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## Scoping phase comparison of development opportunities by making use of publicly available sustainability information

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### Abstract

With sustainable business strategies and sustainability reporting now a norm, the public domain has in recent years been flooded with sustainable development information from a wide range of organizations. Although this information is generally retrospective in nature, an opportunity exists to make use of this information to compare the impact of different development opportunities prospectively, based on the performance of similar industries elsewhere. This paper therefore evaluates the potential of using publicly available sustainability information to enhance scoping phase decision-making by policymakers in order to prioritize projects that have the most potential for creating sustainable outcomes. The paper outlines a concept model for using sustainability information to compare development opportunities, followed by an analysis of five prominent international sustainability reporting frameworks at the hand of specific criteria to establish which framework would be most suitable to serve as basis for such a model.

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### 1. Introduction

Policymakers are often faced with the difficult decision of where to focus limited resources regarding the development of new industries in countries where such industries are lacking. Such decisions are further complicated by the demands of sustainable development which necessitate the assessment of development potential not only in terms of economic aspects, but also taking the social- and environmental aspects into account.

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It is therefore not surprising that feasibility studies are recognized to be an important part of the pre-investment phase of development projects [1]. Due to the considerable complexity of aspects to be taken into account and the substantial amount of time, effort and funding typically involved in feasibility studies, the feasibility study process has evolved to a point where it is generally an iterative, multiphase process. Feasibility studies generally consist of three phases, namely the conceptual or scoping phase, followed by the preliminary or prefeasibility phase and concluded by the final or definitive phase. The focus of the feasibility study narrows and the resources invested as well as the value created by the study increases with each consecutive phase [2].

The scoping phase is of particular relevance to the present investigation. Being the first stage in the feasibility assessment process, the scoping phase generally aims to “define the potential of a project, eliminate those options that are unlikely to become optimal, and determine if there is sufficient opportunity to justify the investment required for further studies” [3]. It is therefore desirable that the scoping phase be concluded quickly and without considerable resource investment, yet reaches an accurate and transparent conclusion as to which opportunities hold the most potential for sustainable growth. Benefit measurement modeling approaches, including comparative models, scoring approaches, traditional economic models and group decision techniques [4], are typically used to reach such conclusions. However, the use of such models are laborious, time consuming and expensive [5], often as a result of the data requirements of these models [4]. These methods can therefore not be readily used in the scoping phase and typically only form part of latter, more detailed feasibility studies.

Sustainable business strategies and sustainability reporting has become a norm in recent years [6] and, subsequently, the public domain has been flooded with sustainable development information from a wide range of organizations, from almost all industries. This has produced an opportunity to develop models that make use of this easily accessible information to assess the feasibility and potential impact of different development opportunities, based on the performance of similar industries elsewhere. This may be especially useful if a model can be developed that makes use of sustainability information as presented in sustainability reports, thereby greatly simplifying and speeding up the process of data collection. Although many different sustainability reporting frameworks and guidelines are used in the preparation of sustainability reports, some prominent international frameworks, such as the Global Reporting Initiative (GRI) G4 Reporting Framework, are very widely used. It is therefore sensible to develop a model that makes use of the information disclosed according to the guidelines provided by such prominent frameworks.

A model of this kind would typically be useful in the scoping phase of the feasibility assessment process, as the aim of such a model is the rapid evaluation of different development opportunities and the conclusions may therefore not necessarily exhibit a sufficiently high level of accuracy as required for detailed feasibility assessments.

This paper ultimately aims to evaluate the potential of using organizational sustainability information available in the public domain to enhance the efficiency of scoping phase decision-making by policymakers in order to rapidly prioritize projects that are most likely to produce better sustainability outcomes. This paper therefore starts by discussing a concept structure for a model that makes use of sustainability data typically reported in sustainability reports. Requirements for the framework on which such a model can be based are then outlined. Finally, five prominent international sustainability reporting frameworks are analysed in terms of the previously defined requirements in order to identify those most suitable to serve as basis for the development of the abovementioned model.

## **2. Concept model structure**

Sustainable development has traditionally been defined in terms of the Triple Bottom Line (TBL), a term coined by Elkington in 1994, referring to the equal importance of economic-, environmental- and social value creation in an organization [7]. It is therefore not surprising that with the advent of sustainability reporting and the subsequent development of some of the most prominent sustainability reporting frameworks, the triple bottom line was used as foundation [8]. Some more recent frameworks, like the International Integrated Reporting Council’s (IIRC) Integrated Reporting (<IR>) Framework, is based on the concept that sustainable development progress can be measured in terms

of value creation in six capitals within an organization, namely financial-, manufactured-, intellectual-, social and relationship-, human-, and natural capital [9].

Irrespective of the dimensions in which sustainable development progress is measured, most sustainability reporting frameworks define a number of aspects in these dimensions that have to be measured and reported periodically in order to track sustainable development progress. Many frameworks further also define specific indicators to be used to measure progress in terms of these aspects, for example the GRI G4 Sustainability Reporting Guidelines [10], although some frameworks, like the IIRC <IR> Framework, favor the flexibility of not defining specific indicators that have to be applied by all organizations [9].

The requirement that all aspects of sustainable development be taken into account, coupled with the complexity of aspects to be measured, means most frameworks make use of a fairly large number of indicators. Most often, the usefulness of these indicators for decision-making purposes is limited by the inability of the user to draw an objective conclusion by considering all the individual indicators and their interrelationships [11]. As a result, the potential usefulness of a model that captures the essence of all the individual indicators and produces one or a few indices on which decisions can be based is widely discussed in literature [11, 12, 13, 14]. It is therefore deemed unnecessary to discuss the details of development of such a model in this paper; rather the potential use of such a model is elucidated briefly.

It is envisaged that the model will aggregate the indicators reported according to the guidelines of a reporting framework into composite indices – an index for each dimension of sustainable development as defined by the relevant framework. Figure 1 illustrates the comparison of development opportunities by considering three composite indices based on the triple bottom line definition of sustainability. As individual sustainability indicators are aggregated to form a composite index for each dimension, the results are transparent and easily analysable to establish which specific indicators contribute significantly to the difference in index values. This enhances the ability of the decision-maker to

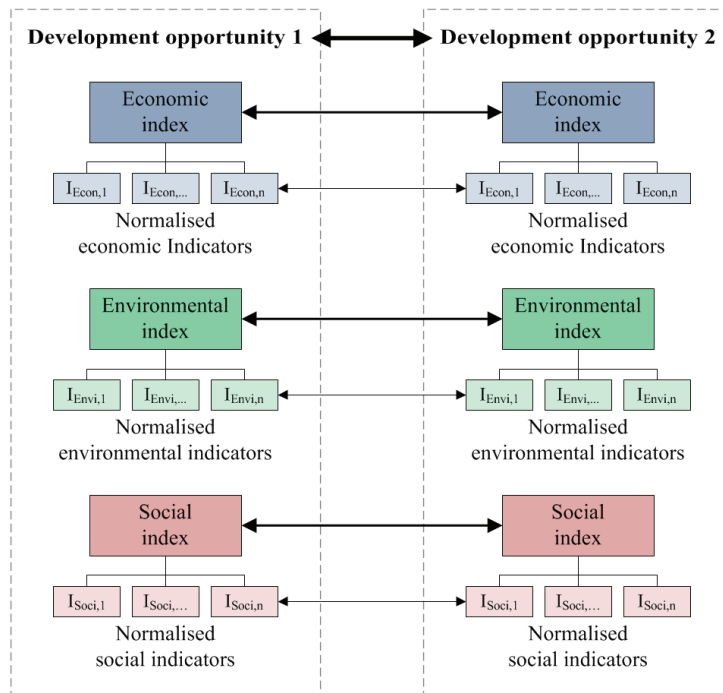


Fig. 1. Comparison of development opportunities by comparison of indices

apply his/her own discretion as to how the differences in the values of the composite indices should be interpreted and increases the credibility of decisions made based on the comparison of the indices.

The structure of the framework on which the model is based has to meet some requirements in order to produce meaningful results.

### **3. Framework requirements**

The criteria to be met in order for a framework to be usable as basis for the model discussed in the previous section will now be discussed briefly. It is assumed that the abovementioned model will only be based on recognized frameworks which include requirements to ensure high quality information is ultimately disclosed by following the framework guidelines. As such, these requirements regarding the quality of the disclosed information is not part of the criteria for eligibility of frameworks discussed in this section. Although all the criteria discussed in this section are important, they are not all of equal importance. The perceived importance of each criterion is therefore also discussed shortly.

#### *3.1. Temporal orientation*

The assessment of development opportunities is prospective in nature. It is thus of value if a framework requires disclosure of prospective information. Retrospective information have to be adjusted for inter alia, inflation, exchange rate changes, changes in the industry and growth factors when assessing prospective opportunities and these adjustments may introduce some inaccuracy in the data. However, as the proposed model is aimed at the rapid completion of scoping phase comparison of opportunities, the inaccuracies introduced by such adjustments may be acceptable if limited as far as possible. A prospective temporal dimension is therefore deemed favourable, but not a requirement.

#### *3.2. Nature of indicators*

In order to allow comparison of different potential industries that can be developed, the same indicators have to be used for all industries. It is therefore important that standardized indicators are used to disclose information. Although some frameworks, notably the IIRC <IR> Framework, do not prescribe the use of specific indicators for disclosure quality reasons, comparison of narrative-based- or non-standardized indicator information is tedious and problematic. Therefore, for the present investigation, standardized indicators were deemed to be more favourable. Further, it is widely noted in literature that integrated indicators (accounting for the interrelationships between the different dimensions of sustainability) are required for the accurate measurement of sustainable development progress [15, 16, 17]. This does not invalidate the use of non-integrated indicators, but a balance between both is recommended [9]. Therefore, frameworks that include integrated indicators were deemed to be more favourable.

#### *3.3. Scope of indicators*

Although the majority of sustainability assessment frameworks define requirements for indicators to ensure sufficient disclosure of the intended sustainability information, all frameworks do not necessarily include indicators that cover all three dimensions of sustainability i.e. environmental, social and economic. With regard to the present investigation, it is important to assess development opportunities in terms of all the dimensions of sustainability. No conclusion can be reached regarding the feasibility of a development opportunity if its potential impact on all the dimensions of sustainability is not taken into account. As such, frameworks that do not consider all the dimensions of sustainability are not considered to be sufficient for the purposes of the present investigation.

### 3.4. *Level of assessment*

As mentioned in the introduction of this paper, the present investigation aims to evaluate the potential of using sustainability information available in the public domain to enhance decision-making by policymakers regarding different development opportunities. As such, the intended assessment will be done at industry level – considering the potential for establishing an industry, not only a single organization. Therefore, it will be advantageous if a framework intended for industry-level assessment can be used. However, sustainability- and integrated reporting are generally conducted at organization-level and, as a result, most sustainability assessment frameworks are developed for organization-level assessment. It is therefore likely that organization-level information will have to be scaled in order to represent industry-wide data.

### 3.5. *Usage*

Widely used frameworks are favoured as widespread use of a framework by organizations operating under different circumstances (political, geographical etc.) and in different industries increases the probability of finding representative information and allows one to consider similar industries operating under different circumstances, thereby ensuring appropriate information is used. Further, widespread use of a framework also implies that the framework is deemed acceptable and sufficient by many users, increasing the credibility of information attained from or based on that framework. It is acknowledged that in some cases less widely used frameworks may be appropriate and therefore widespread use of a framework is favourable, but is not deemed to be a requirement.

### 3.6. *Data disclosure*

As discussed in section 2, a notable strength of the proposed model structure is the fact that indices can be analysed to ascertain which individual indicators result in one opportunity being superior or inferior relative to another. This allows the decision maker to allow for certain trade-offs depending on the requirements and priorities of a given development initiative. The availability of disaggregated information is therefore very important and frameworks which only require disclosure of aggregated information are therefore deemed insufficient for the present investigation.

## 4. **Analysis of reporting frameworks**

With the ever-increasing global emphasis on sustainable business strategies and sustainability reporting, a host of sustainability reporting frameworks have been developed over the past two decades. These frameworks generally aim to standardize transparent and comprehensive sustainability reporting at national, regional or international level.

Reporting frameworks developed with the aim of international implementation are particularly relevant to the present investigation due to the potential larger range of industries and organizations that can make use of these frameworks to disclose sustainability information. Some sector specific frameworks may meet the criteria outlined above, however, this paper specifically focuses on generic frameworks and as such, sector specific frameworks are not included in the analysis.

Five prominent international reporting frameworks were analysed in this section, namely the GRI G4 Sustainability Reporting Guidelines [10], the CDP environmental information requests [11], the IIRC's <IR> Framework [12], the Sustainability Accounting Standards Board (SASB) standards [13] as well as the United Nations Global Compact (UNGC) Communication of Progress (COP) guidelines [14]. These frameworks are well known globally and the background and underlying principles of each are therefore not discussed in this paper. Table 1 summarizes the characteristics of these frameworks at the hand of the criteria outlined in section 3.

Although these frameworks are all sufficient in fulfilling the respective intended purposes, the criteria outlined in section 3 have to be considered to establish whether these frameworks are suitable to be used as basis for development

of the proposed model. This section therefore presents a brief analysis of the abovementioned frameworks at the hand of the criteria discussed in section 3.

Table 1. Summary of framework characteristics

	<b>GRI G4 Sustainability Reporting Guidelines</b>	<b>CDP environmental information requests</b>	<b>IIRC Integrated Reporting Framework</b>	<b>Sustainability Accounting Standards Board</b>	<b>UNGC Communication on Progress</b>
<b>Temporal orientation</b>	Predominantly retrospective	Retrospective & Prospective	Retrospective & Prospective	Predominantly retrospective	Retrospective & Prospective
<b>Nature of indicators</b>	Standardised	Standardised	Non-standardised	Standardised	Standardised
	Non-integrated	Non-integrated	Integrated	Non-integrated	Non-integrated
<b>Scope of indicators</b>	Comprehensive	Limited	Variable	Limited	Limited
<b>Level of assessment</b>	Organisation level	Organisation level	Organisation level	Organisation level	Organisation level
<b>Usage</b>	Almost universal	Widespread	Increasingly widespread	Increasingly widespread	Limited
<b>Data disclosure</b>	Open access	Open access	Open access	Open access	Open access
<b>Key:</b>	<span style="background-color: #00b050; color: white; padding: 2px;">Ideal characteristic</span>	<span style="background-color: #f4a460; color: white; padding: 2px;">Acceptable characteristic</span>	<span style="background-color: #e91e63; color: white; padding: 2px;">Unfavourable characteristic</span>	<span style="background-color: #e91e63; color: white; padding: 2px;">Unfavourable characteristic</span>	<span style="background-color: #e91e63; color: white; padding: 2px;">Unfavourable characteristic</span>

In Table 1 it can be noted that none of the frameworks match all the ideal criteria outlined in the previous section. This might be expected as the present study makes use of information from the frameworks differently than the originally intended primary functions of the frameworks. The fact that none of the frameworks are ideal for the present purpose does not necessarily disqualify their use, but, importantly, it does indicate that making use of these frameworks might require some manipulation, with specific assumptions and scaling of data likely necessary.

As captured in Table 1, the GRI G4 guidelines and the SASB standards are strongly focused on retrospective reporting of performance, with little or no use of prospective indicators (targets, planned developments), and the temporal dimension of these frameworks are therefore deemed unfavourable. Further, although the IIRC <IR> Framework is the only framework that encourages integrated thinking, it does not make use of standardised indicators used by all reporting organisations. The scope of indicators reported in the CDP environmental information requests, SASB standards and UNGC COP is limited and does not cover all three dimensions of sustainability, which is very unfavourable for the purpose investigated here. The widespread use of the GRI guidelines and the CDP environmental information requests (78% of companies that publish corporate responsibility reports make use of the GRI guidelines [6] and CDP has gathered “the largest global collection of self-reported environmental information” [11]) are favourable, although the use of the IIRC <IR> Framework and SASB standards is also increasing. Finally, all the frameworks evaluated here are focused on organisation-level reporting (unfavourable), but all require the complete disclosure of disaggregated information (favourable).

Based on the assessment criteria, the GRI G4 Sustainability Reporting Guidelines are the most appropriate framework to be used as it fulfils the most of the characteristic requirements out of all the frameworks compared (4 ideal characteristics out of 7), although it has been criticized for its lack of integrated indicators [9]. This is followed closely by the CDP environmental information requests (3 ideal characteristics and 1 acceptable characteristic out of 7) and IIRC <IR> Framework (2 ideal characteristics and 3 acceptable characteristics out of 7). The primary problem of using the CDP information requests is the fact that these requests do not include financial or social disclosures. This means that the CDP information requests cannot be used as the sole source of sustainability information and would have to be used complementary to another framework in which financial and social disclosures are made. Although the IIRC <IR> Framework does require disclosure on all the aspects of sustainability, it does not specify the indicators

to be used for such disclosure. The indicators used by different organizations to report on a specific aspect are therefore likely to differ, making direct comparison difficult. However, the IIRC <IR> Framework does emphasize the importance of integrated thinking, an aspect that is lacking in the GRI G4 guidelines. Taking all these factors into consideration, it is the widespread use of the GRI G4 guidelines that presently makes it preferable above the IIRC <IR> Framework for the purposes of this study. However, with increasing use of the IIRC <IR> Framework expected globally, this may change in the near future.

Based on the results in Table 1, the SASB standards and the UNGC COP are less suited for the present purpose than the GRI G4 guidelines, CDP information requests and the IIRC <IR> Framework. This is primarily a result of the limited number of indicators that the SASB standards and UNGC COP require to be disclosed. Although the SASB limits the number of indicators to be used on purpose (based on a materiality assessment), this is not preferable for the purpose investigated in the present study. The SASB standards require disclosure of different indicators for different industries, which can further vary within an industry based on the individual materiality assessments of organizations. Therefore, comparability of different industries, as is required in the present investigation, is inherently difficult when using the SASB standards. Regarding the UNGC COP, the ten principles on which disclosures are based are not comprehensive and do not require quantitative information. The UNGC therefore recommends that organizations seeking to disclose sustainability progress more comprehensively to make use of the GRI G4 reporting framework. A collaborative document by the GRI and the UNGC that outline the complementary nature of these initiatives is available to guide this process [15].

## 5. Conclusions

A potential opportunity is identified to make use of the increasing amount of organizational sustainability information available in the public domain to enhance the efficiency of scoping phase decision-making by policymakers such that projects that are most likely to produce sustainable outcomes are prioritized rapidly. To this end, a concept model that makes use of sustainability indicators was introduced, as well as criteria that have to be considered when choosing a sustainability indicator framework on which such a model can be based. Five prominent indicator frameworks were subsequently analysed according to these criteria. It was found that none of the frameworks match all the ideal criteria, but it was concluded that the GRI G4 Sustainability Reporting Guidelines is the most suitable to be used as basis for a model facilitating the high level comparison of different development opportunities. Although the GRI G4 framework requires predominantly retrospective information to be disclosed and has been criticized for its use of non-integrated indicators, these problems are not substantial enough to disqualify its use. The IIRC <IR> Framework was deemed to be only slightly less suited than the GRI G4 guidelines due to its lack of standardized indicators (making comparison difficult) and slightly less widespread use. Although the CDP information requests did not compare poorly to the GRI G4 guidelines for the purpose investigated here, the use of the information requests was disqualified as it only considered environmental information.

Finally, it can be concluded that making use of publicly available sustainability information reported according to prominent international sustainability reporting frameworks to enhance scoping phase decision-making may indeed be possible. It is recommended that a model that makes use of publicly available sustainability information as discussed in this paper be developed and validated in order to prove the possible utility and potential shortcomings of using such a model in the early stages of policy related decision-making. In such a model the emphasis would be on ease of use, perhaps even allowing for the potential that, with increasing standardization of reported data, automatic data collection and analysis might become possible in the future. The limitations of such a model, including the generalization of impacts of specific industries over geographical and political boundaries and the extrapolation of retrospective data to assess opportunities prospectively, should be minimized throughout development and use of such a model.

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