Chapter 1

Planetary well-being as development goal in the Anthropocene

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Abstract

The 2030 Agenda for Sustainable Development, which sets out 17 goals with a comprehensive vision for sustainable development globally, was adopted by all the countries in the United Nations in 2015. The 17 Sustainable Development Goals (SDGs) build upon, but are also an improvement on, the eight Millennium Development Goals (MDGs) adopted by UN member states in September 2000. In this chapter, it will be argued that our evolving understanding of the implications of living in the time of the Anthropocene calls for Planetary Well-being Goals (PWGs) that build upon, but can also improve, the SDGs. Planetary well-being can be defined as the highest attainable standard of well-being for human and living non-human beings within the integrated Earth system. The meaning of this concept will be explored, drawing on disciplines such as Philosophy, Development Studies, Quality of Life Studies, Sociology, Geology, and Theology. The analysis is further informed by personal experiences in development work and quality-of-life impact assessments. The chapter concludes with a list of possible PWGs and some of the most pertinent complexities to navigate going forward.

Keywords: Anthropocene, planetary well-being, quality-of-life studies, SDGs, social indicator research, sustainable development

1. Introduction

The 2030 Agenda for Sustainable Development sets out 17 goals with a comprehensive vision for sustainable development globally. It was adopted by all the countries in the United Nations (UN) in 2015 (UN, 2015a). The 17 Sustainable Development Goals (SDGs) build upon, but are also an improvement on, the eight Millennium Development Goals (MDGs) adopted by UN member states in September 2000 (UN, 2000).

In this chapter, it will be reasoned that our evolving understanding of the implications of living in the time of the Anthropocene calls for the rethinking of how humans approach development. The challenge for development in the Anthropocene is to improve human quality of life in such a manner that non-human life and the sustenance of the processes that underlie the well-being of the Earth system are at the same time conserved, restored, and, where possible, endorsed. This calls for an all-inclusive development goal of *planetary well-being*, which is more appropriate than *sustainable development* in the Anthropocene, as this chapter hopes to show.

Planetary well-being can be defined as the highest attainable standard of well-being for human and living non-human beings within the integrated Earth system. This chapter will not attempt to provide a broad overview of the planetary well-being concept. It has a more specific aim; namely, to explore why planetary well-being is a more appropriate all-inclusive development goal for the Anthropocene than sustainable development. Thus, rethinking the concept of development is aimed at how Planetary Well Being Goals (PWGs) and indicators can build upon and improve the UN SDGs and indicators. The chapter concludes with some ideas on navigating complexity in our approach to development going forward.

2. Our evolving understanding of the implications of being in a new geological epoch

The Anthropocene is a proposed new geological epoch to be added to the official geological time scale (GTS). A growing group of scientists argue that the Anthropocene epoch should follow the Holocene epoch and begin in the mid-20th century (Encyclopaedia Britannica, 2024). Lewis and Maslin (2015, p. 171) think that the impacts of human activity will probably be observable in the geological stratigraphic record for millions of years into the future, which suggests that a new epoch has begun. According to the Anthropocene Working Group (AWG) of the International Union of Geological Sciences (IUGS), the Anthropocene "has emerged as a popular scientific term used by scientists, the scientifically engaged public and the media to designate the period of Earth's history during which humans have a decisive influence on the state, dynamics and future of the Earth System" (Stratigraphy.org., 2024). The working group voted to recommend the Anthropocene as a formal geologic epoch in 2016 at the 35th International Geological Congress. For this interval to be made official, it must first be adopted by the IUGS and the International Commission on Stratigraphy (ICS) (Encyclopaedia Britannica, 2024).

Lewis and Maslin (2015) describe how human activity has altered the land surface, oceans and atmosphere, and re-ordered life on Earth. They explain how the beginning of the Anthropocene as a formal geological unit of time requires the location of a global marker of an event in stratigraphic material. Such material can be "rock, sediment, or glacier ice, known as a Global Stratotype Section and Point (GSSP), plus other auxiliary stratigraphic markers indicating changes to the Earth system" (Lewis & Maslin, 2015, p. 173). The evidence suggests that two dates appear to conform to the criteria to mark the beginning of the Anthropocene, namely 1610 and 1964 (Lewis & Maslin 2015, p. 175). The choice of either of these dates has significant political implications. If the Orbis spike[1] of 1610 is taken as the

1 A clear dip in carbon dioxide levels deduced to have occurred around 1610.

start of the Anthropocene (ibid), it would imply that colonialism, global trade, and coal brought about the Anthropocene, which has implications for the relationships between higher-income countries that have benefited from coal use from the time of the industrial revolution and countries that have been colonialised and started fossil fuel use more recently. If the bomb spike of 1964 is taken as the start of the Anthropocene, it emphasises elite-driven technological development that threatens planet-wide destruction.[2] Thus, the event or date chosen as the inception of the Anthropocene affects the stories which people construct about the ongoing development of human societies (Lewis & Maslin, 2015, pp. 177-178).

Hamilton thinks that the Anthropocene is "not just the continued spread of human impacts on the landscape or further modification to ecosystems, but rather a rupture in the functioning of the Earth System as a whole, so much so that the Earth has now entered a new geological epoch" (Hamilton, 2017, Chapter 1 The Anthropocene Rupture). Levis and Maslin (2015, p. 179) agree that human actions are driving far-reaching changes to the life-supporting infrastructure of Earth. They predict that recognition of the impact that humans have in the Anthropocene may well have increasing philosophical, social, economic, and political implications over the coming decades.

On 5 March 2024, *The New York Times* first reported that the Subcommission on Quaternary Stratigraphy (SQS) voted against the proposal to create an Anthropocene epoch (Zhong, 2024). Twelve members of the Subcommission voted against it, and only four voted in favour of it (Witze, 2024). However, a day after the first report, on 6 March 2024, the chair of the SQS, Jan Zalasiewicz, and one of the group's vice-chairs, Martin Head, said in a press statement that they are asking for the vote to be annulled. They alleged that "the voting has been performed in contravention of the statutes of the International Commission on Stratigraphy (ICS), including statutes governing the eligibility to vote" (Witze, 2024). Witze (2024) believes that the public and scientific discussions on the meaning of the Anthropocene

2 The bomb spike of 1964 refers to the peak in radionuclide fallout from nuclear weapons testing in that year.

will continue while the SQS and the ICS sort out how to handle Zalasiewicz and Head's request for a vote annulment.

The notion of this chapter is that, regardless of whether the Anthropocene is officially added to the geological timescale as a new geological epoch or not, it has become a concept that is used by scientists and broader society alike, to describe the growing understanding that humans and the Earth have entered a new phase of unprecedented human impact on the Earth system. This calls for the rethinking of how we humans approach development.

3. Rethinking our approach to development

Francis Fukuyama (2014, p. 7) notes that to study development is to study the change in human societies over time. The *Cambridge Dictionary* defines development as the process in which someone or something grows or changes and becomes more advanced (Cambridge Dictionary, 2025). If these two broad definitions of development are combined, it suggests that development has to do with a transition from one state to another, and the supposition is that the subsequent state is qualitatively better than the original state. Applied to humans, it would mean that human development is the process whereby individuals and societies transition to a qualitatively better state.

This definition is well-suited to explore the fundamental questions that underlie the complexities of an attempt to better understand and rethink our approach to development. Questions such as: "What is the original state that individuals and societies believe they must transition from? Why is the original state qualitatively inferior to the desirable state? How can we know that our evaluation of these states is accurate? These are the types of questions that philosophers study. As Sirgy et al. (2006, p. 352) put it: "Answers to the question 'What is it?' give us an ontology…Answers to the question 'What good is it?' give us an axiology…Answers to the question 'How do you know?' give us an epistemology."

The concept of well-being in Western philosophy originally evolved around two perspectives, hedonism and eudaimonism (Grénman et al., 2023; Sirgy et al., 2006, p. 384). Hedonism postulates that the pursuit of pleasure is the greatest good; and happiness is the total of hedonic moments. On the contrary, eudaimonism posits that a life of virtue should be pursued. Aristotle's definition of eudaimonia holds that true happiness is found by leading a virtuous life and doing what is worth doing (Grénman et al., 2023; Sirgy et al., 2006, p. 384). In the case of hedonism, it is qualitatively better to be happy than unhappy, and in the case of eudaimonism, it is qualitatively better to live a virtuous life than to lead an immoral life.

The process whereby individuals and societies transition to a qualitatively better state is not only the study object of Western philosophy. The meaning of development defined this way is an existential anthropological question that is universally contemplated in philosophical traditions as well as in religious traditions, including the monotheistic faith traditions, especially also in the Christian faith.

Although opinions and perspectives of theologians differ considerably, the Reformed tradition of Christian anthropology has a broad notion of what the undesirable original state of humans is, what a qualitatively better state is, and what is needed to transition to such a state. Humans are created in the image of God, but because of sin, find themselves in an undesirable state. A qualitative better state is a restored relationship with God. This is not achieved by human agency alone. The transition to such a state is made possible by Jesus Christ, God's revelation to humanity (Berkhof, 2007; McGrath, 2011; Pannenberg, 1991).

According to Dwivedi et al. (2007, Abstract), the "distinctively Western concept of development as progress has evolved from the Augustinian notion of the ascent of humanity from the City of Man to the City of God guided by divine providence to the ideas of progress in the Enlightenment, to social evolution, modernity, and the unfolding of human potential". Rist (2002, p. 33) describes how Augustine builds on

the ideas of Aristotle, and further how he took over and applied to humanity the metaphor frequently used by pagan writers, "which compared the Empire to a man passing from youth to maturity and then ineluctably entering old age". Augustine's work had a considerable influence on the history of development and opened the way to a linear view of history (Rist, 2002, p. 34).

General philosophical and theological reflection on the meaning of a good life underlies the worldview of the Western approach to development, but it must be distinguished from the way in which modern development thinking has evolved after the First and Second World Wars. Before the World Wars, the trade from the 15th century onwards and the colonisation that followed established a *mode of global accumulation,* setting in motion the process of development in modern Europe. Conversely, in the opinion of Dwivedi et al. (2007), it laid the foundation for the underdevelopment of the conquered and colonialised territories in the Americas, Africa and Asia.

Foundational work in the measurement of national income, starting in the late 1920s, was conducted by Simon Kuznets, the third Nobel laureate in economics, who played a leading role in the early development of the United States' (US) official measures of national income. Kuznets was a founder of the National Bureau of Economic Research (NBER), and subsequently the International Association for Research in Income and Wealth (IARIW) (Sirgy et al., 2006). But it was the inauguration speech of the American President Harry S. Truman in 1949 that launched the development age (Dwivedi et al., 2007; Rist, 2002, p. 71; Sachs, 1999, p. 3). According to Rist, it was the Fourth Point of President Truman's speech that caught the most attention in the media:

> Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas.... Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of

> modern scientific and technical knowledge.... On the basis of these four major courses of action we hope to help create the conditions that will lead eventually to personal freedom and happiness for all mankind (Rist, 2002, p. 3).

According to Rist (2002, p. 74), it is of particular significance that the adjective 'underdeveloped' appears at the end of the opening paragraph of Point Four, for the first time used as a synonym for *an economically backward* area. Therefore, underdevelopment is not the opposite of development, but its embryonic form, and "...an acceleration of growth was thus the only logical way of bridging the gap".

Sachs (1999, p. 28) observes that Truman's speech points to a new worldview, where the degree of civilisation in a country could be measured by the level of its production: "There was no longer any reason to limit the domain of development to resources only. From now on, people and whole societies could, or even should, be seen as the objects of development".

This mode of thinking laid the foundation for a new approach to development, where international effort and collective enterprise, based upon an increase in production and better use of the world's natural and human resources, should result in everyone becoming richer and more prosperous: "The key to prosperity and happiness was increased production, not endless debate about the organisation of society, ownership of the means of production, or the role of the State" (Rist, 2002, p. 76). Therefore, Point Four of President Truman's speech imposed a new standard, whereby the US stood right at the top: namely, gross domestic product (GDP) (Rist, 2002, p. 76). Sachs (1999, p. 5) calls this an *anti-colonial imperialism*, where development was the conceptual vehicle that allowed the US to behave as the herald of national self-determination while at the same time founding a new type of worldwide domination.

Suddenly, a concept that has since become indispensable was established, cramming the immeasurable diversity of the globe's South into one single category - the underdeveloped. That Truman coined a new word was not a matter of accident but the precise expression of a worldview: for him, all the

peoples of the world were moving along the same track, some faster, some slower, but all in the same direction (Sachs, 1999, p. 28).

But gradually, the emphasis on GDP as the principal measure for the level of a country's development came under critique. The 1960s saw the beginnings of the use of social indicators: Olson, the coordinator of *Toward a Social Report,* pointed out the inadequacy of economic indicators, such as the GDP, to reflect the well-being of nations. Indicators are needed, he said, to inform public policy respecting social problems and to provide insight into how different measures of national well-being are changing. QOL studies arose within the movement to advance the use of social indicators in research and in informing public policy (Sirgy et al., 2006, pp. 364-365).

The *Dag Hammarskjöld Report, What Now: Another Development*, was published in 1975. The report aimed to set the direction for 'another development' qualitatively better than a blind focus on gross national product (GNP) and other purely economic indicators of development. Development, according to the report, should be geared towards the satisfaction of human needs, beginning with the eradication of poverty. The other novelty in the Hammarskjöld Report, according to Rist (2002, p. 156), was that it considered *development* as a global phenomenon concerning not only the developing nations but also the industrialised countries. In 1985, a project was initiated by the Dag Hammarskjöld Foundation and the Alternatives Centre (CEPAUR) in Chile that further worked out the concept of *Human Scale Development*. The project was directed by Manfred Max-Neef (Max-Neef et al., 1991). Max-Neef et al. formulated a new theory of needs for development that, to a significant extent, overcomes the deficiencies of the basic needs approach (Cruz et al., 2009; Murray & Pauw, 2022). Max-Neef et al.'s work made a significant contribution in articulating the manner in which human quality of life is related to the possibilities of humans to actualise their fundamental human needs (Murray & Pauw, 2022).

A further advancement in development thinking was the insight that human quality of life and the well-being of the environment are interrelated. The first time that *development* and *environment* were considered together as a matter of serious consideration, was in the *Our Common Future*, report led by Brundtland, a doctor who had for a time been Minister of the Environment and was then Prime Minister of Norway: "Ecological damage was long seen as a regrettable, but necessary cost of growth, and as justifiable in terms of the benefits of 'development'. The two phenomena were treated as separate but reconcilable. This is no longer possible" (Rist, 2002, p. 179). The Brundtland Report defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (ARE, n.d.).

At the beginning of the new millennium, when world leaders gathered at the United Nations to shape a broad vision to fight poverty, the emphasis on environmental sustainability was included as Goal 7: Ensure environmental sustainability (UN, 2000).

In 2015, the Millennium Development Goals (MDGs) were followed by the 2030 Agenda for Sustainable Development. The 2015 Millennium Development Goal Report concludes:

> A bold new agenda is emerging to transform the world to better meet human needs and the requirements of economic transformation, while protecting the environment, ensuring peace and realizing human rights. At the core of this agenda is sustainable development, which must become a living reality for every person on the planet (UN, 2015).

Sachs (1999) and Rist (2002) are both critical about the ability of sustainable development to harmonise or achieve positive human and ecological outcomes simultaneously.

According to Sachs (1999, p. 60), the Brundtland Report "incorporated concern for the environment into the concept of development by erecting 'sustainable development' as the

conceptual roof for both violating and healing the environment". He says that the ecological crisis can be read as a clash of the timescale of modernity and the timescales that govern life and the Earth (Sachs, 1999, p. 189). The new concept, sustainable development, subtly shifted the locus of sustainability from nature to development: "instead of nature, development becomes the object of concern, and instead of development, nature becomes the critical factor to be watched" (Sachs, 1999, p. 81). Rist (2002, p. 184) agrees, noting that development makes it possible to increase production by using up reserves at a rate dependent not upon their necessary replacement time but on the state of existing technology.

From the discussion thus far, it can be argued that the 'concept of development' has itself developed in the last century to become qualitatively better by including new insights without abandoning insights of previous phases. The emphasis on GDP, despite many shortcomings, was qualitatively better than the colonial era, insofar as it opened opportunities for developing countries to participate more actively in trade and international fora and gradually take up a more important role in international affairs. The human needs approach was qualitatively better than solely focusing on GDP, and the way in which people such as Max-Neef and Amartya Sen further developed the human needs and capabilities approaches, articulating their importance for human quality of life, is a further development. Likewise, the emphasis on sustainable development adds the insight that human quality of life cannot be pursued without consideration of the environment. But sustainable development, as was argued, has its shortcomings, and the Anthropocene is the time to move to the next qualitatively better development ambition, namely, planetary well-being. Thus, the evolution in the understanding of the concept of human development (specifically how it unfolded in the Western philosophical tradition), can be summarised in broadly six phases: (1) pre-modern, (2) colonial trade, (3) modern GDP, (4) human needs, (5) sustainable development, and (6) planetary well-being.

Before further discussing planetary well-being as an appropriate development goal for the Anthropocene, two

assertions made thus far need further explanation; namely: i) human development is the process whereby individuals and societies transition to a qualitatively better state, and ii) there was an evolution in the last century whereby the general understanding of the concept of development has evolved and became qualitatively better.

The evaluation that there was qualitative progress in the past century in the understanding of what development entails should not be seen as a claim that development always progresses forward in a linear manner, or as a motion of confidence in human capabilities to avoid environmental disaster through the application of human ingenuity and technology.

Cruz et al. (2009, pp. 2021-2022) describe how there was a 'chrematistic turn' that only emerged in modern times, with the free-market institution, which was a reductionist turn away from Aristotle's classic distinction between *oikonomia* (the art of household management) and *chrematistics* (the art of acquisition). In pre-modern times, commerce was just one amongst four main ways in which human societies ordered their *oikonomic* process: Self-sufficiency (production for self-consumption); reciprocity (based on reciprocal actions within and across different social groups); redistribution (whereby the product is redistributed amongst the members of a group) and commerce (chrematistics). In these societies, use-value was more important than exchange value per se (Cruz et al., 2009, p. 2022).

Thus, the mode of global accumulation and the growth drive, as it manifested in colonialism and the development drive after the World Wars, was more reductionist than the art of living and living well as proposed by Aristotle's eudaimonic approach to a good life. It can be argued that the emphasis on growth as an end in itself and resulting behaviour such as consumerism, stands closer to the hedonistic tradition, whereas an emphasis on human needs and capabilities, and planetary well-being coincides with the eudaimonic interpretation of a virtuous life. The concept of sustainable development is

interesting in this regard when assessing it against these broad traditions, since it depends on what is understood by 'development'. If *sustainable development* means that economic growth must be sustained, it implies that sustained growth is the answer to a good life for the largest number of people. However, if *development* in *sustainable development* means to become something qualitatively better, the concept can include the broader description of *oikonomia* as articulated by Aristotle.

The notion to *transition to a qualitatively better state,* as proposed here as part of the definition of human development, is significant. It can be argued that the hedonic approach, whereby an increase in the number of hedonic moments amplifies happiness, emphasises the *quantitative*. Likewise, the fixation on economic growth as an end in itself, and the idea that increasing consumption of goods and services purchased in the market is always a desirable goal, focuses on *quantitative growth* through increased consumption. In contrast, the eudaimonic approach has a *qualitative* focus on a broad range of aspects and characteristics that constitute a virtuous life. Similarly, the concepts of fundamental human needs and capabilities and planetary well-being include *qualitative attributes* that constitute a good life. However, it is important to note that the *qualitative approaches* do not exclude *quantitative aspects*. In other words, the eudaimonic approach does not generally disallow enjoyment of life, but it criticises the view that maximum enjoyment is the way to a good life.

As mentioned above, the assertion that there has generally been progress in the last century in our understanding of what human development entails should not be taken as a motion of confidence in human capabilities to avoid environmental disaster through the application of human ingenuity and technology. There are numerous views about the impact that humans have on Earth in the time of human-induced climate change. Hamilton (2017) identifies "deniers and religious fundamentalism, deep greens and ecocentric philosophers, ecomodernism, and avatars of the ruling system and its intellectual apologists" (Hamilton, 2017, Do doubt

everything). However, he chooses an approach that he dubs 'new anthropocentrism':

> At the heart of the new anthropocentrism stands the "embedded subject," a character who expresses the double truth of the human in the Anthropocene, that is, the possessor of autonomy but one always guided and constrained by its assimilation into the processes that govern the Earth System.…The new anthropocentric self does not float free like the modern subject, but is always woven into nature, a knot in the fabric of nature. Embeddedness in the new view is neither local nor abstractly universal but defines an agency that is planetary, immersed in an Earth-world built by us out of nature but constrained by it, enjoying autonomy and power but increasingly up against an opponent that resists our autonomy and tightens the constraints (Hamilton, 2017, The new anthropocentrism).

Hamilton (2017) emphasises that new anthropocentrism should not be misunderstood as close to ecomodernism that remains entrenched in the humanist tradition in which human spontaneity and creativity make the future. The Anthropocene has brought a new understanding, which is "anti-humanist because it recognises the hard constraints on world-making imposed by a finite and untameable Earth" (Hamilton, 2017, The new anthropocentrism versus ecomodernism). He pleads for an ontology founded on human-distinctiveness-within-networks rather than an ontology that deprives humans of their unique form of agency: "The task now is not to reject the subject-object division but to understand the particular form that subjectivity has taken and what it must become".

The notion of this chapter is that *what we must become*, as Hamilton (2017) puts it, must be something qualitatively better. Furthermore, the assertion is that planetary well-being has emerged as the most appropriate development goal to strive for in the Anthropocene.

4. Planetary well-being as development goal

The definition of planetary well-being proposed in this chapter is that it is the highest attainable standard of well-being for human and living non-human beings within the integrated Earth system. This definition is closer to the definition of Antó et al. (2021) than to Elo et al. (2023).

Antó et al. (2021, p. 1) define planetary well-being as "the highest attainable standard of well-being for human and non-human beings and their social and natural systems". The definition proposed by this chapter specifies that well-being pertains to the well-being of human and *living* non-human beings within the *integrated Earth system*.

Kortetmäki et al. (2023, p. 23) define planetary well-being as a state in which the integrity of Earth system and ecosystem processes remains unimpaired to a degree that lineages can persist to the future as parts of ecosystems, and organisms (human and non-human) can realise their typical characteristics and capacities. Although the comprehensive work of Kortetmäki et al.'s (2023) *Interdisciplinary Perspectives on Planetary Well-being*, has to be appreciated, the reference in several of the articles of this work to a *non-anthropocentric* approach has to be critically evaluated. As argued earlier in this chapter, the view of Hamilton (2017) that an ontology founded on human-distinctiveness-within-networks rather than an ontology that deprives humans of their unique form of agency should be supported. Thus, while the insight of Kortetmäki et al. (2023) that the Earth system includes non-human beings and processes that are inherently valuable should be applauded, the use of the term *non-anthropocentric* leads the discussion in the wrong direction. As was argued in the previous paragraph, there has been an evolution in the interpretation of development. In each case, the insights of previous development paradigms were not abandoned but rather expanded. And in each case, the next concept builds on the insights of the previous concepts. Using the term *non-anthropocentric*, in the time of the Anthropocene is misleading. Understandably, this term is used by some to emphasise that the object of study should shift from being

focused on humans alone to a focus on the Earth system and to acknowledge non-human beings as inherently valuable in their own right. However, non-human beings cannot participate as agents in setting and evaluating progress towards planetary well-being development goals – it is humans who determine these goals. It is futile to disregard the importance of human quality of life and agency in planetary well-being. The endeavour should not be to make humans less important and non-humans more important, but to acknowledge the importance of sustaining the well-being of humans and living non-human beings within the integrated Earth system. Despite the critique regarding the interpretation of Kortetmäki et al. (2023) of the non-anthropocentric emphasis of the planetary well-being concept, their assessment that planetary well-being takes a systems- and process-oriented approach should be appreciated.

A further difference between the definition of planetary well-being that this chapter proposes and the definition of Kortetmäki et al. (2023), is that Kortetmäki and her co-authors emphasise the integrity of Earth system processes (such as the global climate and biogeochemical cycles of elements) and ecosystem-level processes (such as succession and pollination) instead of organismal well-being. They argue that at the organism level, "all life is rife with conflicts such as predator-prey relations, and consequently not all organisms can 'be well' all the time". This view cannot be accepted unconditionally. Although it is important to protect species, the rights and well-being of individual humans and individual living non-human beings remain important, and the dilemma caused by the rift between individuals and species cannot be solved by ignoring the existence and intrinsic value of individual lives. The task of working towards well-being becomes more difficult and more complex in the Anthropocene. Whereas the emphasis on justice in previous development paradigms included the consideration of equality between nations and individuals, and later also acknowledging the rights of future generations, with planetary well-being a further insight has emerged, namely that living non-human beings also have rights that should be respected

and that humans and living non-human beings are dependent on the integrated Earth system.

There is no universal guideline that will suffice to solve these complexities. However, this chapter contends that an understanding of what planetary well-being entails, and commitment to work towards all-inclusive planetary well-being goals, can assist individuals, social institutions, industries, and countries to perform things qualitatively better. The debate on what "qualitatively better" entails in each case and the weighing of trade-offs between the clashing needs of humans amongst themselves and the needs of humans and living non-human beings will only intensify. The reaction to this increase in complexity can trigger various responses. One extreme attitude is *over-optimism*, the belief that these complexities can be solved by human ingenuity and technology. Another extreme position is *fatalism*, a pessimistic conviction that humanity is doomed because of climate change and environmental exploitation and that there is nothing that can be undertaken to change the catastrophic fate that awaits humanity and other species. The approach of this chapter is somewhere in between these extremes. Although it is an exceptionally tough task to work towards planetary well-being, all is not lost. It is possible for individuals, societies, and nations to grow qualitatively to "something better". Thus, development does not mean quantitative economic growth, although such growth is not excluded. Development means to grow into something qualitatively better. Therefore, the notion is that planetary well-being as a development goal is a qualitatively better goal to strive for in the Anthropocene than the previous development goals proposed since the times of colonialism and the two World Wars. Importantly, the claim that development has taken place; in other words, that transition to a qualitatively better state has taken place, has to be based on evidence. This calls for planetary well-being goal indicators.

5. Towards planetary well-being goal indicators

The concept of *planetary well-being* includes human well-being and the well-being of living non-human beings within

the integrated Earth system. Therefore, the establishment of relevant indicators should include indicators that measure human well-being, as well as indicators that measure the well-being of living non-human beings, and the supportive Earth system processes.

As was reasoned earlier in this chapter, there was an evolution in the understanding of the concept *human development* in the last century, whereby the emergence of new insights leads to qualitative improvements, without abandoning the insights of previous phases. This means that the establishment of planetary well-being indicators must build on the work that has been performed in the past century. The most comprehensive set of indicators that planetary well-being indicators can build on is the UN SDGs (UNDESA, 2023).

De la Rosa Ruiz and Carrascal Domínguez (2022) provide a comprehensive list of conventions that contributed to the creation of the SDGs. In the First United Nations Development Decade (1960 to 1970), programmes were created to eliminate illiteracy, hunger and disease and promote inclusive education. The United Nations Development Programme (UNDP) was created during this decade in 1965. When the first measures were evaluated, it was noted that the set goals had not been reached. Therefore, the Second United Nations Development Decade (1971 to 1980) was proclaimed, which contains terminology, ideas and approaches that are linked to the SDGs, such as goals, targets, reviews, and assessments. The Third (1981 to 1990) and Fourth (1991 to 2000) United Nations Development Decades set out new strategies to achieve the Millennium Development Goals (UN, 2000). Several conferences laid the ground for UNDP work for the SDGs including the World Summit for Children, the United Nations Conference on Environment and Development, the World Conference on Human Rights, the International Conference on Population and Development, the World Summit for Social Development, the Fourth World Conference for Women, and the Second United Nations Conference on Human Settlements (De la Rosa Ruiz & Carrascal Dominguez, 2022, pp. 100-102). The UN Department of Economic and Social Affairs (UNDESA) describes the history

of the SDGs, stating that the SDGs build on decades of work by countries and the UN, including the work of their department (UN, 2015).

At the beginning of the new millennium, world leaders gathered at the United Nations to shape a broad vision to fight poverty in its many dimensions. This led to the eight Millennium Development Goals (MDGs) (UN, 2000). The eight goals were: Goal 1: Eradicate extreme poverty and hunger; Goal 2: Achieve universal primary education; Goal 3: Promote gender equality and empower women; Goal 4: Reduce child mortality; Goal 5: Improve maternal health; Goal 6: Combat HIV/AIDS, malaria and other diseases; Goal 7: Ensure environmental sustainability; and Goal 8: Develop a global partnership for development (UN, 2000). The Millennium Development Goals Report of 2015 (UN, 2015b) states:

> Although significant achievements have been made on many of the MDG targets worldwide, progress has been uneven across regions and countries, leaving significant gaps. The gaps mentioned include persisting gender inequality, gaps between the poorest and richest households, and between rural and urban areas, climate change and environmental degradation undermine progress achieved, and poor people suffer the most, conflicts remain the biggest threat to human development, and millions of poor people still live in poverty and hunger, without access to basic services (UN, 2015b).

The MDGs were followed by the 2030 Agenda for Sustainable Development, adopted by all United Nations members in 2015 (UN, 2015a), which created 17 Sustainable Development Goals (SDGs). They were created with the aim of peace and prosperity for people and the planet (UN, 2015a). The short titles of the 17 SDGs are: No poverty (SDG 1); Zero hunger (SDG 2); Good health and well-being (SDG 3); Quality education (SDG 4); Gender equality (SDG 5); Clean water and sanitation (SDG 6); Affordable and clean energy (SDG 7); Decent work and economic growth (SDG 8); Industry, innovation and infrastructure (SDG

9); Reduced inequalities (SDG 10); Sustainable cities and communities (SDG 11); Responsible consumption and production (SDG 12); Climate action (SDG 13); Life below water (SDG 14); Life on land (SDG 15); Peace, justice, and strong institutions (SDG 16); and Partnerships for the goals (SDG 17) (UN, 2015a).

Each of the 17 goals has targets, and each target has indicators used to measure progress towards reaching the targets. The targets are either outcome targets (circumstances to be attained) or means of implementation targets (Bartram et al., 2018). The SDGs are a qualitative improvement on the MDGs, but some targets and indicators are still in the paradigm that understands development as economic growth, in the tradition of Harry Truman and that ultimately divides the world into Developed and Developing countries. Compare, for example, SDG Targets 8.1 and 17.2:

> *SDG 8.1: Sustainable Economic Growth*
>
> Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries (ICCROM, 2025).
>
> Target 17.19: Further develop measurements of progress
>
> By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries (UNStats, 2025).

It does not fall within the scope of this chapter to evaluate the comprehensive list of SDG goals, targets, and indicators. The argument is that in the time of the Anthropocene, we need to incorporate the emerging understanding that humans and living non-human beings are part of the integrated Earth system. This requires that human development be defined as the process whereby individuals and societies transition to a qualitatively better state. A qualitative better state can include quantitative growth, but importantly, it does not depend on quantitative

growth. This is a more appropriate definition for development than definitions that presuppose economic growth as the only way to further human development.

As was argued earlier in this chapter, the emergence of new insights leads to qualitative improvements, without abandoning all of the insights of previous phases. Therefore, planetary well-being indicators can refer to many of the SDGs. What has to be asked in the case of each goal, target, and indicator, is not if it contributes to sustainable development, but if it contributes to planetary well-being. The shift to planetary well-being as the ultimate goal, as opposed to sustainable development or human quality of life, does not entail taking on a non-anthropocentric approach, but rather realising that we have entered an epoch that is more anthropocentric than ever before. The challenge is not to shift the focus from human well-being towards non-human well-being. It is rather to realise that in pursuit of every human development goal, there are planetary well-being implications. Therefore, human development should be planned, designed, executed, and monitored in such a manner that planetary well-being goals are considered and optimised.

Furthermore, what must be worked out in more detail are the trade-offs between goals, targets, and indicators, asking not only about the relationship between richer and poorer countries, and considering future human generations, but also thinking about the rights of living non-human beings. Sterba (2014), as quoted by Stamm et al. (2023), argues that a reconciliation between anthropocentric and non-anthropocentric ethics is possible. He acknowledges the intrinsic value of all species, but he argues that in certain circumstances the well-being of humans can be prioritised, for example in the case of *human defence* and *human preservation*. However, the *principle of disproportionality* must also be considered: actions that meet non-basic or luxury needs of humans are prohibited when they aggress against the basic needs of animals and plants (Stamm et al., 2023, p. 183).

Although the SDGs are intended to include the creativity, know-how, technology, and financial resources from all of society in working together towards achieving the goals (compare SDG 17) it is difficult for most persons to remember seventeen goals. A simpler model is needed to make it possible for important stakeholders such as children in their early childhood to participate and take ownership of the vision towards a qualitatively better future. The seven Planetary Well-being Goals (PWGs) proposed in the illustration below include, but are not limited to, the seventeen SDGs.

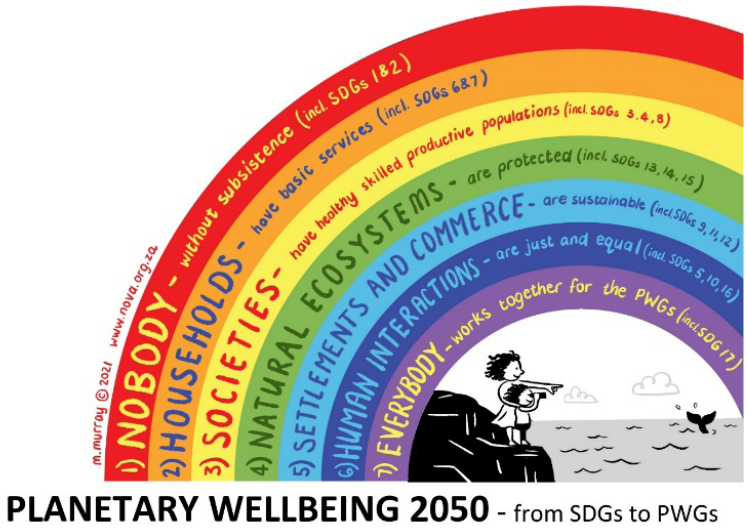

Figure 1: Planetary well-being – designed by the author

Thus, the PWGs that this chapter proposes are:

1. NOBODY without subsistence
2. HOUSEHOLDS have basic services
3. SOCIETIES have healthy, skilled, productive populations
4. NATURAL ECOSYSTEMS are protected, restored, and endorsed
5. SETTLEMENTS AND COMMERCE are sustainable
6. HUMAN INTERACTIONS are just and equal
7. EVERYBODY works together for the PWGs

6. Navigating complexity - some ideas for the way forward

What is new in the Anthropocene paradigm is not complexity per se but the urgency to better understand the impact of humans on the Earth system, and to act timeously and on scale to lessen the negative impacts that humans are causing. Navigating complexity means finding a mid-way between the extremes of fatalism and optimism in human attempts to transition to a qualitatively better state. The knowledge that we only have a partial, or even limited, understanding of the workings of the Earth system does not mean that we should not invest our efforts in attaining a better understanding of how various natural and social subsystems relate to each other and how the constitutive parts of the system contribute to the system as a whole. According to Sachs (1999, p. 120), "the biosphere is conceived as a system of interactive components where no single part – oceans, atmosphere, rock, vegetation, animal world, human beings - can be adequately understood in isolation from the others; the sciences - and particularly the bio-sciences on one side and the geo-sciences on the other – are challenged to undertake greater integration". Planetary well-being as a development goal will need the insights which the human sciences render on the *relations of meaning*, and the insights which the natural sciences render on the *relations of cause and effect, and probabilities* (compare Sachs, 1999, p. 181).

It is unavoidable that there will be certain hierarchies and conflicts in terms of how we value the individual and collective lives of individuals and the lineages of species. There will also be a hierarchy in terms of our understanding of phenomena and systems, as well as our ability to intervene responsibly with the intention to positively impact planetary well-being.

What this chapter has presented is not a solution to the complex challenges that face humanity in the Anthropocene. It asserts that planetary well-being is a qualitatively better all-inclusive development goal for the Anthropocene than sustainable development, especially if sustainable development means that growth must be sustained as the key to a better life

for all. Instead, it has been proposed that human development means transitioning to a qualitatively better state. To strive for planetary well-being, means to include humans and living non-humans as part of the Earth system in the reflection when strategies are drafted aimed at qualitative improvement by various stakeholders, locally, nationally, and internationally. Through interconnectedness, made possible by technology, more and more people are local and global citizens simultaneously. Through the World Wide Web and social media many are aware of happenings far from where they find themselves. This participation is not only as consumers of information, but there is also the real possibility to contribute by participating in conversations with others on multiple platforms. The question arises: If I am a local and a global citizen in terms of my participation in conversation, am I not, and how can I also be a global citizen in terms of my responsibilities? The universal and local are interconnected in ways that have never been possible before. The *Internet of Things* (IoT) and *artificial intelligence* (AI) will further increase the number of connections. It is not possible to turn the wheel backwards again and pretend that we have not seen the satellite images of Earth from space, showing the delicate Earth, our home, bursting with life. Earth is observed in this satellite image as one system in space, with no prominent boundaries observable, such as the divide between rich and poor, developed and underdeveloped, and Global North and Global South. The distinction between the Global North and the Global South is a boundary that stands in the paradigm of Harry Truman's distinction between developed and underdeveloped people of the world. It is a boundary that can be abolished in the Anthropocene.

Sachs (1999, p. 172) refers to the interesting concept of 'environmental space'. He argues that it captures the two central concerns of sustainability; namely, the concern for ecology and the concern for equity and he asks: "Are the rich countries capable of living without the surplus of environmental space they appropriate?" Environmental space is a broader concept than, for example, a carbon footprint. Most interesting would be if environmental space is calculated backwards and forwards

in time. Rich countries have consumed much environmental space in the past century, but likewise, poor countries will take up more and more environmental space if they follow the same developmental trajectory as richer countries. If the average life expectancy of an individual is 75 years, and if the average age at which a person has their first child is 25 years, then it means that this individual will be alive together with their offspring into the third and in some instances, the fourth generation. We cannot pretend that it does not make a difference how many children people have when calculating the carbon footprint or environmental space of an individual and their offspring. A new paradigm would be to regard all persons and countries as world citizens and to calculate environmental space looking backwards and forwards in time.

To move forward in the Anthropocene, we should move beyond the type of discourses that portray the Global North as the sole sinner and the Global South as the beggar, who hopes to benefit materially from the guilt which the North accumulated since colonial times to the detriment of justice and the ecology (compare Murray, 2003). We are all human beings in need of human development; namely, to transition to something qualitatively better. With satellite and other technologies, we continue to learn how small and fragile we are and how precious life on Earth is. Our salvation does not principally depend on economic growth: we need to rediscover what it means to be human. Humans are the only species that we know of at this stage that contemplates the meaning of planetary well-being and prays that we succeed in transitioning to something better. May our prayers be answered.

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