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Moving the world into a safe space–the GAPFRAME methodology

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ABSTRACT

In September 2015 the United Nations General Assembly unanimously adopted the 2030 Agenda for Sustainable Development with its 17 Sustainable Development Goals (SDGs), one of the most ambitious and important global agreements in recent history. To advance implementation of the SDGs, a new framework – the GAPFRAME – has been developed and published recently in this journal (Muff, Kapalka, Dyllick, 2017). The GAPFRAME highlights the gap between the current state of the world and a desired future state, defined as a "safe space", and identifies priority issues that need to be addressed on a national, regional, and global level. The www.gapframe.org website provides free access to the data collected for 196 countries and 22 regions across the world. This website was launched with the intention to provide decision-makers and stakeholders with aggregated information on the priority issues to be urgently addressed.

The GAPFRAME focuses attention on addressing identified priority issues, holding each country or region accountable for the successful implementation of the global sustainability targets within their area of responsibility. It can be used as a planning tool, in particular for business, to identify long-term business opportunities. It can be also used as an educational tool to sensitize students to relevant sustainability problems and to evaluate and compare different sets of priorities.

In this article, we explain in detail the GAPFRAME methodology, covering the different steps in the design of the framework, in scaling, normalization, weighting, and aggregating the information collected for the GAPFRAME Index V1 version. It will be best understood if the GAPFRAME concept is already known, but it can be read as well as a stand-alone article, primarily with a methodological focus.

1. Introduction

In September 2015 the United Nations General Assembly unanimously adopted the 2030 Agenda for Sustainable Development, one of the most ambitious and important global agreements in recent history. The agenda with its 17 Sustainable Development Goals (SDGs) at its heart aims to set the world on a path towards a better future for all. It recognizes that addressing these challenges is everybody's responsibility and explicitly call on business, civil society, and the tertiary and academic sectors among others to collaborate with governments and international organizations towards the achievement of the SDGs (United Nations, 2016).

To advance implementation of the SDGs, we took up the challenge of creating a new framework, called GAPFRAME, translating the 17 SDGs into nationally relevant issues and showing where a country (or a region) is today as compared to where it should be. In other words, the framework highlights the gap between the current state of the world and a desired future state, identifying priority issues that need to be urgently addressed on a national, regional, and global level to make progress towards the global "Agenda 2030"

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and ultimately reach a collective “safe space”. The GAPFRAME is a first attempt to develop a composite index which compares the current state of the world to its ideal future, based on an integral approach that embeds four sustainability dimensions: environment, society, economy and governance in one single framework.

In this article, we present information related to the GAPFRAME methodology. We cover the different steps in the design of the framework, in scaling, normalization, weighting, and aggregating information to create the GAPFRAME Index V1 version. It elaborates on the recently published article presenting the GAPFRAME concept in this journal (Muff et al., 2017). The www.gapframe.org website provides free access to the GAPFRAME data collected for 196 countries and 22 regions across the world. The present article will be best understood if the GAPFRAME concept is already known, but it can be read as well as a stand-alone methodological article.

To the best of our knowledge, an attempt to compare the current state of the world to its ideal future state and creating an index that measures the gap between these two states has not been made yet. Instead of comparing countries among themselves (i.e. provide a traditional performance ranking for countries), we seek to point out the weakest issues of each individual country, encouraging various stakeholders to address these sore spots and improve the local situation while simultaneously contributing to the global welfare. In particular we aim to encourage business to transform the identified issues into business opportunities by following the *Business Sustainability Typology 3.0* approach (Dyllick & Muff, 2016). This approach implies an *outside-in* perspective where a company addresses big sustainability challenges and applies its resources, competencies and innovation power to help resolve them.

We acknowledge that the GAPFRAME approach is very demanding, implying the definition and approximation of an “ideal state” of the world which is very challenging on many grounds. They include questions of indicators selection, data availability, manipulation and aggregation, but also normative questions related to defining ideal states for the different indicators. In particular regarding the normative challenges, we want to provide as much transparency as possible to enable the reader to understand what we did. However, we realize, that there always will remain a degree of subjectivity.

Between October 2015 and December 2016, we co-created the first version (V1) of the GAPFRAME Index in a multi-step consultation process. The V1 version is a first attempt to assess the gap between where we stand today and what needs to be done (country by country) so that all of us can live well on the one planet we have. The GAPFRAME approach is still in a developmental phase (work in progress) and its true viability will prove itself with an expansion of the user base, who will be invited to join expert panels to review this first version of the framework.

2. Overview of the GAPFRAME approach

The Agenda 2030 demands the implementation of the Sustainable Development Goals by all of us – from governments and business to NGOs and individuals – and relies on a robust follow-up and review mechanism to monitor progress and to ensure accountability of all nations (United Nations, 2016).

To advance implementation of the SDGs and to monitor sustainable development, we developed the GAPFRAME in consultation with a panel of experts (see *Acknowledgments*). Its focus is on addressing priority issues at a national level, holding each country equally accountable for the successful implementation of the globally agreed sustainability targets.

The GAPFRAME development process included 6 steps, as summarized in Fig. 1.

In the ***first step*** we reorganized the 17 Sustainable Development Goals into 24 GAPFRAME issues and four sustainability dimensions: planet, economy, society, and governance following Rockström's suggestion (Rockström and Sukhdev, 2017).

In the **second step** we selected 68 publicly available indicators to substantiate the underlying issues and to collect respective data for 196 countries and 22 regions in the world. The selected indicators serve as best currently available proxies to measure the state of the issues.

In the **third step** we tackled the issues to define an “ideal” state of the world and ideal target values for each indicator. We understand this step is the most critical and debatable element of the present framework.

In the **fourth step** we looked at data harmonization and processing. The indicators coming from various sources were normalized and scaled using a 0 – 10-point scale, with 0 being the worst case (a threat) and 10 being the best case (an ideal state). In this operation, the actual values were compared to their ideal values, relating the current state of the world to its ideal future state.

In the **fifth step** the normalized and scaled indicators were aggregated to calculate the GAPFRAME Index based on the arithmetic mean, thereby giving equal weights to all indicators within an issue, and to all issues within a dimension. In order to construct the GAPFRAME Index score – for a country, region, or the world – we used its weakest dimension, not the average of all 4 dimensions. This was done to follow an approach of strong sustainability, which ensures that one dimension is not improved at the cost of another dimension. As a result, the GAPFRAME score shows how far a given country or region is still away from an ideal state, indicating the priority issues that need to be solved to reach the desired future state.

In the final **sixth step** we specified a five-level scale and we defined a “safe space” as a desired future state, being inspired by the idea of a “safe operating space” developed by Raworth (2012). We place the “safe space” (GAPFRAME score between 7.5 and 8.8) at roughly 80% of the ideal state (the maximum) and we consider it as “good enough” of what future state should be attained. Hence, on the GAPFRAME scale, the goal for any country, region and the world are to move as quickly as possible from the current state to the safe space and above (GAPFRAME Score $>$ 7.5).

These six steps (Fig. 1) present a snapshot of the GAPFRAME V1 development process. They are discussed in detail in the subsequent sections. It is worthwhile to mention that the GAPFRAME development process is still ongoing and the limitations of the GAPFRAME V1 version (see section 9) are being progressively addressed to increase the robustness of the GAPFRAME Index (see also *Future Developments* – section 10).