE) is often mentioned in literature and used as main framework for defining the set of criteria here. As more criteria can be defined as sub-criteria under this concept, this guideline uses the ME and CE as two main groups for other more specific criteria to achieve both. Furthermore, two levels of the indicator criteria are also presented here and therefore a similar structure as for the one-by-one indicator testing in the previous part.

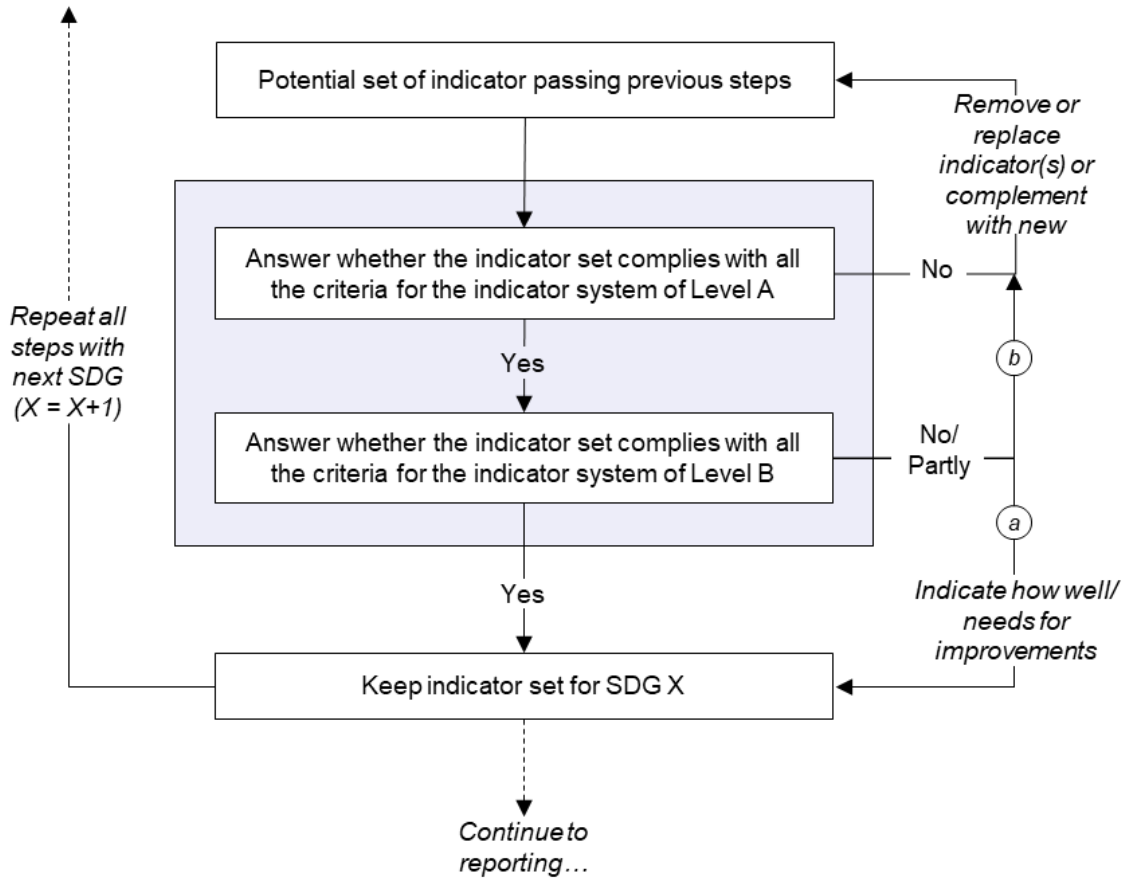

Figure 7. The second part of the indicator selection framework for testing of indicator set. The main inputs to second part of the framework for selection, presented in Table 10.

If the set does not comply with the Level A criteria (i.e. Level A in Table 10), the set needs to be updated to align with the needs of the unfulfilled criterion/a. For instance, if an indicator set does not comply with the criterion of "considering the whole life cycle", this criterion can be fulfilled by adding one or more indicators that tackle the missing part of the life cycle. Many of the criteria for the indicator system can be rather complex to evaluate without further assistance or explanation, although important to ensure a strong indicator set. Therefore, this guide suggests a simplified way to assess the criteria set by using the "evaluation checks" (see Table 10). Further elaboration on the criteria is provided in the background report. If the set complies with all Level A criteria, the assessment continues with the Level B criteria (i.e. Level B in Table 10). Here we propose only two criteria, which can be assessed similarly to the previous steps (i.e. yes, partly, no).

One of these concerns the limitation of the number of indicators in the set. There is no strict requirement for how to comply with this criterion, as it is hard to give a precise number of indicators that are suitable for a given case. Instead, it provides a recommendation for keeping the set as small as possible without losing other important information. The second concerns the criterion of linking to absolute sustainability. Since the concept is relatively new and its application needs development before it can be recommended as a strong requirement, it is also kept as a Level B criterion. As this is an emerging field and necessary for knowing how far we are from

becoming truly sustainable, it is, however, highly recommended for companies to start tapping into this field. Because of the current limitations, the definition is kept relatively broad for now, leaving it up to the user to explore the possibilities of this recommendation and inspire the indicator set towards including aspects of absolute sustainability. The concept is described in the background report with examples of how such linking can be approached.

Table 10. List of indicator selection criteria for a suite of indicators. The Levels referred to as A and B indicate the hierarchy of testing ones indicator set. Level A are mandatory criteria, for which indicator sets can be disqualified if they do not comply. Level B are recommended criteria that should be assessesecondary to Level A and can indicate further performance qualities of the indicator set. A simplified version of the criteria description is provided here, while a full description is found in the background report. (Adapted from Gebara et al., 2024[11]).

Level	Criterion and brief description	Evaluation checks
	Mutually exclusive	
A	**No redundancy/overlapping** Each indicator in the set is mutually exclusive (i.e. represents its own function and complement the others, while no indicator is overlapping or redundant with the rest).	- *Each indicator contributes with its own function and value to the set (i.e. no redundancies)*
A	**Avoid double-counting in cause-effect chain** The set of indicators should avoid covering indicators in different places of the cause-effect chain leading to the same effect, which leads to double counting of the same issue.	- *The set does not consists of indicators aiming to measure the same effect, from different places in the cause-effect chain*
B	**Limited in number** The number of indicators in the indicator set should limited in number to keep the set focused and manageable.	Yes: - *The set consist of relatively few headline indicators per SDG, with a clear focus and low complexity.* Partly: - *The set consist of several indicators, with some level of complexity without being overwhelming.* No: - *The set consists of many indicators per SDG, which is overwhelming and very complex.*

Level	Criterion and brief description	Evaluation checks
	Collectively exhaustive	
A	**Coverage of life cycle/ value chain** The indicator set should consider life-cycle thinking. Together, the set of indicators should link to the whole life cycle/value chain of the assessed system (e.g. from extraction and manufacturing to use and end of life, or Scope 1, 2, and 3).	- *The set consists of indicators that tackle all scope of the life cycle; or* - *If it can be well justified that a scope/life cycle stage is not important for the assessment, this should be explicitly communicated*
A	**Coverage of all relevant SDG aspects** Indicators do not come at the expense of other aspects or areas (e.g. burden shifting). When trade-offs exists they should be reflected in the set (e.g. include at least one indicator for each aspect of the SDG).	- The set consists of indicators that target all the main aspects of the SDG of consideration. E.g. based on the aspects identified in the SDG screening.
B	**Enable linking to absolute sustainability** The set consists of indicators that allow evaluation against an absolute sustainability target at a level, which is relevant within the SDGs of consideration. For the more outcome-oriented goals (e.g. "eradicate poverty"); the set includes indicators that can compare to consensus based, external, and independently defined target values. For the more transformative goals ("Promote inclusive and sustainable industrialization"); the set includes indicators that target aspects that are proved to leverage the action towards absolute sustainability. See further explanation in the background report.	Yes: - *Where relevant, the set includes indicators, for which external, independent and science- and/or consensus based targets are defined* Partly: - *Where relevant, the set includes indicators, for which targets are defined with some degree of science- or consensus based foundation.* No: - *The set does not contain any indicator for which external science based or policy based targets are defined. Only internally defined targets can be defined.*

Box 2. Example of evaluating the life cycle coverage

When checking an indicator system with respect to the criterion of covering the whole life cycle, a simple check can be to indicate which life stage each indicator tackles as presented in Table 11. This will give a good overview of the importance assigned by the set to each life cycle stage. As a rule of thumb, the system looks good if all life cycle stages have been addressed. However, the check should be seen in the light of the specific context, where it might make be argued that one life cycle stage should be given more or less weight across the indicators.

Table 11. Example of evaluating one criterion for life cycle coverage.

Indicators of the set	Upstream	Operation	Downstream
Indicator X.1.		x	
Indicator X.2.		x	
Indicator X.3.	x		
Indicator X.4.	(x)	x	(x)
Indicator X.5.			x

3.4 Step 4: Reporting of final indicator sets

As a part of this guideline, the results of the indicator selection and the reasoning behind the choices should be transparently documented. It is important not to leave an audience with doubts after presenting the results of and SDG assessment using the selected indicators. Therefore, to comply with the guideline, the questions in Table 12 are mandatory in the reporting the selection of SDG indicators. It is important to be transparent about all the steps where the user has influences the results. Thus, the final indicator sets might not be perfect, but transparent and honest documentation will reduce the risk of misinterpretation and thus minimise unnoticed bias.

Table 12. List of mandatory reporting questions for disclosing the results of the indicator selection and to keep in a full assessment to provide the reader with an informed basis for interpreting the indicator results.

Question to report on	Reasoning
Were some SDGs left out of the assessment? If yes, which ones? What was the reason?	*justify answer...*
Was an indicator set successfully selected, which aligns with all the mandatory criteria? If no, state the criteria that were not met, the main reason for this and whether further work will be initiated to overcome this.	*justify answer...*

Question to report on	Reasoning
How well does the indicator set comply with the criteria of Level B? A justified statement for each assessment against a criterion should be stated.	*justify answer...*
What are the main limitations of the selected set of indicators? E.g. some issues linked to the performance of compliance with the criteria?	*justify answer...*
What are the needs for improvements of the selected set? E.g. some data that needs to be improved?	*justify answer...*
Can the indicator set assess what was initially intended with the assessment?	*justify answer...*
Will the indicator set be used for the initially stated purpose?	*justify answer...*

Chapter 4. Case study results

In this chapter, we present some examples of test cases that have been used to validate the methodology. For all cases, we rely mainly on the SDG Compass business indicators as the indicator basis and complement with other sources or own suggestions where needed.

4.1 Case 1: Building project of a kindergarten (full guide application)

This case is based on a real case example, where consultancy engineers are asked to develop a building project in a municipality in the Greater Copenhagen area. A former school, which was closed eight years ago, has been left as an empty building for 8 years, and the municipality now wants to do something about the building to renew the area. Instead, a kindergarten is built on the same location, replacing the old school, while using many of the old building materials of the school. The new kindergarten will partly replace a facility placed elsewhere in the municipality, which offer day care for kids with extra needs. Therefore, some of the kids will be kids with different physical handicaps, which needs to be taken into account in the building design.

4.1.1 Setting the goal and scope

Goal

1. What is the intended application and reason for carrying out the assessment?

The commissioners want the project to be holistic and well balancing the different interactions between environmental, economic and social sustainability aspects. The project takes its starting point in the strategy of the municipality that want to translate the SDGs into concrete targets for sustainable growth and welfare. Before doing that, the stakeholders of the project want to know how the project perform towards the SDGs in its current description. With this assessment, they wish to identify relevant indicators for the SDGs to compare and complement with existing sustainability actions planned for the project.

2. Who is the target audience?
Stakeholders of project and the citizens in the municipality.

3. What are the influential actors involved?
Commissioner: The municipality
Involved actors:
NIRAS, Tscherning, Ason A/S, Aksel V. Jensen A/S Rådgivende Ingeniører and Lendager (circularity counselling and responsible for the design of the project description).

Scope

1. What is being assessed? What function or need does the project fulfil?
Building project of a kindergarten in a Danish municipality in the greater Copenhagen area. The Kindergarten is replacing an old school, which is not used anymore and attempts to reuse the old building parts of the existing building.

The kindergarten should host 100 kids during working hours, including kids with extra needs (e.g. physical handicap).

2. What are the system boundaries of the project?
The project considers the whole life cycle of the building project, i.e. from sourcing of building materials to end of life. Figure 8 illustrates the main physical steps that are included within the life cycle of the building. The figure only represent the direct physical actions and requirements linked to the project, however, each of these steps can lead to further effect or consequences, e.g. environmental or social impacts. The figure serves as basis for the SDG mapping onto the life cycle steps in the following section.

Some processes of the system were left out of the scope in this assessment. These are mainly linked to the use of the kindergarten, being the activities of running the place (e.g. employees working conditions, employees commuting to their workplace, interior in the building, etc.). These activities were considered beyond the scope of this project, since the commissioner has no influence on them and since they are too uncertain to guess (e.g. *how will the gender distribution of the employees be?).* If this should be assessed, the municipality could undertake a project that considers the performance of how the kindergarten is managed.

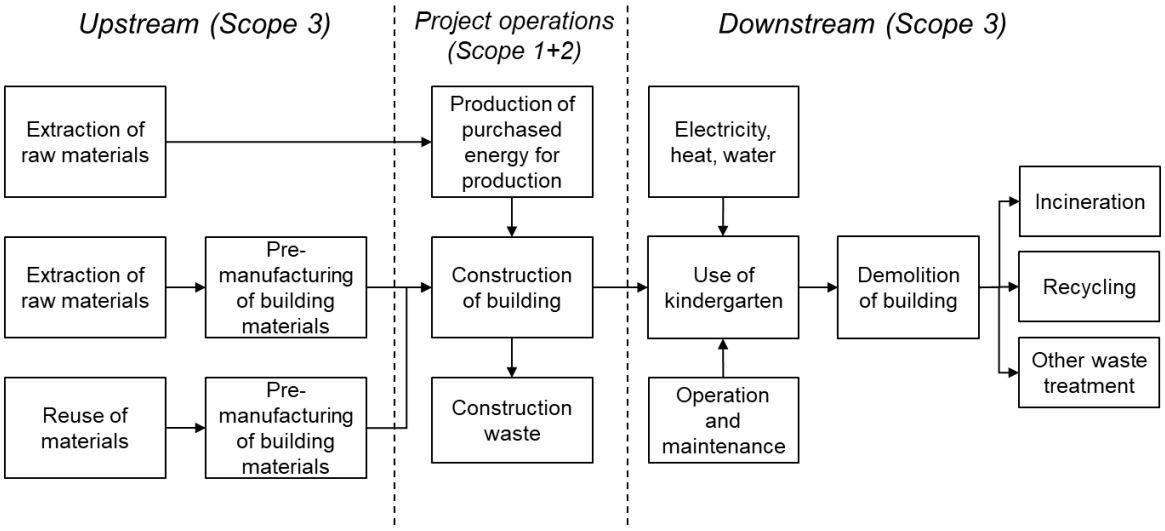

Figure 8. Illustration of the operational scopes of the Case 1 project.

4.1.2 Screening of relevant SDGs throughout the value chain

To evaluate the relevance of the SDGs, we apply the guiding questions of Table 5 and the same division of life cycle stages. We use the guiding questions to identify relevant aspects related specifically to this case, i.e. building a kindergarten. Table 13 presents the results for Case 1, where we have listed a number of relevant aspects to consider to each of the SDGs in each life cycle stage. For each, we have indicated whether the SDG is relevant in the respective life cycle stage by 'large' (=the project has a large influence), medium (=the project has some influence), and little (=the project has none or very little influence).

We deemed all the three SDGs tested in this project relevant to some degree (i.e. the project can influence the SDGs in all life cycle stages to some degree), where SDG 12 and 13 are deemed largely relevant in all stages, and SDG 5 with medium to large relevance. This was expected, as these SDGs are often used by companies because of their clear link to company activities and because of the popularity of measuring climate change impacts. This being said, this step of the suggested guideline is intended as an initial screening step prior to any assessment results have been obtained. Therefore, the "results" of the this screening should be seen as a preliminary step towards which SDGs to assess and as a guide that forces one to consider potential implications of each step in the life cycle and to document the reason for disregarding certain SDGs.

The case is tested for SDG 5, 12, and 13 to illustrate the uses in this guideline (note: all 17 SDGs should be screened in a full-size assessment). Therefore, no conclusions about the remaining 14 SDGs can be made based on this screening. Since all three SDGs were potentially relevant, we continue the indicator selection for all of them, keeping in mind those impacts may occur throughout the whole value chain.

Table 13. SDG screening table results for Case 1 by life cycle step. The table indicated the answers to which degree each SDG is relevant divided by three main life cycle steps. The degree is of relevance indicated by 'little', 'medium' and 'large' influence including a colour coding. The aspects that are deemed relevant to Case 1 are listed with each pertaining SDG and life cycle step. The screening is keep for SDG 5, 12, and 13 and therefore served as an example of a snapshot for a full-sizes SDG screening.

SDG	Upstream (Scope 3)	Project operation (Scope 1+2)	Downstream (Scope 3)
5	medium	large	medium
	- Gender equality among suppliers - Economic inclusion among suppliers - Incidents of discrimination and discrimination policies	- Gender equality among employees on the project - Salary inequalities - Policies on discrimination during project implementation - Access to sanitary facilities for all workers during project facilities	- The kindergarten offer public care-taking services (i.e. providing a service for all parents throughout the day) - The building facilities should be for all (e.g. inclusive for all genders, ethnicities, disabilities)
12	large	large	large
	- Resource use embedded in purchased products - Resource efficiency of suppliers - Waste generation and losses from upstream processes - Public procurement practices of materials for building of kindergarten	- Resources used for the building phase - Resource efficiency on-site - Waste generation and losses from the building phase - Reporting of sustainability information about the project	- Resources needed for using the kindergarten (e.g. energy, water, etc.) - Resource efficiency on-site - Measures taken to reduce waste generation and promote correct waste handling - Potential building design for reducing consumption - Potential for promoting and informing about sustainable uses and lifestyles
13	large	large	large
	- There will always be some GHG emissions associated	- Building projects will always have some GHG emissions associated to	- There will be GHG emissions associated to the use

SDG	Upstream (Scope 3)	Project operation (Scope 1+2)	Downstream (Scope 3)
	with upstream-processes in building projects - Due to recycling of materials, there might also be some GHG emission gains - Climate policies for suppliers to follow??	the operation phase, hereunder due to energy use - It could be relevant to consider what GHG related policies or strategies that have been followed carrying out the project	of service and GHG emissions from end of life - Building designed to reduce impacts? - It could be relevant to consider the building's resilience towards climate change impacts now and in the future

4.1.3 Selecting indicators

Based in the initial screening of the SDGs mapping them onto the life cycle of the projects, we identified potentially relevant indicators for the three SDGs. The SDG Compass database for business indicators was used as the main source for identifying and select indicators using the guideline.

Initially, all the indicators that were marked as relevant for each SDG by the SDG Compass were extracted and scanned for duplicates and immediate relevance to the context according to the authors. For SDG 5, we shortlisted the initial set from 88 to 20 indicators. These steps can be carried out in different ways, and are initially based on the individual evaluation by the one carrying out the selection. The initial screening was used to trim the indicator sets to make them less overwhelming, prior to applying the indicator selection criteria. Then, based on the assessment of the criteria, the more indicators can be included again if needed.

Most of the indicators that we initially shortlisted were all deemed relevant to the context and to the SDG, as the full indicator list was sorted based on relevance. Concerning the general quality criteria, most indicators were found measurable either quantitatively or semi-quantitatively. Some were not measurable in their initial form where concepts were not well defined and therefore not clear in what to measure. Furthermore, they were also all deemed comparable either in their pure form or if adding a normalisation step and scientifically robust as the indicators were either directly targeting the SDG effect or backed by scientific cause-effect model.

The main issue with many of the remaining indicators at this point was to comply with the criterion of being "performance based". Many relevant indicators initially considered for the three SDGs focused on whether the projects have certain policies or strategies for improving performance, e.g. for SDG 5: "whether the project system have a policy/code addressing workplace harassment" and for SDG 13: "whether the company have a policy to improve emission reduction?". While these were deemed relevant within the context and the SDGs, they do not measure the actual performance. Instead, they suggest measures of potential responses to change

the SDG performance (i.e. leading indicators). Therefore, we deemed these indicators unqualified for the purpose of an SDG performance assessment. Thus after assessing the indicator against the Level A criteria, the list was further reduced. However, the removed indicators were kept in the list for potential inspiration for developing more project-specific indicators, although beyond the scope of this assessment.

The final proposed asset of indicators, which was derived based on the guideline, is presented in Table 14 for each of the three SDGs including 9 indicators for SDG 5, 10 for SDG 12 and 7 for SDG 13. The topic that each indicator tackle within the SDG is also presented to give an overview of how the indicators represent the SDG performance. The initial source, which was used as inspiration or directly used to suggest the indicators are also indicated in the table.

Table 14. Proposed indicators for SDG 5, 12 and 13 for Case 1. The indicators were selected based in the SDG Compass database for business indicators and selected using the methodology. Full description of the indicators, source of documentation and criteria assessment are detailed in the electronic appendix.

Proposed indicator	**Theme**	**Source of inspiration**
SDG 5		
Total number of incidents of discrimination during the project implementation	Discrimination	GRI (*adapted*)
Whether the service of the building project has any gender biases (yes/no)	Discrimination	*Author's suggestion*
Whether employees/workers have equal access to sanitary facilities during the project implementation (yes/no)	Discrimination	*Author's suggestion*
Whether there is equal access to the facilities in the kindergarten during the use stage (yes/no)	Discrimination	*Author's suggestion*
Number of suppliers owned by women; suppliers owned or staffed by members of vulnerable, marginalized or underrepresented social groups; and small and medium sized suppliers.	Economic inclusion	GRI
Total workforce, with breakdown by employment type, contract and gender	Diversity	UNCTAD
Number of suppliers identified as having significant actual and potential negative social impacts, such as discrimination, harassment	Harmful practices/discrimination	GRI
Whether the project supports public infrastructure services (yes/no)	Public services	GRI

Proposed indicator	Theme	Source of inspiration
Ratio of basic salary and remuneration of women to men by employee category, by employment type	Economic inclusion	GRI
SDG 12		
Energy consumption i) outside of the organization and ii) within organisation	Energy use	GRI
Energy intensity	Energy use	GRI
Water consumption	Resource use	CEO Water Mandate's Corporate Water Disclosure Guidelines
Water intensity	Resource use	CEO Water Mandate's Corporate Water Disclosure Guidelines
Total use of materials by weight or volume	Resource use	GRI
Total water discharge by quality and destination	Waste reduction	GRI
Total weight of waste by type and disposal method	Waste reduction	GRI
Type and sustainability performance of sourcing initiatives	Resource use	GRI
Amount for significant air emissions, including NOX, SOX, POPs, VOCs, Hazardous air pollutants (HAP), particulate matter, and other standard categories of air emissions identified in relevant regulations	Substance emissions	GRI
Ecological Footprint	Sustainable production and resource use	Quick guide to the Aichi Biodiversity Targets
SDG 13		
Direct greenhouse gas (GHG) emissions (Scope 1) in CO2 equivalents.	Emissions	GRI
Energy indirect greenhouse gas (GHG) emissions (Scope 2) in CO2 equivalents	Emissions	GRI

Proposed indicator	**Theme**	**Source of inspiration**
Other indirect greenhouse gas (GHG) emissions (Scope 3) in CO2 equivalents	Emissions	GRI
Avoided emissions from application of service (building) (either in CO2 equivalents or qualitatively describe whether low emission product or avoided other emissions from application)	Emissions	CDP Climate Change 2017 (*adapted by Author*)
Emission intensity for the project's combined Scope 1 and 2 emissions in metric tonnes CO2e per i) unit currency total revenue and per ii) full time equivalent (FTE) employee	Emission intensities	CDP Climate Change 2017 (*adapted by author*)
Emission intensity for the project's indirect Scope 3 in metric tonnes CO2e per i) unit currency total revenue and per ii) full time equivalent (FTE) employee	Emission intensities	CDP Climate Change 2017 (*adapted by author*)
Whether the building designed to be resilient to potential climate change effect now and in the future (yes/no)	Resilience	Author's suggestion

After arriving at a set of indicators fulfilling the Level A criteria, we assessed Level B criteria to see the room for improvement and potential strengths and limitations of the indicators. As this case is partly hypothetical, we showcase the testing based on hypothetical answers to those questions. Generally, almost all indicators were judged as fully or partly compliant with the Level B criteria, except from a few such as "*Other indirect greenhouse gas (GHG) emissions (Scope 3)",* were we assumed data was not available to date, the data quality and availability was not compliant. However, the indicator was kept in the set, since it was deemed a good indicator based on the other criteria and since actions will be undertaken in the near future to approximate data for this indicator. Excluding the indicator fully would not motivate this task and potentially lead to overlooking this aspect. The detailed assessment for each indicator and SDG can be found in the electronic appendix.

Our proposed set of indicators for each SDG align with the Level A criteria for the indicator system, as any redundant indicator were removed from the set. To avoid double-counting in the cause-effect chain, some indicators were removed further down the chain compared to indicators that measured performance closer to the effect (i.e. performance). An example here is the indicators "*total energy consumptions*" and "*total GHG emissions*". While both measure a performance of the system, the latter is more directly linked to the performance of the topic (i.e. climate change), while the former is suggesting a potential cause for this. Thus, energy consumption was removed from the set of SDG 13. To avoid overlooking any aspects in certain life cycle stages, we applied the same approach as suggested in Box 2. Thus, in the final indicator sets, all three life cycle stages were addressed, although not always for all topics. E.g. for SDG 5, the

upstream and operation were mainly tapped with regards to actual performance regarding working conditions, while the downstream was only tapped based on the design facilities. As the actual working conditions of running the kindergarten were not assessed in the scope of Case 1, it justifies the lack of indicators concerning this aspect. For the criterion 'coverage of all relevant SDG aspects', we marked the topic of each of the included indicators, to make sure that all aspects of the SDG were addressed. For all three indicator sets, some aspects were left out, as these were deemed irrelevant for the scope of Case 1, such as addressing food wastes in SDG 12, as this was not considered in the scope. See further justifications in the electronic appendix. To systematically assess whether all life cycle stages and SDG aspects were addressed, the indicators were mapped onto the matrix presented in Table 15. When not applicable or deemed irrelevant, this is justified in the matrix.

Table 15. Overview of indicators for SDG 13 for Case 1 and their coverage of the life cycle and the SDG.

SDG 13 topics	Upstream	Operation	Downstream
Emissions	• Other indirect greenhouse gas (GHG) emissions (Scope 3) in CO2 equivalent	• Direct greenhouse gas (GHG) emissions (Scope 1) in CO2 equivalent • Energy indirect greenhouse gas (GHG) emissions (Scope 2) in CO2 equivalent	• Other indirect greenhouse gas (GHG) emissions (Scope 3) in CO2 equivalent
Emission intensities	• Emission intensity for the project's indirect Scope 3 in metric tonnes CO2e per i) unit currency total revenue and per ii) full time equivalent (FTE) employee	• Emission intensity for the project's combined Scope 1 and 2 emissions in metric tonnes CO2e per i) unit currency total revenue and per ii) full time equivalent (FTE) employee	• Emission intensity for the project's indirect Scope 3 in metric tonnes CO2e per i) unit currency total revenue and per ii) full time equivalent (FTE) employee
Resilience capacity	*Not considered relevant at project level, as the project cannot influence the capacity building for the suppliers*	*Not considered relevant at project level, as the operation is short term and no specific measures to build capacity is needed for the building phase*	• whether the building designed to be resilient to potential climate change effect now and in the future (yes/no)
Strategies and policies	*Not considered for performance assessment, considered a driver for change*	*Not considered for performance assessment, considered a driver for change*	*Not considered for performance assessment, considered a driver for change*

SDG 13 topics	Upstream	Operation	Downstream
Awareness raising	*Not considered for performance assessment, considered a driver for change*	*Not considered for performance assessment, considered a driver for change*	*Not considered for performance assessment, considered a driver for change*

For the Level B criteria for the indicator system, the final sets were considered limited in size and thus feasible to assess (i.e. maximum 10 indicators per set). With regard to the link to absolute sustainability, we used the approach of matching each SDG with relevant aspects for which some degree of consensus about defining a level of sustainability has been obtained (i.e. see background report on absolute sustainability). Thus for SDG 5, this concerns aspects on gender inequality, we asked "*which indicators can be used to measure the performance towards zero inequality and zero discrimination?"* All the indicators in the final set can relate to this question and be benchmarked against desired performance, i.e. towards becoming absolute sustainable with regards to SDG 5. For SDG 12 and 13, similar questions were raised: "*which indicators can measure the performance of water use, chemical pollution and air pollution?",* and *"…climate change impacts?*"

4.1.4 Reporting of justifications and limitations

The proposed set of indicators for each of the three SDGs are all deemed suitable for assessing SDG performance of the Kindergarten project. Following the guideline and assessing each indicator against indicator selection criteria lead to the proposed set of indicators, which all comply with the mandatory criteria. Table 16 presents the answers to the reporting questions.

Table 16. List of mandatory reporting questions to include when disclosing the results of the indicator selection and to keep in a full assessment to provide the reader with and informed basis for interpreting the indicator results.

Question to report on	Answer
Where some SDGs left out of the assessment? If yes, which ones? And What was the reason?	*Yes, the assessment only considered part of the SDGs to showcase the use. However, all SDGs should be considered in the full-sized assessment. Out of the three SDGs considered, no SDGs were excluded, as they were all considered relevant to the scope.*
Was an indicator set successfully selected, which align with all the mandatory criteria? If no, state the main reason for this and whether further work will be initiated to overcome this.	*Yes, an indicator set for each of the three SDGs were selected and proposed successfully aligning with the mandatory criteria.*

Question to report on	Answer
How well does the indicator set comply with the criteria of Level B? A justified statement for each assessment against a criterion should be stated.	*The assessment of all the criteria are reported in the electronic appendix, including a justification for the assessment for each criterion.*
What are the main limitations of the selected set of indicators? E.g. some issues linked to the performance of compliance with the criteria?	- *All three sets of indicators include indicators that have issues concerning the data availability linked to scope 3 impacts, mainly linked to suppliers* - *The linking to absolute sustainability still has some limitations mainly due to the lack of extensive review of good indicators within the concept* - *other?*
What are the needs for improvements of the selected set? E.g. some data that needs to be improved?	- *…*
Can the indicator set assess what was initially intended with the assessment?	*Yes, all three indicators can be used to assess the SDG performance of the project to thee degree that data is available. Where not available, this should be explicitly stated to avoid misinterpretation of the assessment results.*
Will the indicator set be used for the initially stated purpose?	*Yes, the commissioners intend to use the indicator sets for assessing the SDG performance of the project. If further improvements of the sets are identified later, the sets will be adapted accordingly.*

4.2 Case 2: Infrastructure project (selected examples of the guideline)

This case is developed as a fully hypothetical case to exemplify the uses for a project related to infrastructure. The project considers the construction of a new electrified railway in Denmark, between to larger cities in Fyn and Jutland respectively. The new railway enables trains to achieve a faster speed.

4.2.1 Setting the goal and scope

Goal

1. What is the intended application and reason for carrying out the assessment?
The commissioners of the project would like to get an overview of the SDG implications that are connected to the project. Based on the assessment, the stakeholder want to evaluate whether the project should be initiated in its current form other whether any changes should be made to improve the project.

2. Who is the target audience?
The Ministry of Transportation in Denmark.

3. What are the influential actors involved?
Except from the commissioners, a consultant engineering firm specialised in construction and infrastructure projects.

Scope

1. What is being assessed? What function or need does the project fulfil?
The project considers the construction of a new electrified railway in Denmark, between to larger cities in Fyn and Jutland. The new railway enables people to travel between the two cities within a much shorter time than what is currently possible. The new railway replaces the current railway. Further, the project is initiated to support the vision of reducing the travel time between the larger cities of Denmark.

2. What are the system boundaries of the project?
The project considers the whole life cycle of the infrastructure project. Figure 9 illustrates the main physical steps that are included within the life cycle of the project. The overall steps included are similar to the steps of Case 1, although more specific activities within each step could be further elaborated and detailed to the railway. The activities there are not considered within this project, are mainly linked to the use of the railway, hereunder which whether any improvements with be done to the train, how many people uses it, etc.). Thus, this was not included in the scope of this project.

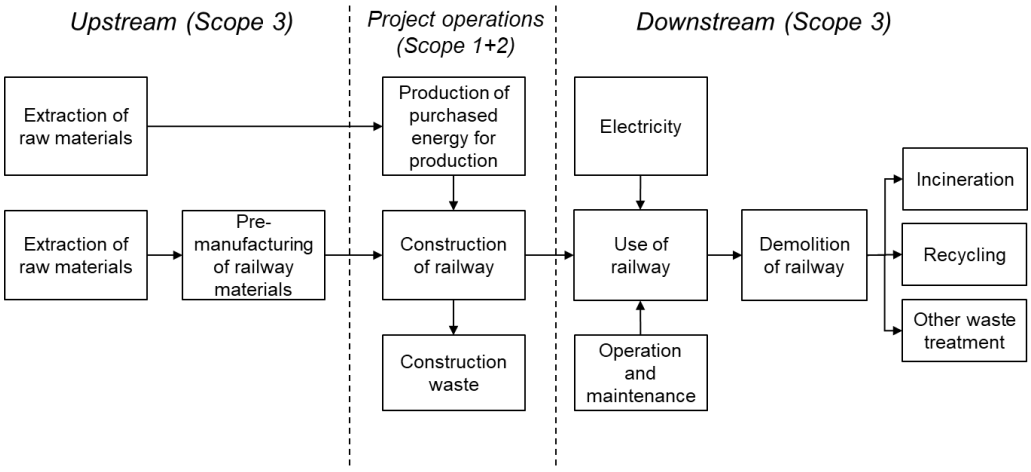

Figure 9. Illustration of the operational scopes of the Case 2 project.

4.2.2 Screening of relevant SDGs throughout the value chain

To evaluate the relevance of the SDGs, we apply the guiding questions of Table 5 and the same division of life cycle stages. The guiding questions were used to identify relevant aspects related specifically to this case, i.e. building a kindergarten. Table 17 presents the results for Case 2, where we have listed a number of relevant aspects to consider to each of the SDGs in each life cycle stage. Each cell indicates whether the SDG is considered relevant to scope for each life cycle stage. This is indicated 'large' (=the project has a large influence), medium (=the project has some influence), and little (=the project has none or very little influence). Since the assessment has not been carried out prior to this screening, the relevance does not reflect how much the project might contribute, but instead whether the project has some level of influence (either small or large).

All three SDGs were considered relevant to some extent, where project was only deemed to have little influence on SDG 5 for the downstream of Scope 3. The building of the railway will not have any influence on relevant SDG 5 aspects in the way the railway is used such as whether the trains are inclusive or not as this is considered outside of the scope. This case therefore has less influence in this stage, compared to the building case (i.e. Case 1), where this was deemed 'medium' since the project has an influence on how the kindergarten is built and can therefore influence certain inclusivity aspects (e.g. "is the building accessible for all?").

For SDG 12 and 13, the downstream of Scope 3 were deemed medium. Even though the project has limited influence on the operation of the railway, the railway might still contribute to changes in travel patterns and energy consumption as an effect of how the project is implemented. The project itself can potentially lead to reduced energy use and emissions from changes in consumption patterns. However, the project has no direct influence on the activities in this scope, which is why it is deemed medium here instead of large as in Case 1.

Table 17. SDG screening table results for Case 2 by life cycle step. The table indicated the answers to which degree each SDG is relevant divided by three main life cycle steps. The degree is of relevance indicated by yes, potentially and no including a colour coding. The aspects that are deemed relevant to Case 1 are listed with each pertaining SDG and life cycle step. The screening is keep for SDG 5, 12, and 13 and therefore served as an example of a snapshot for a full-sizes SDG screening.

SDG	Upstream (Scope 3)	Project operation (Scope 1+2)	Downstream (Scope 3)
5	**medium**	**large**	**little**
	- It might be relevant to consider the gender equality policies among the suppliers	- Gender equality among employees on the project - Salary inequalities - Policies on discrimination during project implementation	The project cannot affect the use stage for the rail way and no inherent implications related to gender equality is present.

12	**large**	**large**	**medium**
	- Resource use embedded in purchased products - Resource efficiency of suppliers - Waste generation and losses from upstream processes - Public procurement practices of materials	- Resources used for the construction phase - Resource efficiency - Waste generation and losses from the construction phase	- It might be relevant to consider whether the new railways contributes to changes in energy consumption in the use stage
13	**large**	**large**	**medium**
	- GHG emissions associated with upstream-processes - Climate policies for suppliers to follow	- GHG emissions associated to the operation phase, hereunder due to energy use	- It might be relevant to consider whether the new railways contributes to changes in climate change impacts in the use stage

4.2.3 Considerations on indicators

To arrive at a good indicator set for this case, we could follow the same steps as in Case 1. Thus, consequently, we will end up in very similar indicator sets as suggested is that case (see indicators in Table 14) as the indicators are focusing on the SDG performance, and thus can easily be adapted to different contexts. Instead of focusing on building performances for some of the indicators, this would be changed to the given context here.

A fully different set of indicators could potentially be derived, starting from a different indicator pool and being performed by different practitioners. Nevertheless, it is expected that sets of similar indicator aspects would be derived for such project of similar nature.

4.3 Case 3: SDG screening of food project

As a third hypothetical example, we can consider the situation of a food processing case focusing on producing a plant-based protein alternative to the conventional meat-based. The goal and the scope of such a project would be similar to the two previous cases, where it would cover upstream activities of sources the materials (i.e. ingredients), processing of the product, and downstream processes including use and end of life (i.e. consuming the product and wastes).

Table 18 shows an example of the how the SDG screening for such a case could look like. Similar to Case 1 and 2, the least influence is considered to be in the downstream of Scope 3 as the project cannot directly influence this stage. However, as for the infrastructure case (i.e. Case 2), this project could itself have some influence on the consumer choices, which can potentially affect social and environmental impacts. Although such influence can seem far-fetched from what the project can directly affect, it is still important to consider as this can be used to assess the project's impacts prior to implementation and assess the overall contribution that such project has to society.

Table 18. SDG screening table results for Case 1 by life cycle step. The table indicated the answers to which degree each SDG is relevant divided by three main life cycle steps. The degree is of relevance indicated by yes, potentially and no including a colour coding. The aspects that are deemed relevant to Case 1 are listed with each pertaining SDG and life cycle step. The screening is keep for SDG 5, 12, and 13 and therefore served as an example of a snapshot for a full-sizes SDG screening.

SDG	Upstream (Scope 3)	Project operation (Scope 1+2)	Downstream (Scope 3)
5	**medium**	**large**	**little**
	- Gender ratio among supplier (incl. upstream farmers) - Economic inclusion among suppliers (incl. upstream farmers)	- Gender equality among employees on the project - Salary inequalities - Policies on discrimination during project implementation	The project has no influence on the SDG in the use phase of this project, as the food products accessibility is considered independent of gender. The project is not considered to have a potential for improving gender equality.
12	**large**	**large**	**little**
	- Resource use embedded in purchased products - Chemical uses in the supplies (e.g. fertilizers) - Resource efficiency of suppliers - Waste generation and losses from upstream processes	- Resources used for the processing phase - Resource efficiency on-site - Waste generation and losses from processing	The project has very limited influence on how the consumer handles the product. Potential influence could be communicating to the consumer how to handle wastes.
13	**large**	**large**	**medium**

SDG	Upstream (Scope 3)	Project operation (Scope 1+2)	Downstream (Scope 3)
	- GHG emissions associated with upstream-processes of farming and processing - Climate policies by the suppliers? - Are the suppliers resilient to climate change impacts?	- GHG emissions associated to the processing phase	- No direct impacts from eating the food which is related to the project - Potential influence through cost and branding of the product leading to change the eating patterns

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