Five criteria for global sustainable development

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ABSTRACT

A clear understanding of the global-level sustainable development concept is necessary before applying it to projects at a national, local or firm level. Such lower-level projects may concern managing production and consumption of energy, organization of cities and using land productively. However, the Sustainable development goals adopted at the United Nations Summit in September 2015 do not provide adequate guidance, even at the global level, because the goals are too many, too vague and often not quantified. Based on the 1987 report Our Common Future, we derive five criteria for the development of primary goals and corresponding indictors and quantified thresholds to be met.

1

"But the 'environment' is where we all live; and 'development' is what we all do in attempting to improve our lot within that abode. The two are inseparable" (World Commission on Environment and Development (1987), p. ix)

1   Introduction

In September 2015 the United Nations announced a set of Sustainable Development Goals to guide world development until 2030 (UN, 2015). These goals, following and expanding on the UN Millennium Development Goals, will provide the authoritative goals, indicators, and thresholds and will become applicable in 2016. The 2030 agenda includes 17 goals and 169 individual targets, ranging from improving maternal health to safeguarding the oceans (Stafford-Smith, 2014).

However, these goals and targets are under fire and have been labelled as vague, weak or meaningless by a scientific review (Stokstad, 2015). Part of the problem is that there is no scientific or political agreement on a definition of sustainable development. Rather, there is a tremendous diversity of definitions and interpretations (Giddings et al. 2002; McEntire, 2005; Hopwood et al., 2005; Hauff and Klein, 2006; Ehrlich et al., 2012). The large number of definitions and interpretations of sustainable development has made some scientists avoid using the term because it is too vague, and even to dismiss the concept altogether. Whitelegg (1997, p. 101) puts it this way: "One could argue that it is precisely the lack of clear meaning that allows politicians and businessmen to feel comfortable with the concept – everyone agrees that it's a good thing but no one really knows what it means." Moreover, Luke (2005) suggests that the concept is increasingly used as a label to describe situations or processes that are neither sustainable nor developmental. In other words: By increasingly being presented as a pathway to all that is good and desirable in society, the sustainable development concept has become so comprehensive and complex that it is no longer useful in guiding policymaking (Holden et al., 2014).

Yet the persistence of the sustainable development concept is remarkable. Kates et al. (2005) argue that one of the successes of sustainable development has been its ability to serve as a grand compromise between those who are principally concerned with nature and environment, those who value economic development, and those who are dedicated to improving the human condition. Moreover, they argue, at the core of this compromise is the inseparability of environment and development described by Our Common Future. According to Lafferty (2004, p. 26), sustainable development "is now like 'democracy': it is universally desired, diversely understood, extremely difficult to achieve, and won't go away." Thus, O'Riordan (1993, p. 37) might indeed have been right in his prophesies two decades ago: "Like it or not, 'sustainable development' is with us for all time." At least the concept of sustainability is with us until 2030, as illustrated by the agreement by UN member states to set up the Sustainable Development Goals (UN, 2015).

This paper attempts to clarify how the concept can be interpreted and used on a global level; i.e. the level addressed by the UN Sustainable Development Goals. A better understanding of the global-level sustainable development concept can guide UN in prioritizing between the 169 sustainable development targets and in setting corresponding thresholds to be met, thereby meeting part of the critique raised by Stokstad (2015). Moreover, an understanding of the global challenges that the concept was meant to address is necessary in order to apply the concept to projects at a national, local or firm level. Such lower-level projects may concern managing production and consumption of energy, organization of cities and using land productively. For

2

example, Martínez (2015, in press) establish a relationship between energy and sustainability in a city (Bogotá) examining indicators which covers most environmental and social dimensions of the global sustainable development concept. Holden et al. (2013) examine both environmental, equity and social aspects of passenger transport at a national level. Esseghir and Khouni (2014) examines how we can maintain economic growth and energy security while respecting the rights of future generations, using the union of Mediterranean countries as a case. Zhang et al. (2011) address the problem how energy development in China can follow a sustainable path to coordinate economic growth, social development and environmental protection.

Our point of departure is the 1987 report from the World Commission of Environment and Development, Our Common Future (World Commission on Environment and Development, 1987). It has set the standard and become the point of reference for every debate on sustainable development (Lafferty and Langhelle, 1999; Kates et al., 2005; Holdren, 2008; Borowy, 2014; Holden et al., 2014). Since 1987 the concept has been widely used and has been formally adopted by various national and international organisations as well as by local, regional, and national governments.

Our Common Future's canonical definition of sustainable development is quoted by many over and over again: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." However, less attention has been paid to the subsequent paragraph: "It [sustainable development] contains within it two key concepts: the concept of 'needs,' in particular the essential needs of the world's poor to which overriding priority should be given; and the idea of 'limitations' imposed by the state of technology and social organization on the environment's ability to meet present and future needs" (World Commission on Environment and Development (1987, p. 43)). The paragraph emphasizes the priority of meeting the basic needs of the poor and emphasizes the reality of environmental limits (Ibid, p. 22).

Whereas helping poor people to meet their needs seems to have widespread political support, the idea that there are environmental *limits* is much harder to sell. True, the sustainable development concept originally was a result of a great compromise between the North (worried about environmental degradation) and the South (worried about lack of economic and social progress). And, northern politicians often do not follow through on their grand promises of poverty eradication. Still, when it comes to setting UN goals, it has been easier to acknowledge and establish concrete development goals (e.g., the UN Millennium Development Goals to be achieved within 2015) than to acknowledge and establish concrete environmental limits (e.g., the UN's Sustainable Development Goals to be achieved within 2030).

This difficulty is clearly illustrated in the sustainable development goals adopted at the United Nations Summit in September 2015. Only goals that refer to meeting essential needs (the development part of sustainable development) are concrete and precise thresholds are set. Turning to environmental limits (the environmental part of sustainable development), however, the wording becomes far less precise. Looking particularly at the goals addressing the two core planetary boundaries, climate change and biosphere integrity, the phrasing becomes particularly blurry. Instead of quantified targets, words are used to illustrate the direction of action, for example: 'strengthen', 'integrate', and 'improve' (goal 13 on climate change); 'halt', 'reverse', 'increase', 'ensure', 'take urgent action', 'integrate' (goals 14 and 15 on biosphere integrity). Clearly, the idea that there are environmental limits is close to non-existent.

3

Consequently, three decades later, the central message of the Commission – the need to make inconvenient sustainability considerations a part of global politics as much as of everyday life – has been sidelined (Borowy, 2014). In the resolution adopted by the UN General Assembly on 25 September 2015, Transforming Our World, the central message is the need to make a win-win strategy which can bring huge gains to all countries and all parts of the world. Thus, the inconvenient truth from the 80s has been replaced by an action plan for new opportunities and prosperity. The result is a political acceptable concept with an ambiguous content. By going back to the sustainable development concept's origin: Our Common Future, we aim at reducing this ambiguity and at recapturing the concept's initial focus on limits, equity and needs.

The rest of the article is structured as follows. In Section 2, we introduce five criteria for interpretation and use of the sustainable development concept at the global level. Section 3 and 4, we present a set of primary goals and the corresponding indicators and thresholds. In Section 5, we conclude the paper by discussing the policy implications.

2 Criteria for goals, indicators and thresholds

By going back to the sustainability concept's origin, Our Common Future, we derive five criteria for goals, indicators and thresholds (World Commission on Environment and Development, 1987).

Primary goals. U.N. sustainability goals should only include those of fundamental importance for people and people. They should be what Daly (2007) and Ehrlich *et al.* (2012) refer to as "fundamental objective values, not subjective individual preferences". For example, Steffen *et al.* (2015) say that two planetary boundaries are of fundamental importance for the Earth System—climate change and biosphere integrity. Therefore, we argue, only these two environmental goals should be included in UN's Sustainable Development Goals. Our approach is based on an understanding of sustainable development in the strong sustainability sense. This understanding is in line with most ecological economists who suggest that natural and man-made capital are more often complements to each other rather than substitutes for each other Daly, H. E. (2005). A similar prioritizing of the UN Sustainable Development Goals would drastically reduce their numbers. For instance, "Ensure healthy lives and promote well-being for all at all ages (goal 3) is a socially desirable goal, yet less important than "End poverty in all its forms everywhere" (goal 1). In fact, we believe there are only two primary development goals among the 17 suggested by the working group: end poverty (goal 1) and reduce inequality within and among countries (goal 10).

Not fungible. These primary goals—and their respective indicators and threshold values—should represent equally important targets, each of which must be fulfilled. That is, we exclude the possibility of trading off underperformance in one indicator against overperformance in another. Thus, there is no hierarchy among the primary goals. In fact, this is exactly the intention of Our Common Future: "Development is only sustainable when it takes into consideration *both* human needs and long-term ecological sustainability. The point then becomes specifically one of *not* establishing a hierarchy of values between the two, but one of excluding development paths which do not take both into consideration" (World Commission on Environment and Development (1987, p. 13)). These thresholds can be challenging to meet, because meeting a development goal (by increasing economic growth, for instance) makes it more difficult to meet an environment goal (by reducing greenhouse gases, for instance). However, the solution to this challenge is *not* to formulate goals that work towards a common purpose, as suggested by

4

Stafford-Smith (2014). Rather, one should acknowledge that for a rich country, meeting environment goals may call for sacrifices. Also, by setting explicit minimum and maximum threshold values for each goal, our approach runs contrary to those focusing on *relative changes*. For example, suggesting that sustainability can be achieved by demonstrating a "positive rate of change" (Amekudzi et al., 2009) for a country or region is not satisfactory. Neither would an "as far as possible" approach (NESC, 2010) suffice. Changing an unsustainable state to a less unsustainable state is good, but the result cannot be considered sustainable.

Limits to rich countries' activities. Our Common Future was based on the understanding that if the whole world was to adopt the consumption pattern of the rich countries, an impossible burden would be placed on global ecosystems. Thus, it concluded that people in the North must adjust lifestyles, technologies and social organization to dramatically reduce environmental pressures. These concerns can be reflected by placing a main responsibility for staying within thresholds for biodiversity loss and climate change on rich countries. Another word for sustainability is equity or justice—a just allocation of resources between people and planet, between different parts of the world and between current and future generations. The Cancún (COP 16) UNFCCC agreement of December 2010 stated that countries should have equitable access to sustainable development. This can be understood in a number of ways. Nicholas Stern suggests: "… all countries undertake the transition to a low-carbon, climate-resilient economy, but that wealthier countries do so more quickly, bringing down the costs of key technologies in the process, providing strong practical examples, while also assisting poorer countries through finance, technology, and know-how" (Stern, 2014).

The role of economic growth. We argue that economic growth is *not* one of the primary goals of sustainable development. Our argument runs contrary to the "three pillar approach" in which sustainable development includes social, economic and environmental goals. True, Our Common Future argues that 'reviving growth' and 'changing the quality of growth' are critical objectives – or strategic imperatives – following from the concept of sustainable development (World Commission on Environment and Development (1987, p.49)). But, aspiring for economic growth may be equivalent to aspiring for an improved standard of living far beyond what can be considered ecologically sustainable in the long term. Our Common Future claims that "Sustainable development clearly requires economic growth in places where such [human] needs are not being met. Elsewhere, it can be consistent with economic growth, provided the content of growth reflects the broad principles of sustainability and non-exploitation of others. But growth by itself is not enough" (Ibid, p.44). Based on this, we argue that sustainability is a constraint on our desire to maximize short-run economic growth (Daly, 2007; Griggs et al., 2013).

The role of participation. Finally, participation, by citizens in decisions which affect them all, is a primary goal. It was stated in Our Common Future and echoed in the UN summits in Rio (1992, 2012) and Johannesburg (2001). According to Lafferty (2004) and Meadowcroft (2012) such participation can only be achieved in a deliberative democracy. However, participation does not necessarily include the acceptance by the members in defining the goals. This argument runs contrary to a number of studies which consider acceptance as crucial to achieving sustainability (Shiftan et al., 2003; Amekudzi et al., 2009; Castillo and Pitfield, 2010). Although we agree that acceptance is vital to ensure efficient implementation of sustainable policies and measures after the goals have been set, we also agree that the choice of sustainability goals and threshold values cannot simply echo "what people would like to sustain and how to reach agreement on this, constrained by estimates of what is feasible" (Ehrlich et al. (2012, p. 69)).

5

3   Goals

Based on these five criteria, we present four primary goals for sustainable development at the global level.

Goal 1: Securing participation. Our Common Future states that in the process of achieving sustainability, one should: "secure effective citizen participation in decision making" (World Commission on Environment and Development (1987, p. 18)). A further 37 references to participation are made throughout the report.

Four things must be said about participation at this stage. First, participation "requires a political system that secures effective citizen participation in decision making" and, moreover, "an administrative system that is flexible and has the capacity for self-correction" (Ibid, p. 56). Thus, participation in itself is not enough, but must be embedded in a system that makes it possible to turn individual voices into action.

Second, participation does not mean that decisions should necessarily reflect all voices. It simply means that all voices shall be heard and that there is a political and administrative system that can, if not violating other sustainability goals, turn these voices into action.

Third, participation of the "low voices" should be given particular attention: "improve the position of women in society, to protect vulnerable groups, and to promote local participation in decision making" (Ibid, p. 39).

Fourth, the procedural goal of participation is not to be confused with participation as a means to ease designing and implementing government policy. Rather, participation is also concerned with collective processes of monitoring, reflection, debate, and decision that establish the goals to be pursued and the indicators to be used (Meadowcroft et al., 2005; Wallis, 2006; Ellis, 2007).

Thus, participation is more than just gaining access to decision making. It also refers to the ability to influence norms and values as well as to shape discourse (Petschow et al. (2005, p. 11)).

Goal 2: Safeguarding Long-term Ecological Sustainability. Even the narrowest definition of physical sustainability—as the minimum requirement for a sustainable development—must take into account social equity, which implies that the present generation must meet its needs without compromising the ability of future generations to meet theirs. Our Common Future puts it this way: "We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions" (World Commission on Environment and Development (1987, p. 8)).

According to Edith Brown Weiss (1992) the human species holds the natural environment of our planet in common with all members of our species: past generations, the present generation, and future generations. Simultaneously, we are beneficiaries entitled to use and benefit from it. Thus, altering the Earth's climate and putting excessive demands on its biological capacity not only violate the long-term ecological sustainability requirement but also most likely prevent future generations from meeting their needs (Brown Weiss, 1992).The term "sustainability" has its origin in ecological science. It was developed to express the conditions that must be present for the ecosystem to sustain itself over the long term. In Our Common Future, there are several references to the necessity of ecological sustainability, such as "At a minimum, sustainable development must not endanger the natural systems that support life on Earth: the atmosphere,

the waters, the soils, and the living beings" (World Commission on Environment and Development (1987, pp. 44–45)), and "There is still time to save species and their ecosystems. It is an indispensable prerequisite for sustainable development. Our failure to do so will not be forgiven by future generations" (Ibid, p. 166).

Since Our Common Future was published, society has become increasingly aware of the challenge to the planet posed by climate change. Stern (2014) says: "…the risks from a changing climate over the next hundred years and beyond are immense. There is a strong possibility that the relationship between humans and their environment would be so fundamentally changed that hundreds of millions of people, perhaps billions, would have to move."

Goal 3: Satisfying Basic Human Needs. Satisfying basic human needs is at the core of the development part of sustainable development. Indeed, the concept of needs is embedded in the definition of sustainable development: "It [sustainable development] contains [...] the concept of 'needs,' in particular the essential needs of the world's poor, to which overriding priority should be given" (World Commission on Environment and Development (1987, p. 43)). Thus, satisfying basic human needs and ensuring long-term ecological sustainability constitute necessary preconditions for sustainable development.

In a theory of human needs, Doyal and Gough (1991) argue that human beings have universal and objective needs for nutrition and clean water, protective housing, a non-hazardous physical work environment, appropriate health care and physical security. However, seeing people's needs only in terms of these basic needs give a 'rather meagre view of humanity' (Sen, 2009, p. 250). Thus, we take the broader view on human needs as reflected in the capability approach by Amartya Sen. Sen (2009) argues that policies should focus on assessing what people are able to do and be, that is on their capabilities, and on removing obstacles in their lives so that they have more freedom to live the kind of life that they have reason to value. Thus, we argue that effective citizen participation in decision making (see goal 1) and access to education are also part of basic human needs.

Goal 4: Promoting Intragenerational Equity. Our Common Future claims that social equity *between* generations "must logically be extended to equity *within* each generation" (Ibid, p. 43, our italics)). Thus, social equity as an integral part of sustainable development has two dimensions, time and space (Brown Weiss, 1992). From this perspective, sustainable development has consequences for equity within and between generations both globally and nationally.

4   Indicators and 2030 Thresholds

For each of the four primary goals, we choose appropriate indicators and assign 2030 threshold values that must be met for development to be deemed sustainable.

Indicators should be relevant, measurable and easy to communicate. Relevance implies that indicators should link to a goal in a trustworthy way and provide reliable measurement of progress towards the goals related to that theme. Composite indicators that refer to more than one goal, must be avoided because they can conceal an underperformance with respect to one goal (say, mitigating climate change) with an over performance with respect to another goal

(say, satisfying basic human needs).[1] The indicators should be chosen so that it is possible to collect data. Easy to communicate implies that that the indicator should be of 'a manageable size' (Hák et al., 2016). To get a manageable size, we suggest a small set of headline indicators, preferably one indicator for each key goal. We advise against specifying a long list of headline indicators (e.g., the list of 96 indicators suggested by the UN Commission on Sustainable Development UNCSD (2007)).

Ultimately, sustainability should be addressed globally. Humans are part of a single natural (global) system whose parts interact is complex ways. Although national territories, economies, and societies constitute only one level of system organization, the national level is perhaps the most significant level because governance is presently strongest there (Dahl, 2012). Thus, the goals are presented at the national level, but are defined according to global challenges and limits.

Indicator for goal 1. We use the Economist Intelligence Unit's democracy index (EIUDI) as an indicator for goal 1: securing participation. As mentioned, participation in our sense is more than merely observing the percentage of the adult population that voted in elections. Thus, we need a richer approach including the quality of the political and administrative support systems. Campbell (2008) shows that several initiatives have been established that are interested in measuring democracies empirically around the world, including Freedom House, Polity IV, Vanhanen's Index of Democracy, and the Economist Intelligence Unit's Democracy Index (EIUDI). Yet there is no consensus about how to conceptualize and measure regimes such that meaningful comparisons can be made over time and across countries (Coppedge et al., 2011).

Because of its rich approach to participation and its available data for a large number of countries, we use the EIUDI as an indicator for participation. The EIUDI is based on five categories: electoral process and pluralism; civil liberties; the functioning of government; political participation; and political culture. The five categories are inter-related and form a coherent conceptual whole that measures participation. We argue that the threshold value must be a minimum of 8.0 (see Table 1 for details).

Indicators for goal 2. We use atmospheric carbon dioxide concentration and extinction rate as indicators for goal 2: safeguarding long-term ecological sustainability. The two indicators draw on recent literature on planetary boundaries (Rockström et al., 2009; Steffen et al., 2015). Planetary boundaries define a safe planetary operating space that will allow humanity to continue to develop and thrive for generations to come. Nine planetary boundaries were presented with corresponding indicators and thresholds in Rockström et al. (2009). Lately, Steffen et al. (2015) have identified two core boundaries, climate change and biosphere integrity, each of which has the potential on its own to threaten long-term ecological sustainability should it be substantially and persistently transgressed.

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[1] Examples of composite indicators that include several policy goals are the Inclusive Wealth Index to measure global status on social, economic and environmental aspects suggested by the International human dimension programme (UNEP, 2014), the Index of Economic Well-being (Osberg and Sharpe, 2002), the Environmental Sustainability Index (YCELP, 2015), the Index of Sustainable Economic Welfare and the Genuine Progress Indicator (Daly and Cobb, 1989). Sustainable Measure of Economic Welfare (Nordhaus and Tobin, 1972), and the World Bank's Adjusted Net Savings. An example of a composite indicator at that sector level is the General Index of Sustainability to measure the energy system sustainability in urban areas suggested by Jovanovic et al. (2010).

Thresholds for the two core boundaries are set as parts per million by volume and extinctions per million species per year, respectively. Mace et al. (2014) argue that extinction rate is a weak metric for biodiversity loss; however, none of their three proposed metrics provide an operational definition at present. We use the thresholds suggested by Steffen et al. (2015): atmospheric carbon dioxide concentration at maximum 350 and extinction rate at maximum 10 (see Table 1 for units). Eventually, these thresholds must be specified according to geographical and institutional scales when applied at a lower than global level. Also, expected future value and substitutability between different species will be part of these difficult judgements.

Indicator for goal 3. We use the United Nations Development Programme's (UNDP) Human Development Index (HDI) as an indicator for goal 3: satisfying basic human needs. HDI is a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge, and a decent standard of living (UNDP, 2011, 2014). We contend that the minimum HDI threshold value should be set at 0.735 (Table 1).

[Table 1 approximately here]

Indicator for goal 4. We use the Gini coefficient as an indicator of intragenerational equity. The Gini coefficient is the most popular and widely used measure of inequality UNDP (2010). It measures the inequality among values of a frequency distribution in a country (for example, levels of income).

A Gini coefficient of zero expresses perfect equality (for example, where everyone has an exactly equal income). A Gini coefficient of one hundred expresses maximal inequality (for example, where one person has all the income). Using the target level set by the United Nations Human Settlements Programme (UN, 2010), we set the threshold value to 40 (Table 1).

5 Conclusion

Based on the 1987 report Our Common Future, we derive five criteria for the development of primary goals and corresponding indictors and quantified thresholds to be met. A better understanding of the global-level sustainable development concept can help UN prioritize between the 169 sustainable development targets, which was announced in September 2015 to guide world development until 2030, and in setting corresponding thresholds to be met.

The next step would be to translate the global goals derived in this paper to the national, and if possible, the local, sector or project level. This translation is not straightforward. While the Gini coefficient is designed to measure inequality at the national level, atmospheric carbon dioxide concentration and the corresponding global threshold does not provide any guidance for national policies. Furthermore, while we can agree upon global limits for carbon dioxide emissions and extinction rates, it is not obvious that these limits should be allocated in an even manner to nations, regions and sectors. Still, without resorting to a detailed examination of country-level data and thresholds, it is possible to say something meaningful about how our model should be applied to the national level.

The first policy implication of our model is that different regions and groups of countries should focus on different issues in their effort to achieve sustainability. For example:

9

- One group of countries may satisfy the thresholds set for environmental limits and human needs, but not the thresholds for participation and/or equity. The challenge is then to facilitate a transition to richer participation and a more equal distribution of wealth and opportunities. Examples of such countries may be Peru and Georgia.
- A second group of countries may satisfy the thresholds set for environmental limits, participation and equity, but not the threshold set for human needs. Clearly, the main challenge is then to help eradicate extreme poverty and enhance human capabilities, and this policy goal is more important than improving environmental conditions and ensuring an even richer participation. Policies and institutions that facilitate economic growth may be essential in achieving sustainable development for these countries. India may serve as an example for this category.
- A third group of countries may satisfy thresholds for needs, participation and equity but, as a result of their affluent lifestyles, not the imperative of respecting environmental limits. The solutions lie partly in technological improvements, partly in changing our lifestyles and partly in reducing our consumption of fossil fuels and scarce resources. Whether the moral imperative to stay within environmental limits can be reconciled with our desire for continued economic growth remains to be seen. Examples of such countries are Norway, Canada and Germany.

The second policy implication of our model is that we need a "politics of limits", as suggested by Meadowcroft (2012). Whereas the idea that there are basic human needs that must be satisfied seems to have widespread political support, the idea that there are environmental *limits* is much harder to sell. On the one hand, satisfying human needs represents a "positive" threshold – or lower limit – associated with progress, possibilities, and development. Appealing for environmental limits, on the other hand, represents a "negative" threshold, or upper limit. Thus, reducing climate gas emissions by 80% would for most politicians (and voters) be perceived as a serious constraint on progress, possibilities, and development. No wonder they (and we) will not hear of it.

The difficulties which democratic political systems experience in managing environmental problems are well documented (Lafferty and Meadowcroft (eds), 1996). This is because "environmental problems are manifest on spatial and temporal scales that fit poorly with the routines of democratic politics" (Meadowcroft (2012, p. 283)). Although there already exist many constraints on behaviour towards the environment (emission controls, protected areas, and so on), "on the whole these [constraints] do not relate directly to large-scale environmental limits, especially global limits, where the scale of human activity now threatens the long-term viability of important ecological processes" (Ibid, p. 285).

In other words, we struggle to deal with the two core planetary boundaries of combating climate change and protecting biosphere integrity. For instance, although the climate agreement delivered in December 2015 includes a quantitative goal—to hold "the increase in … temperature to well below 2 °C … and to pursue efforts to limit the temperature increase to 1.5 °C" (UN FCCC, 2015 p. 2)—it does not include a plan for urgent and significant cuts in emissions. In a column in Nature, Kevin Anderson (2015) criticizes this delay of action and argues that "… rather than requiring that nations reduce emissions in the short-to-medium term, the Paris agreement instead rests on the assumption that the world will successfully suck the carbon pollution it produces back from the atmosphere in the longer term."

The challenge of meeting needs and staying within environmental limits is as urgent today as it was when described in Our Common Future three decades ago: "We do not pretend that the process is easy or straightforward. Painful choices have to be made. Thus, in the final analysis,

sustainable development must rest on political will" (World Commission on Environment and Development (1987, p. 9)). However, rather than sitting like Vladimir and Estragon, who wait endlessly and in vain for someone named Godot to arrive, we cannot wait for politicians to act. As the poet T. S. Eliot (Eliot (1940, p. 25)) wrote, "the general ethos of the people they have to govern determines the behaviour of politicians."

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11

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Table 1. Primary goals, indicators, and suggested 2030 threshold values for sustainable development

Primary goal	Indicator	2030 Threshold
Goal 1: Securing participation	The Economist Intelligence Unit's Democracy Index[a]	Minimum 8.0[a]
Goal 2: Safeguarding long-term ecological sustainability[b]	Climate change: atmospheric carbon dioxide concentration	Maximum 350
	Biosphere integrity: extinction rate	Maximum 10
Goal 3: Satisfying basic human needs[c]	Human Development Index	Minimum 0.735
Goal 4: Promoting intragenerational equity[d]	Gini coefficient	Maximum 40

Table notes

a. The Economist Intelligence Unit, *Democracy index 2012. Democracy at a standstill* (EIUDI); http://pages.eiu.com/rs/eiu2/images/Decomcracy-Index-2012.pdf. Regime types are, full democracies (8.0 to 10); flawed democracies (6.0 to 7.9); hybrid regimes (4.0 to 5.9); authoritarian regimes (0 to 3.9)
b. W. Steffen et al. [33]. The thresholds refer to suggested planetary boundaries: parts per million by volume and extinctions per million species per year, respectively.
c. United Nations Development Programme [40]. The threshold equals "high human development."
d. United Nations Development Programme [40]. The Gini coefficient is a measure of inequality in a country. The threshold equals the "international alert line" suggested by the United Nations [37].