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Beyond 2030: structures for achieving sustainable development

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With 2030 quickly approaching and hence the end of the Sustainable Development Goal (SDG) timeline, it is necessary to start the conversation as to what the post-2030 international development goals, that will take over from the SDGs, will look like. Building on the experiences of implementing the Millennium Development Goals (MDGs) and SDGs, there is the possibility of making the post-2030 goals the most efficient and successful to date. This perspective explores the lessons that have been learnt from the MDGs and SDGs, and together with a consideration of emerging global trends develops proposals for post-2030 goals and targets. In total seven goals are suggested: (1) Operate within planetary boundaries (2) Create growth within resource limits (3) Provide access to basic services for all (4) Eliminate poverty and hunger (5) Reduce inequality (6) Deliver good health and education for all (7) Build strong institutions and international partnerships. The goals are categorised as being: (i) Environmental and Economic (ii) Physical Assets (iii) Social, and (iv) Collaboration. System interdependencies and possible causal connections between the proposed post-2030 goals are also explored. A novel approach of five yearly assessments of the risks involved *if the targets are not met*, together with suggestions for corrective action is discussed, which will help inform governments and decision makers of the urgent actions needed. To avoid a disruptive future, careful formulation of the post SDG period beyond 2030 is urgently needed to provide a fair and consistent framework to hold both government and industry to account at local, national, and international levels. This will require the strengthening of existing international institutions and strategies for the financing of development.

KEYWORDS

Sustainable Development Goals, planetary boundaries, Global Catastrophic Risk, international development, United Nations

1 Introduction

Global progress towards reducing poverty, and achieving more equitable and sustainable living standards has been significant in the past decades as a result of international efforts through the United Nations' Millennium Development Goals (MDGs) from 2000 to 2015, and the Sustainable Development Goals (SDGs) from 2015 to 2030 (United Nations, 2022a). Whilst the MDGs were not achieved in their entirety (Ruhil, 2017), extensive progress was made and their scope and ambition formed the foundation of the SDGs. Similarly, it is likely that the SDG program will not be fully implemented by the date of full implementation of 2030 (Filho et al., 2023), especially after recent setbacks from COVID-19 (Fenner and Cernev, 2021) and continuing military conflicts in Ukraine and elsewhere (OCHA Services Reliefweb, 2022).

A new set of goals (and related targets) that build on the work completed will need to be formulated for the period after 2030, through a transition similar to that from the MDGs to the SDGs. Currently it is unclear how these goals should be formulated and what they should include. Thus, as we approach 2030, it is necessary to consider lessons learnt from how the MDGs and SDGs have been implemented, and start to envisage what form new goals post-2030 will take.

1.1 Methodology

To facilitate discussion of future goals, this perspective develops a possible set of post-2030 goals. To achieve this, the methodology is as follows. The progress achieved through the MDG and SDG programmes, including critiques of their shortcomings are firstly drawn from the literature. Following this, future global trends are explored, with particular emphasis on planetary boundaries, Global Catastrophic Risk, and the climate emergency. These future trends are considered in relation to how they may impact international development targets over the coming decades. Using the literature review, and the identified future trends, a set of goals and targets are then formulated. These goals reflect the positives, as well as the lessons learnt of the MDGs and SDGs presented in the literature review, and the opportunities highlighted by future trends. The intention is to contribute to discussion over what will be needed to replace the current SDGs after 2030 through stimulating debate around what a post-2030 development agenda should include.

2 Main

2.1 Previous international development goals

2.1.1 Millennium development goals 2000–2015

The MDGs consisted of eight goals, seven of which sought to achieve health, environmental, and social outcomes, and Goal Eight that aimed to "develop a global partnership for development" (United Nations, 2015a). Significant progress was made across all eight of the goals, with declines in levels of extreme poverty and hunger, increases in primary school education rates, and reductions in child mortality being some of the greatest achievements (United Nations, 2015b). In retrospect, the United Nations (2015b) described real time data and progress updates as being important and acknowledged that the MDGs had numerous shortfalls regarding their scope and the extent of what they delivered including:

- Gender inequality persisted.
- Big gaps still existed between the rich and poor, urban and regional communities, north vs. south, and developed vs. developing countries.
- Climate change and environmental degradation undermined progress.
- Conflicts remained the biggest threat to human development.
- Millions continued to live in poverty without access to adequate services.

The MDGs were criticized as non-action oriented, but realised as an effective method to develop political and public support (Ruhil, 2017). They did not sufficiently address environmental and sustainability issues and were predominantly focused on social issues, whilst approaching social issues with a one size fits all approach created by developed nations (Byrne et al., 2011; Ruhil, 2017; Carant, 2016; Fehling et al., 2013).

2.1.2 Sustainable Development Goals 2015–2030

The SDGs commenced in 2015 to continue the work of the MDGs. Consisting of 17 goals, which in turn can be classified in different ways, refer Figure 1, there was more of an emphasis on sustainability, climate action, and to protect the planet (United Nations, 2020a).

Whilst the 2030 end date of the SDGs is still several years away, it has been realised that progress to date has been insufficient (Moyer and Hedden, 2020), and that even before COVID-19 many of the goals, including those related to health and renewable energy were not going to be achieved by 2030 (United Nations, 2020b).

Recent Sustainable Development Goals Reports (United Nations, 2022a; United Nations, 2023) identify that recent multiple and simultaneous crises, including the COVID 19 pandemic, have impacted progress, and diverted attention and priorities away from medium and long-term goals such as the SDGs, shifting the focus to short term issues that threaten ambitious national and international planning and is squeezing the available funding for sustainable development. Progress on climate and biodiversity goals is too slow, especially in rich countries, and in many low-income and lower-middle-income countries performance on SDG 1 (No poverty) and SDG 8 (Decent Work and Economic Growth) remain below pre-pandemic levels. The Sustainable Development Goals Report (United Nations, 2023) goes further, observing: "The Sustainable Development Goals are disappearing in the rear-view mirror, as is the hope and rights of current and future generations. A fundamental shift is needed—in commitment, solidarity, financing and action—to put the world on a better path."

The United Nations (2020b) identify that better data collection and processing is crucial to the future achievement of the SDGs, which has been a criticism since the MDGs (Attaran, 2005). Contradictions between SDGs have been identified (Carant, 2016; Lee et al., 2020; Hillerbrand, 2018). The SDGs have been criticised as being too influenced by international foundations and non-governmental organisations, and overuse as marketing strategies for corporations to demonstrate 'Philanthropic-Capitalism' (Ruhil, 2017). With respect to both the MDGs and the SDGs and their achievements, obligation is also an issue as there are no incentives (let alone binding conditions or requirements) for countries or industry to achieve the goals (Rashed and Shah, 2021). Many corporate entities have used the SDGs to guide Environmental, Social, and Governance (ESG) practices and policies (Global Compact Network Australia, 2021; Ali et al., 2018), as have governments to drive domestic policy (Global Compact Network Australia, 2021; Forestier and Kim, 2020; OECD, 2016; Ladan, 2018). The post-2030 development goals should draw on these tangible examples to help guide how the new goals can require that industry and governments are under some obligation to achieve progress, whilst also taking into consideration the threat to achievement posed by increases in natural and man-made disasters and conflicts (Ruhil, 2017). The lessons learnt from the MDGs and SDGs are summarized in Table 1.

Classification	Goals	Description
Outcome/ Foundational goals		These represent vital outcomes of achieving other goals and they are also critical in maintaining both a healthy human and environmental resource base on which progress towards all goals can be built.
Human input goals		Have the potential to help meet or undermine other SDG
Physical assets goals		Infrastructure and service related goals
Enabling goals		Necessary for investment in other goals

FIGURE 1
The United Nations Sustainable Development Goals classified into different categories (Cernev and Fenner, 2020; Fenner et al., 2023; United Nations, 2015c).

TABLE 1 Summary of lessons learnt from the MDGs and SDGs.

Summary of lessons learnt from the MDGs	Summary of lessons learnt from the SDGs
• No obligations or binding conditions • Insufficient data/progress tracking • Insufficient progress achieved • Progress is undermined by climate change, environmental degradation, and conflict • Wording and ambition of goals/targets means they were always unlikely to be achieved • Approached social issues with a one size fits all mentality • Did not sufficiently address environmental/sustainability issues • Insufficient initial baselines for progress to be measured against	• Insufficient data/progress tracking • Too many targets are unachievable and require too many resources • Contradictions between goals/targets should be avoided • Targets are black and white and do not consider the spectrum of possibilities • Too much influence from international foundations and non-governmental organisations • Overuse as marketing strategy for companies • No obligations or binding conditions • Easily derailed by world events

2.2 Post-2030 trends

Several critical drivers and constraints beyond 2030 can already be identified, as follows.

2.2.1 Global catastrophic risk

Global Catastrophic Risks (GCR) are defined as risk events that are global in nature, yet they are endurable and humanity can recover and rebuild from them (Bostrom and Ćirković, 2008). GCRs have the potential to inhibit humanity's resilience to future large scale risk events (Farquhar et al., 2017) and there is the possibility of chain reactions existing between GCR events (Turchin and Denkenberger, 2018; Cernev and Fenner, 2020). GCRs encompass risk events that involve: weapons of mass destruction, catastrophic climate change, ecological collapse, pandemics, asteroid impact, supervolcanic eruption, and artificial intelligence (Global Challenges Foundation, 2020). GCRs are strongly associated to Disaster Risk Reduction (Cernev, 2022), thus incorporation and explicit representation in a future Sendai Framework for Disaster Risk Reduction that goes alongside the post-goals would be advantageous. The increasing risk of armed conflict, such as that in Ukraine and Gaza, has the potential to disrupt global supply chains leading to widespread famine and catastrophic disruption to livelihoods in those regions already suffering most from poverty, hunger and inadequate access to essential services.

2.2.2 Exceeding Planetary boundaries

The planetary boundaries (Stockholm Resilience Centre, 2021; Rockström et al., 2009; Steffen et al., 2015) provide a framework for understanding and defining a safe operating space for humanity with regards to the Earth System. There is extensive uncertainty associated with humanity's position within each of the boundaries. Figure 2 illustrates current estimates, with Earth beyond six of the nine boundaries (Richardson et al., 2023).

Their potential incorporation into international development goals and objectives remains largely undeveloped. The framework is advantageous for use in policy as the identified boundaries set a threshold, and hence provide a timeline for action that needs to be taken (Steffen et al., 2015). Whilst not explicitly alluded to in the SDGs, the planetary boundaries are indirectly addressed through several of the goals and their targets, in particular Goal 13: *Climate Action*, Goal 14: *Life Below Water*, and Goal 15: *Life on Land*. Planetary boundaries also introduce the concept of critical thresholds or tipping points that cannot be exceeded, as beyond them is irreversible change (Steffen et al., 2015), and it is acknowledged that there exist significant interconnections and causal feedback loops between the planetary boundaries which can increase global risk (Kareiva and Carranza, 2018; Lade et al., 2020). The planetary boundary associated with biodiversity (biosphere integrity), reflects another trend, that of the increasing awareness of increasing biodiversity loss, and the importance of addressing it. Planetary boundaries might be used to form the basis of science based targets (or budgets) within which future development activity must be delivered.

2.2.3 Climate Emergency

Human caused global warming has warmed the climate at an increasing rate, with the climate system in a state that has not been observed "over many centuries to many thousands of years" (IPCC, 2021). Local effects of this warming are evident around the world, with increased numbers of heatwaves, heavy precipitation, droughts, and tropical cyclones (NASA, 2021; IPCC, 2021). Much of the current focus at both international and local levels for government is on mitigating climate change, which has resulted in significant public pressure in the area for action to be taken that may in turn set, and even distort the wider agenda.

Nationally Determined Contributions (NDC) are critical to the achievement of climate change goals, in particular the Paris Agreement such that "the Paris Agreement (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve." These NDCs should be incorporated into the post-2030 goals.

2.2.4 Socio-economic pressures

Despite significant progress to date in socio-economic areas associated with both the MDGs and the SDGs, as well as national and local government initiatives, socio-economic pressures are increasing. Socio-economic pressures not only undermine global progress to date in social and economic areas but also increase global instability and

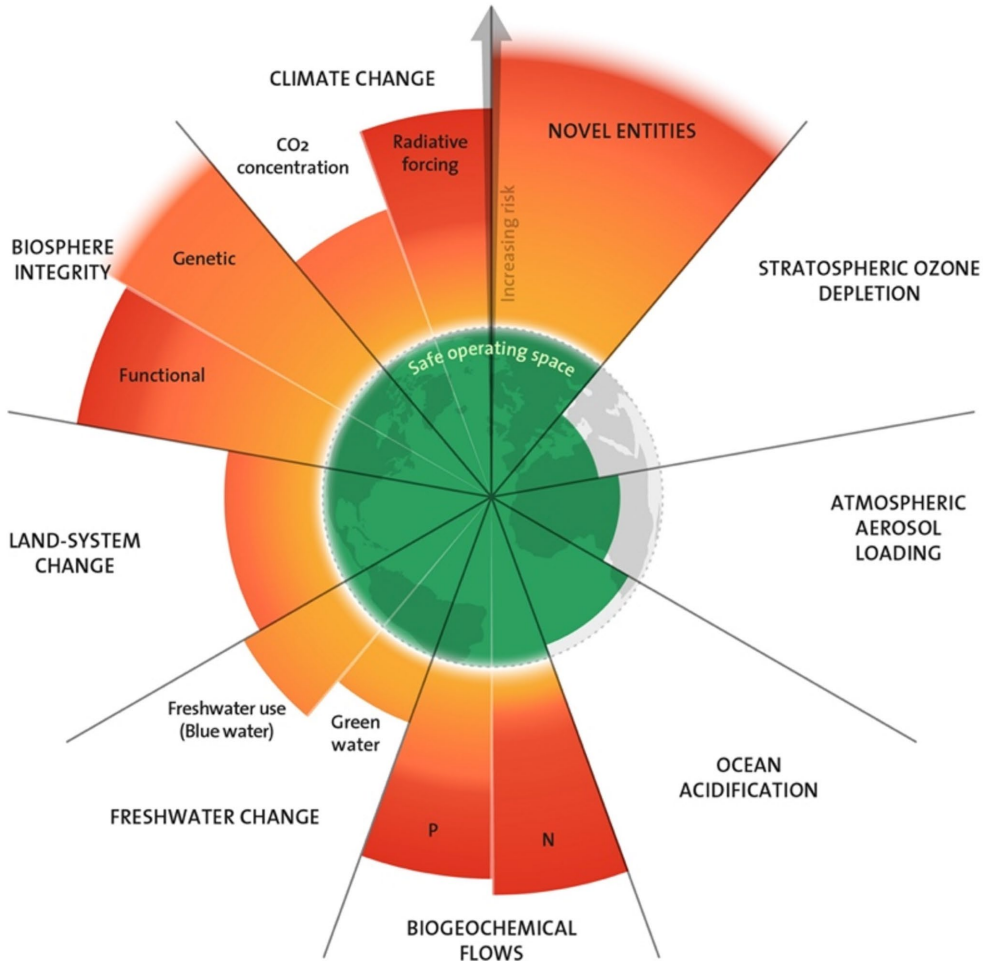

FIGURE 2
Humanity's position within each of the planetary boundaries (Azote for Stockholm Resilience Centre, based on analysis in Richardson et al., 2023).

threaten future progress, with countries needing to look internally to focus on securing supply chains, resources, and food.

2.3 Post-2030 proposal

It is evident that the international development goals that are to follow on from the SDGs need to build on the progress achieved to date while addressing the numerous deficiencies and limitations discussed above, incorporating the UN Sustainable Development Goals Reports priority areas (United Nations, 2022b; United Nations, 2023).

For a post-2030 Agenda Shulla and Filho (2023) have argued that targeted cooperation within the EU and globally is needed to enable the transformation of economies towards sustainable development, for example through responsible consumption and production patterns, as well as clean and affordable energy. Climate policy, sustainable development and poverty reduction are inextricably intertwined so any actions in the context of the post-2030 Agenda need to take these issues into account. They also point to the transformations needed for the SDGs' implementation are related to financing, green technology and sustainable lifestyles and suggest these transformations should consider the planetary boundaries and foster education at all levels since education is one of the keys to the achievement of all Goals in the long term.

2.3.1 Issues to consider beyond 2030

The 2022 Sustainable Development Goals Report (United Nations, 2022b) suggest that the SDGs should remain the roadmap for achieving sustainable development beyond 2030. However any newly formulated international development goals to succeed the Sustainable Development Goals post-2030 need to take the following aspects into account, which have been addressed in earlier sections of the perspective:

- There should neither be excessive numbers of goals nor targets within goals.
- Goals need to be formulated such that progress can be accurately, and constantly monitored.
- Goals need to include private industry and not just be for governments.
- Goals should clearly identify stakeholders, who need to also be held accountable.
- Goals and their targets should not contradict or conflict with other goals or targets.
- Goals should be developed in a way to identify and minimise Global Catastrophic Risk (GCR).
- Environmental and sustainability goals should address all areas of concern from the Planetary Boundaries Framework. The goals should focus on limits and critical thresholds—for example: if a 2°C increase in global temperatures is associated with x ppm of CO_2 in the atmosphere, then x—(existing ppm CO_2) is the fixed amount of CO_2 that we can emit and sets our 'budget'.
- Ultimately, goals and their targets should be realistic, and achievable.

Taking into account the above, the structure of the post-2030 development goals should broadly consider:

- *Timelines*—over what timelines should the post-2030 development goals be?
- *Goal and target formulation*—how should the post-2030 development goals and their targets be formulated?
- *Progress assessment*—how should progress towards the post-2030 development goals be assessed, as well as enforced and implemented?

Breaking from the MDGs and the SDGs, which both had 15 year implementation and achievement timelines, it is proposed that the next set of goals have an implementation and achievement timeline of 20 years. This timeline of 2030–2050 would align well with the international net zero 2050 targets, and it would also provide an extra 5 years for goals to be successful, whilst also providing the opportunity for three interim assessments at 5 year intervals from 2030. The level of required detail, and the response in the event that measurements indicate that progress is off track need to be determined and discussed with stakeholders.

This approach lends itself to the possibility of using the five yearly assessments as feedbacks that can result in future changes to increase the likelihood of future goal successes. Extension of the goal period to 20 years would facilitate longer, and more continuous opportunity for international development, whilst also providing time for geopolitical situations, should they arise, to be resolved.

Furthermore, there has been recent discussion in the literature as to the sustainable development considerations post-2030 and into the future (van Vuuren et al., 2022; van Vuuren et al., 2015; Moallemi et al., 2022), including how to incorporate future climate risks into financial systems (Monasterolo, 2020). Suggestions include the creation of a sustainable development target space to reduce the unstructured, broad, and complex nature of the current SDG targets, and can hence be used to assess sustainable development scenarios (van Vuuren et al., 2022). In creating such a target space, van Vuuren et al. (2022) highlight the importance of targets being socially relevant, science-based, valid post-2030, and quantifiable. Additionally, Moallemi et al. (2022) highlight the extensive interconnections and trade-offs that exist within the current SDGs, and that with adequate early planning, such interconnections and trade-offs could be used to accelerate progress towards 2050 and 2,100 targets that are even more ambitious than the SDGs.

2.3.2 Proposed structure for post 2030 development goals

The challenge is to comprehensively address the complexity of multiple interlinked issues whilst retaining clarity through a streamlined and simplified set of manageable headline goals. Any post-2030 goals will have to take into account the importance of global health development as well as the need for unprecedented action on climate change, as well as the Nationally Determined Contributions (NDCs) of countries whilst also incorporating lessons learnt from the MDGs and SDGs. When structuring the goals, consideration should also be given to the facilitating of alignment to other global programs. Beyond NDCs, the post-2030 goals should follow on from the SDGs to be closely linked to the Paris Agreement, the World Health Organization's Global Program of Work, and the World Bank's Evolution Roadmap. This can be achieved by post-2030

goals and targets having a similar, yet updated, structure to the SDGs. Future synergy between global programs will be important to their success.

Fundamentally, the goals and their targets need to be realistic and achievable, and should not be excessive in number. It is proposed that the structure of the post-2030 development goals resemble those that are suggested in Table 2. There are four proposed categories of goals: Environmental and Economic Goals, Physical Assets Goals, Social Goals, and Collaboration Goals. The goals presented in Table 2 use learnings from the current SDGs to create categories of outcome/foundational, human input, physical assets, and enabling goals (Cernev and Fenner, 2020).

The Environmental and Economic category has been included to meet the need of achieving sustainable growth. One goal dedicated to the planetary boundaries, and a target for each of the boundaries to help ensure that tipping points are not reached, ensures that environmental consideration is given to topics including climate change, and biodiversity levels. The other goal is to create growth within resource limits. The environmental goals were chosen so that they could incorporate the planetary boundaries, and provide a way to develop corporate responsibility. These goals can downscale to a country level through the use of a budget approach that reflects each country's emissions and impact across Earth systems.

The Physical Assets category relates to the provision of basic services for all, including: clean water and sanitation, electricity, internet, and other basic services. This category provides an opportunity to continue much of the unfinished MDG and SDG work.

The social category contains the eradication of poverty and hunger, reduction of inequalities, and education related human goals. These are closely linked to and facilitated by the Physical Assets goals.

Finally, the collaboration category consists of the goals that seek to foster and develop international collaboration and reduce geopolitical tensions, as well as incorporate SDG priority action areas, refer section 2.2.

Table 2 shows that that the proposed structure for the post-2030 development goals would have an associated risk framework, which could be an updated Sendai Framework for Disaster Risk Reduction that incorporates Global Catastrophic Risk recognition and mitigation measures, (refer Section 2.2.1). In developing the proposed structure for the post-2030 development goals in Table 2, it is realised that potential causal relationships exist, which are discussed in Section 2.3.3. The presence of these causal relationships, and understanding where they may exist helps to keep the number of goals, and their associated targets, low in number. A low number of goals and targets significantly simplifies the progress monitoring and reporting that would be required, and the processing of collected data to assess progress.

Targets associated with the goals incorporate the issues discussed throughout this perspective as well as the 2022 Sustainable Development Goal Report's (United Nations, 2022a) priority actions. The targets proposed in Table 2 initially assume steady linear progress across five-year periods, whilst it is possible to have targets that have greater early wins before tailing off, or alternatively delaying action until other actions/capabilities are consolidated, the linear approach has been chosen to simplify data collection, management, and progress tracking across targets and goals. However, it is acknowledged that in some countries and circumstances it may be necessary to have progress at different speeds at different times. Whilst the number of targets has been specified, from the lessons learnt from the implementation of the SDGs it is advisable for such targets to be as few as possible. Setting targets is a complicated process, and any targets agreed on by the United Nations will be the product of extensive discussions and negotiations.

2.3.3 System interactions

When dealing with a large and complex system, it is necessary to consider possible system interactions that exist, and how the system may evolve over time. These interactions are especially important when considering the current SDGs (Cernev and Fenner, 2020; Carant, 2016; Pradhan et al., 2017), and should be considered when developing possible post-2030 development goals for two reasons. Firstly, understanding the interactions means that contradictions between targets can be identified and addressed, if not eliminated and interdependent synergies understood. Secondly, by understanding the system, intervention points can be discovered where a small amount of effort can result in a large, and positive, chain reaction and unintended consequences of narrowly informed actions avoided.

It is expected that there would exist significant causal relationships between the suggested goals and their targets, such as the *Operate within Planetary Boundaries* goal being influenced by the *Create growth within resource limits* goal, thus potentially accelerating progress as with the SDGs (Fenner and Cernev, 2021; Weiland et al., 2021). Interactions causing diverging results (Pradhan et al., 2017) should be avoided whilst considering how the goal system may evolve over time.

2.3.4 Further considerations

Progress towards each of the targets and thus the overarching goals should be continuously monitored through accurate measurement and consistent and universal reporting at the United Nations. The goals and their targets should be developed and worded such that they are not ambiguous and can enable for accurate data to be obtained. It is suggested that whilst the collection of data to measure progress towards the goals is continuing that there be an evaluation period every 5 years (2035, 2040, and 2045). This would provide an opportunity for extensive progress assessments to be made and for strategic changes to be suggested and incorporated if necessary.

In a novel departure from previous practice, an assessment of the risks by the United Nations should take place at each 5 year period. This assessment would assess the risks involved *if the targets are not met*, and are reported as either having increased or decreased over that time with suggestions for corrective action presented. This is a novel approach, and specifies a new mechanism which will help inform governments and decision makers of the urgent actions needed, by linking the rate of progress towards a goal with future consequences if the goal remains unmet. For example, if water and sanitation targets remain unfulfilled, a significant proportion of a population may suffer debilitating illness, this will impact on their economic productivity exacerbating lack of growth and therefore the ability to provide resources necessary to achieve other goals. An estimate of the

TABLE 2 Overview of the proposed post-2030 development goals and targets.

Category	Goals	Targets	Associated risk framework
Environmental and economic	1. Operate within Planetary boundaries 2. Create growth within resource limits	A target associated with each of the planetary boundaries. These targets should be scaled down to local and country scales where possible and practicable. Each has the target to remain below the planetary boundary as defined by the Stockholm Resilience Centre. 1.1 Biosphere Integrity 1.2 Climate Change 1.3 Novel Entities 1.4 Stratospheric Ozone Depletion 1.5 Atmospheric Aerosol Loading 1.6 Ocean Acidification 1.7 Biogeochemical Flows 1.8 Freshwater Use 1.9 Land System Change 2.1 Hold corporations to account through international organisations 2.2 Preserve remaining natural resource stocks to prevent resource depletion.	Similar to the existing Sendai Framework, a post-2030 Sendai Framework would work alongside the post-2030 development goals to protect development gains and reduce the impact of disasters. A post-2030 Sendai Framework for Disaster Risk Reduction should incorporate Global Catastrophic Risk recognition and mitigation measures. The formulation of the post-2030 Sendai Framework should be developed from post-2030 development goals to ensure alignment of priorities.
Physical assets	3. Provide access to basic services for all	3.1 Increase in access to: clean water and sanitation, (3.2) electricity, (3.3) internet, (3.4) transport, (3.5) shelter and housing, and (3.6) other basic services by 25, 50, 75 and 100% by 2035, 2040, 2045, and 2050 respectively	
Social	4. Eliminate poverty and hunger 5. Reduce inequality 6. Deliver good health and education for all	4.1 See reductions in global poverty and hunger of 25, 50, 75 and 100% by 2035, 2040, 2045, and 2050, respectively, 5.1 Develop Gender Equality 5.2 Reduce the wealth gap within, and between countries 6.1 Increase primary education attendance and access to basic healthcare by 25, 50, 75 and 100% by 2035, 2040, 2045, and 2050 respectively	
Collaboration	7. Build strong institutions and international partnerships	7.1 Develop strong governance in the UN to manage risks (GCR) 7.2 Develop the capabilities of existing international organisations to incentivize and hold countries and corporations to account with respect to goal progress/achievement, and ensure funding pathways for global development	

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downward spiral this creates if progress is not made would be part of the 5 yearly cycle of assessment.

Following the arguments of Sharpe (2023), who suggests risk assessment is more valuable for decision making than scientific prediction alone, the objective is to identify a plausible worst case impact of not achieving each development goal in each local and regional context, and to evaluate how likely that is to happen. This information will add considerable impetus such that maintaining progress towards the development goals will reduce the probability of the worst case to a tolerable level.

Across the categories proposed above for the post development goals there are many thresholds we want to avoid crossing such as the human body's tolerance of heat stress, the sea level height at which coastal settlements need to be re-located, or the level of crop failure which leads to death from famine. Assessing the probability of these kind of thresholds occurring could be a useful metric to understand the scale of risks involved with each goal and the outcomes that each jurisdiction wants to avoid.

Pathways to successful implementation need also be considered, such as how post-2030 priorities, and progress towards achievement, are honoured at local, national, and international levels, which will enable for progress to be achieved for the most vulnerable populations. Ideally this would be through international organisations such as the World Trade Organisations and the European Central Bank, with incentives for success and sanctions for a lack of progress. Whilst responsibility for the development and overall monitoring of the post-2030 development goals should be with the United Nations, the aforementioned international organisations should be mobilised to hold individual nations and corporations to account through economic sanctions.

Equally, pathways to implementation will require improvements in international funding for sustainable development need to be addressed. Should a reformulation of the goals emerge along the lines proposed here, a clear plan is also needed on how to finance them post-2030. The 2022 Sustainable Development Goal Report highlights this on-going need suggesting the IMF, in particular, should work with developing countries to design SDG-based public investment strategies and the means to finance them. Practical, and possible, ways of achieving this include increasing domestic tax revenues, increased funding from developed countries beyond foreign aid commitments, increasing borrowing from multilateral development banks, sovereign borrowing on international capital markets, increasing development aid and philanthropic giving, and accepting debt restructuring for heavily indebted countries (United Nations, 2022a).

In developing these proposed post 2030 international development goals it is recognized that many different viewpoints, and possible futures, exist. The post-2030 trends identified aimed to encompass these viewpoints and futures, however, the future will be impacted by many other known and unknown aspects such as artificial intelligence and humanity's return to the moon and beyond (Cernev et al., 2024; Richards et al., 2023). The future is uncertain and can be envisaged through different lenses. It is acknowledged that different approaches that, for example, may provide a more economic, management or other emphasis could also be considered (Belmonte-Ureña et al., 2021; Bannerman, 2020; Moyer and Bohl, 2019; Pla-Julián and Guevara, 2019; Tsalis et al., 2020). Whichever perspective might be taken, it is important to start the detailed discussion of these issues now in preparation for what comes next, post 2030, when even greater radical and urgent action is likely to be needed.

3 Conclusion

Building on the lessons of the MDGs and SDGs, this perspective has proposed a possible structure for post-2030 development goals, recognizing possible future conditions under which new goals will have to be implemented. The intention has been to contribute to, and stimulate the debate over what will be needed to replace the current SDGs after 2030.

In September 2021 the UN Secretary-General released 'Our Common Agenda' report that looks ahead to the next 25 years and represents the Secretary-General's vision on the future of global cooperation (United Nations, 2021). It calls for inclusive, networked and effective multilateralism to improve responses to humanity's most pressing challenges and is an agenda of action designed to accelerate the implementation of existing agreements, including the SDGs. The biggest test, however, will be what is put in place for the medium to long term that builds on these existing agreements and accelerates the much-needed action to ensure both the planet's and humanity's health into the future.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

TC: Writing – original draft, Writing – review & editing. RF: Writing – original draft, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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