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Views or opinions expressed herein do not necessarily represent those of Earth4All partner organisations or other organisations supporting the work.



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Executive summary

About Earth4All SDGs work

The *SDGs for All: Africa* report has been written by Earth4All, a vibrant collective of leading economic thinkers, scientists, and advocates, convened by The Club of Rome, the BI Norwegian Business School, the Potsdam Institute for Climate Impact Research, and the Stockholm Resilience Centre.

This report applies the Earth4All system dynamics regional model for Africa to explore progress towards the Sustainable Development Goals (SDGs) in Africa between present day and 2100. The regional model was developed from the Earth4All global model (an extract of which is shown in Figure 1), which itself resulted from 2.5 years of modelling in conjunction with economic stress testing with the Earth4All

Transformational Economics Commission (TEC). This work culminated in our 2022 book *Earth for All: A Survival Guide for Humanity*, which commemorated the 50th year anniversary of the 1972 Report to The Club of Rome - *The Limits to Growth*. Building on the legacy of *The Limits to Growth* and the planetary boundaries framework, the Earth4All model calculates different scenarios to illustrate how economic policies are likely to affect human wellbeing, societies and ecosystems in the short and long-term future. The principal messages of the 2022 book are that wellbeing for all can be achieved while respecting planetary boundaries, but only if five extraordinary turnarounds are implemented simultaneously in relation to poverty, inequality, empowerment, food and energy.

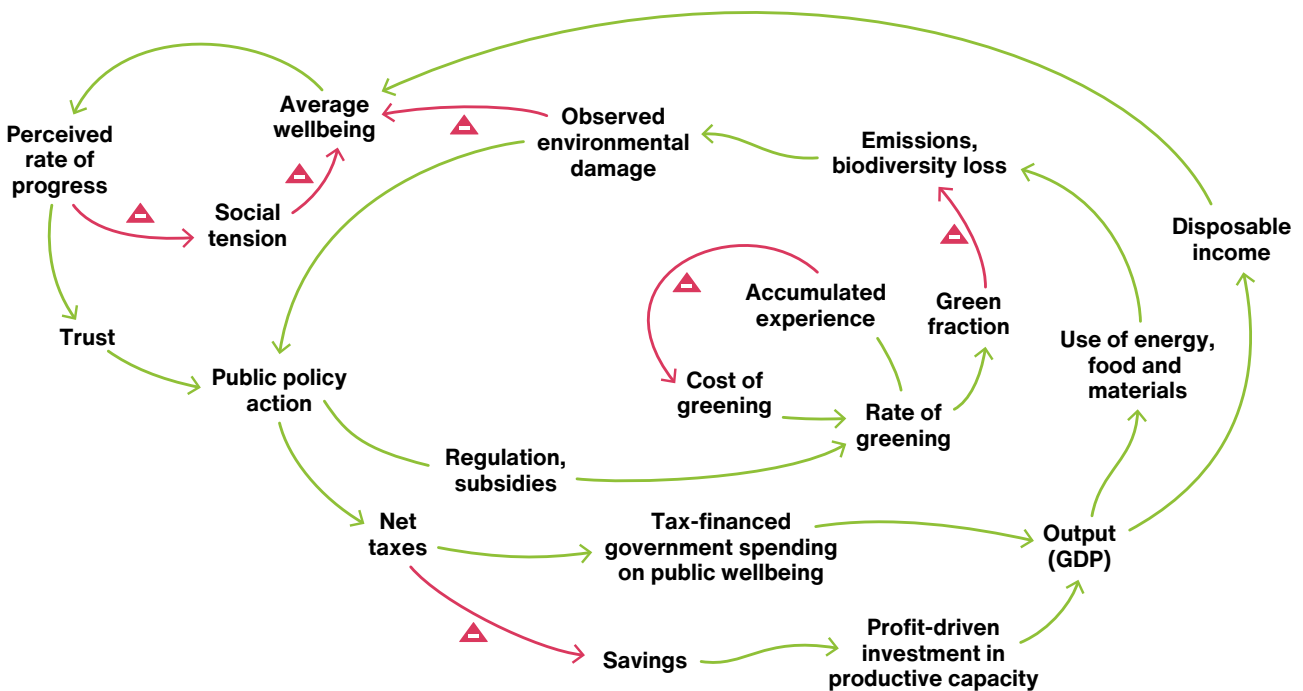


Figure 1 The Earth4All Model

Last year, Earth4All published its flagship report entitled *SDGs for All: Strategic Scenarios*. *Earth4All System Dynamics Modelling of SDG Progress*, which examined SDG progress on the basis of the five Earth4All turnarounds (Figure 2)- poverty, inequality, empowerment, food and energy, and the policy levers that are identified for each of the five turnarounds. We call these five turnarounds “extraordinary” because they break with the trends of the past in significant ways and hold the potential to enhance lives

and livelihoods, address the polycrisis and avoid ecosystem collapse.

In the 2023 report, we clustered the 17 SDGs around the five extraordinary turnarounds. The choice of which SDGs to include in the clusters is based on those combinations of SDGs that are particularly synergistic and which closely relate to the particular turnarounds. By clustering the SDGs in this way, we also explore dependencies and potential trade-offs between these goals.

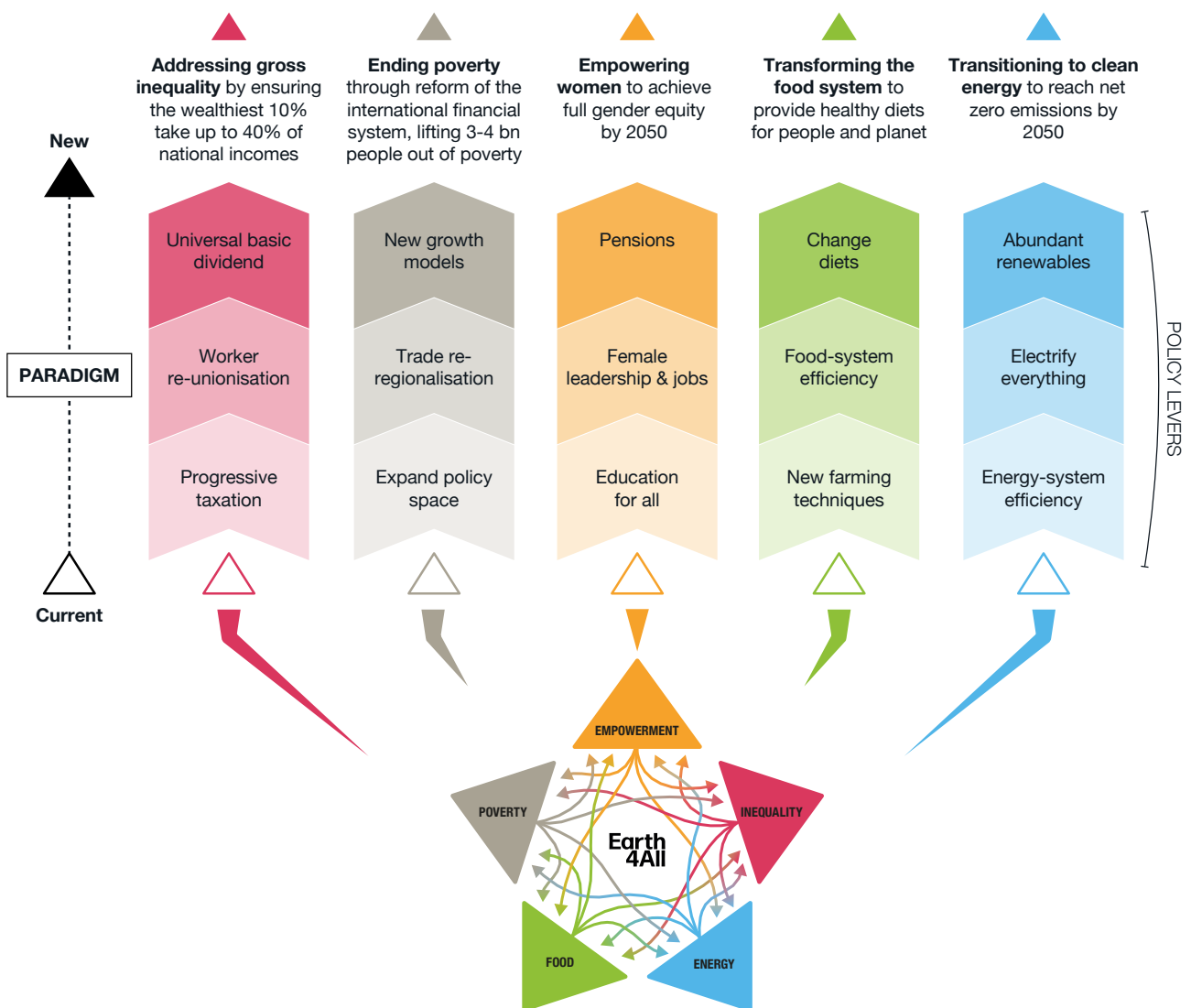


Figure 2 The five turnarounds and policy levers as detailed in *Earth for All*

In the *SDGs for All* report, SDG performance was examined in the context of two scenarios - Too Little Too Late and the Giant Leap. These scenarios enable us to illustrate how economic policies are likely to affect human wellbeing, societies and ecosystems in the short and long-term future.

The Too Little Too Late scenario explores the path of economic development and unsustainable consumption if societies continue on the same course as the last 40 years. Whereas, the Giant Leap scenario explores a path where societies make extraordinary decisions and investments today through Earth4All's five extraordinary turnarounds in relation to poverty, inequality, empowerment, food and energy. Collectively, these turnarounds enable a truly inclusive and pro-poor economy that prioritises the wellbeing of both people and the planet. One of the key insights from our global system dynamics modelling work is that the simultaneous activation of the Earth4All five extraordinary turnarounds is absolutely essential if we are to achieve wellbeing for all within planetary boundaries.

In September 2023, Earth4All was invited by the UN Futures Lab to present the findings of the *SDGs for All Report* to the UN Secretary-General. At this meeting, the Secretary-General requested Earth4All to apply our system dynamics modelling to understand Africa's potential pathways through the next century.

The *SDGs for All: Africa* report is also grounded in the two main scenarios in the Earth4All system dynamics model for Sub-Saharan Africa.

The **Too Little Too Late scenario** explores the path of economic development and unsustainable consumption if societies continue on the same course as the last 40 years. In this scenario, Africa is consigned to a lost century of development. Food, water and energy crises reach unthinkable levels, rendering much of the continent uninhabitable. The overall SDG score for the Too Little Too Late Scenario is 3 out of 17.

The **Giant Leap** scenario explores a path where societies make extraordinary decisions and investments today through Earth4All's five extraordinary turnarounds, which create a truly inclusive and pro-poor economy that prioritises the wellbeing of both people and the planet. In the Giant Leap scenario, many of the SDGs are attained. The overall SDG score for the Giant Leap is 11.5 out of 17.

The same five turnarounds have been used, albeit with some modifications to the policy levers comprised for each turnaround (see Figure 3).

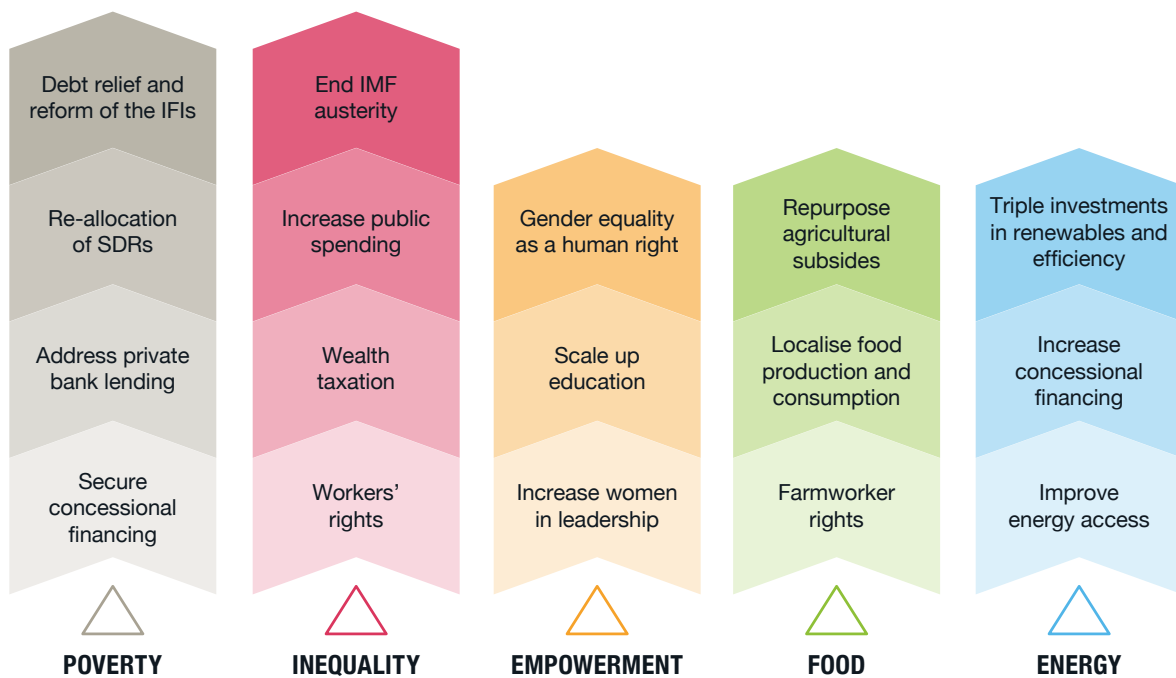


Figure 3 Africa specific turnarounds and policy levers

Overview of the SDG modelling results for Sub-Saharan Africa

Our modelling shows that nothing less than these five turnarounds will enable Africa to eliminate poverty, build a more resilient civilisation, and generate a new economy that delivers wellbeing to all people and the planet. At the same time, the modelling results for Africa reveal stark differences between the Giant

Leap and Too Little Too Late scenarios. In the Giant Leap scenario, almost all of the SDGs are met, securing a sustainable future for all within planetary boundaries. By contrast, the Too Little Too Late scenario will consign the continent to a lost century of development.

The results of the SDGs modelling for Africa speak for themselves.

- **Poverty** levels (i.e. below US\$6.85/day) drop from current levels of 500 million people in Africa down to 25 million people by 2100 in the Giant Leap. In Too Little Too Late, poverty levels continue to increase throughout the century, growing to upwards of 900 million people.
- **Hunger** is close to being eradicated with less than 7 million people undernourished by 2100 in the Giant Leap, as opposed to 180 million undernourished in Too Little Too Late.
- **Education** steadily improves under the Giant Leap scenario, reaching an average of 13 years of schooling by the end of the century. Under the Too Little Too Late scenario, average schooling stays at around 8 years.
- **For wellbeing**, our Earth4All Wellbeing Index shows that the Giant Leap could increase both life expectancy and wellbeing rapidly. Under the Too Little Too Late scenario, wellbeing languishes below current levels throughout the century.
- **Access to water** is achieved for almost everyone by the 2070s under the Giant Leap scenario. Meanwhile, the Too Little Too Late scenario leaves the vast majority of people without access to safe water. This could mean well over a billion people, a figure that is likely to grow as the century progresses.
- **Electricity** access is another big win in the Giant Leap. Currently 600 million people lack access to clean electricity. The Giant Leap could provide 98% of the population with access to increasingly sustainable electricity by 2050. By that same date, close to 75% continue to lack access to electricity under the Too Little Too Late scenario, and would not increase renewable capacity.
- **Carbon emissions** reach acceptable levels by 2040 under the Giant Leap scenario, while the Too Little Too Late scenario's increasing carbon emissions will contribute to pushing the global temperature beyond 1.5°C.
- **Decent work and economic growth** also improves with workers' disposable income, and GDP per person increasing enormously under the Giant Leap scenario. By 2060, workers will have US\$8000 in disposable income annually, while under the Too Little Too Late scenario, they would have less than US\$2,000.
- **The drop in unemployment** is equally significant where by 2100, only around 50 million people remain unemployed in the Giant Leap, as opposed to the 150 million in Too Little Too Late.
- **Public spending** increases steadily to upwards of US\$10,000 per person annually by 2100 in the Giant Leap, while Too Little Too Late levels remain virtually unchanged.
- **Prosperity** as reflected by GDP per person could increase to around US\$15,000 by 2050 in the Giant Leap, over twice as much as in the Too Little Too Late scenario which would only reach US\$6,000 by then. By the end of the century, the Giant Leap could lead to over US\$40,000 in GDP per capita.
- **Inequality** will also be dramatically reduced in the Giant Leap as reflected by labour's share of GDP potentially reaching 60% by 2040. By 2100 labour share will be almost 70%, making the SSA region more equal than any country in the world today.

Our modelling shows that all these interlinked challenges grow more complex and daunting with every failed multilateral moment. If we are to avoid a lost century of economic development for Africa, we cannot continue to fail in tackling these problems systemically. The modelling shows that on the continent, solving inequality and poverty is essential to achieve environmental goals, let alone to avoid economic collapse and the breakdown of peace and security. And importantly, the modelling shows that even with the highly ambitious Giant Leap scenario, most of the SDGs are only achieved by 2100, with only some seeing notable progress by 2050

The modelling also affirms the urgency of shifting away from today's extractive economy dominated by GDP growth to wellbeing economies that place a value on people, planet and prosperity. This means pivoting away from growth at all costs to a new growth paradigm, which embraces an economic development fostering prosperity for the many – not just the few – within the planetary boundaries.

If implemented simultaneously, the five extraordinary turnarounds can enable Africa to shift away from a catastrophic future, elevating its potential as a source of innovation and solutions, which reduce poverty, generate jobs, feed and energise urban and rural populations and create new market opportunities for investment, all within planetary boundaries.

“A giant leap is what is really needed to eradicate poverty in the African continent by the close of the century. It is achievable!”

—
Jane Mariara, Executive-Director, Partnership for Economic Policy

Chapter 1 - Methodology

Figure 4 presents an overview of the five extraordinary turnarounds under the Giant Leap scenario, along with the SDGs and their respective indicators that we have modelled under each turnaround. We have also identified the policy interventions that are essential for each of the five turnarounds. Many of these policy interventions have been adapted from the original policy interventions that are contained in our 2022 book *Earth for All: A Survival Guide for Humanity* and from our 2023 *SDGs for All: Strategic Scenarios. Earth4All System Dynamics Modelling of SDG Progress*. All of the policy interventions have been adapted to the African context. We have reviewed over 150 authoritative African publications and stress-tested both the modelling results and the policy interventions with African experts.

The importance of Earth4All system dynamics modelling

Earth4All uses models to show how different policies are likely to affect human wellbeing, societies and ecosystems in the short and long-term. Our modelling looks at the quantitative and causal interactions between environmental variables and socio-economic variables, such as investments, energy use, taxes, savings, education, inequality and social trust.

The goal of the Earth4All system dynamic based model is to study the dynamics of human wellbeing on finite planet Earth this century. As detailed in the book *Earth for All: A Survival Guide for Humanity* computer models cannot predict the future. The model can only show the consequences of the assumptions that are built into the model.

We use the global Earth4All model to depict the main global trends in the Giant Leap and Too Little Too Late scenarios, providing insights into how five turnarounds tackling inequality, poverty, empowerment, food and energy can work together to enhance wellbeing within planetary boundaries, on a very aggregate level. The global model is open source.

The regional Earth4All model is less aggregated thereby allowing us to capture regional specificities and understand how the two

scenarios unfold in different regional contexts. The regional model assesses long-term bio-socio-economic system dynamics for 10 world regions: the US, China, Africa - South of Sahara, Middle East and North Africa - East Europe and Central Asia, South Asia, Southeast Asia, the Pacific Rim, Europe and Latin America.

For each region, the model was calibrated against historical data from 1980 to 2020. The regional model also has a more granular population structure (20 5-yr cohorts versus 4 20-yr cohorts) and more detailed causal structure for land use, labour and social trust and tension than the global model. It is important to highlight that the data from the models are not set predictions for the future but plausible scenarios based on current science and data available today. This uncertainty applies to all macro models that calculate, assess, or estimate climate change, demographics, economics or anything else into the distant future.

Translating the Giant Leap and Too Little Too Late scenarios to the national level is done in collaboration with the Millennium Institute by applying their iSDG model.

It is important to highlight the difference between system dynamics modelling and strategic foresight analysis. The former is used to understand the dynamic behaviour of complex systems through scenarios whereas the latter involves tools to reflect on long-term strategies.

There are several important benefits to system dynamics modelling:

- Broader system perspective.
- Ability to capture complex interactions and reinforcing/balancing feedback mechanisms.
- Capability to include both planetary boundaries and softer variables such as societal trust and tension.
- Higher level of aggregation.
- Captures shifts in system structure over extended time horizons.
- Enables easier exploration of different policy interventions and future scenarios.

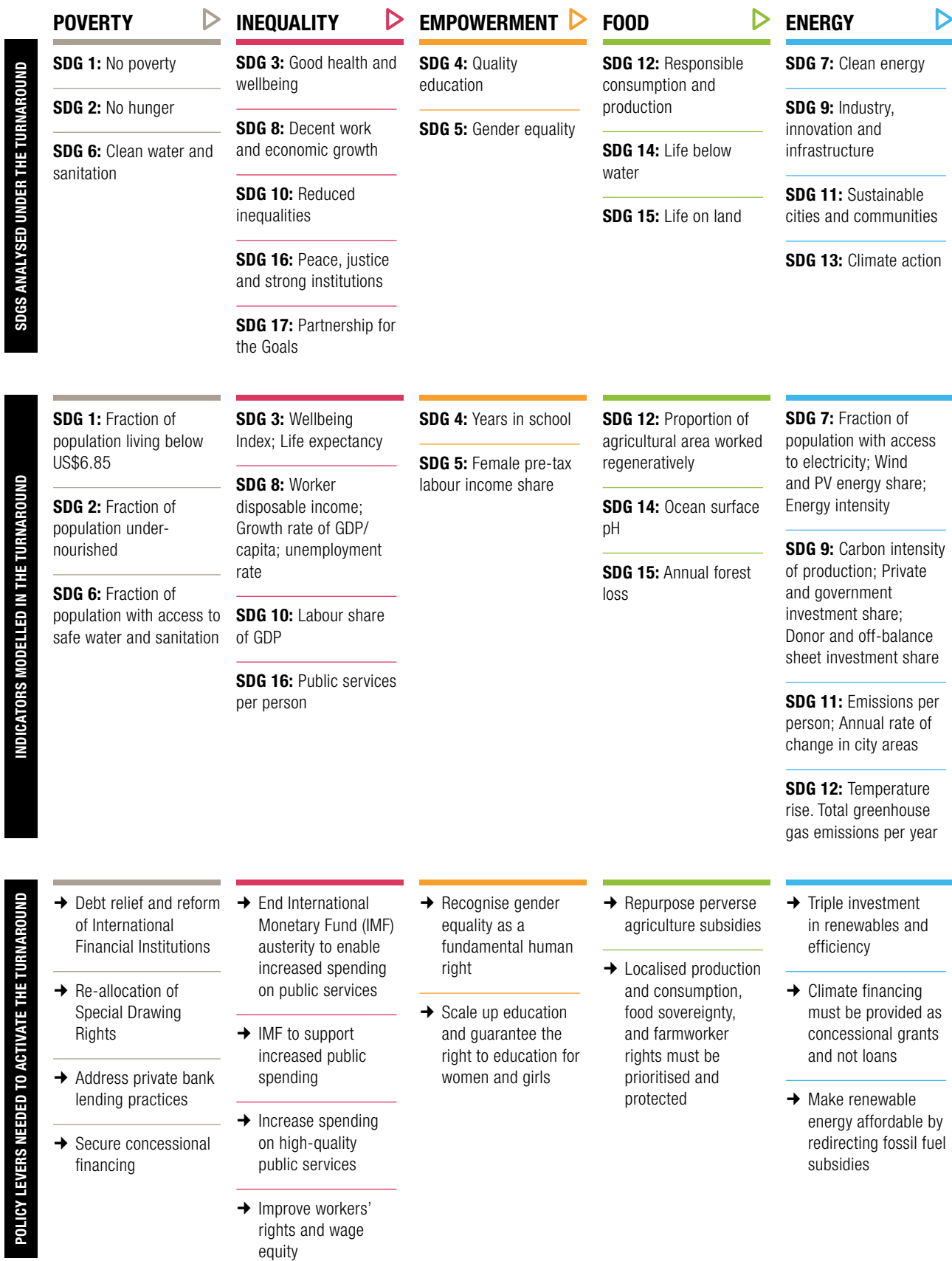


Figure 4 - Overview of how the SDGs are clustered per turnaround

The geographical focus on Sub-Saharan Africa

This report focuses on Sub-Saharan Africa (SSA), which according to the UN Development Programme's classification, includes 46 out of Africa's 55 countries. In this report, we do not include the North African countries of Algeria, Egypt, Libya, Djibouti, Morocco, and Tunisia, since they are represented in our regional model for the Middle East and North Africa (MENA) region. We also focus on SSA since it contains the vast majority of Africa's population, with 1.2 billion out of the total 1.4 billion for the entire continent and because the majority of the countries in SSA face many similar socio-economic, environmental and political challenges and attain similar levels of SDG achievement.

The Too Little Too Late and Giant Leap scenarios in the Earth4All regional model

Using system dynamics modelling, we have outlined two possible scenarios for Africa. Our model, like any other model, does not make precise predictions of what will happen. Instead, it creates a number of internally consistent scenarios for the rest of this century. These scenarios allow us to test policies we have chosen to accelerate SDG progress. They are internally consistent answers to many 'What-if' questions we asked, and can be used for additional 'What-if' questions to expand the possible option space of what could be done.

The Too Little Too Late scenario is our control scenario which is predicated on maintaining the status quo in decision-making. Note, that this implies, for example, that in this scenario we do assume that energy efficiency improvements will continue at the historical rate of 1% per year. And it means that we do not assume a freezing of efforts at 2020 levels. And it assumes that none of the extraordinary policy levers are implemented. As a result, economic systems remain extractive and produce slow and insufficient responses to injustices and environmental issues, as they have done in the past. In this scenario, none of the SDGs are achieved by the end of the century. The lack of action in this scenario leads to vicious cycles

that not only prevent further development in the region, but will result in large parts of the continent becoming uninhabitable.

The Giant Leap scenario is based on the simultaneous activation to the fullest possible extent of all the policy levers that we outline for each of the five extraordinary turnarounds. Rather than asking what might be reasonably possible, this scenario asks: What would it take to set the region on a sustainable path towards achieving all SDGs by the end of the century? And then asks in a follow-up question, how can African countries be supported with actionable policy interventions. The modelling results suggest that the policies, in their breadth, intensity and simultaneity could shift Sub-Saharan Africa towards a truly inclusive and pro-poor economy that prioritises the wellbeing of both people and the planet. In the Giant Leap scenario, almost all of the SDGs are fully attained.

About the indicators used in the modelling

We carefully chose indicators that capture the SDG in question of the two scenarios in clear and unambiguous ways. Practically, one consideration was how easily any particular indicator could be derived from variables already in the Earth4All model or added without undue difficulty. A second consideration, was the availability and reliability of data.

We have chosen to use a maximum of three indicators per SDG. In most cases, we just use one indicator and hope that our choice resonates with the reader.

About the proposed policy levers for the five turnarounds

For each of the five turnarounds, we present a wide range of policy levers that have been run and tested through both the global and regional Earth4All models.

We started with the policy interventions drawn from the policy levers contained in the global model. We then tested the relevance and applicability of those policy levers to Africa by comparing them with the policy proposals contained in the latest and most authoritative

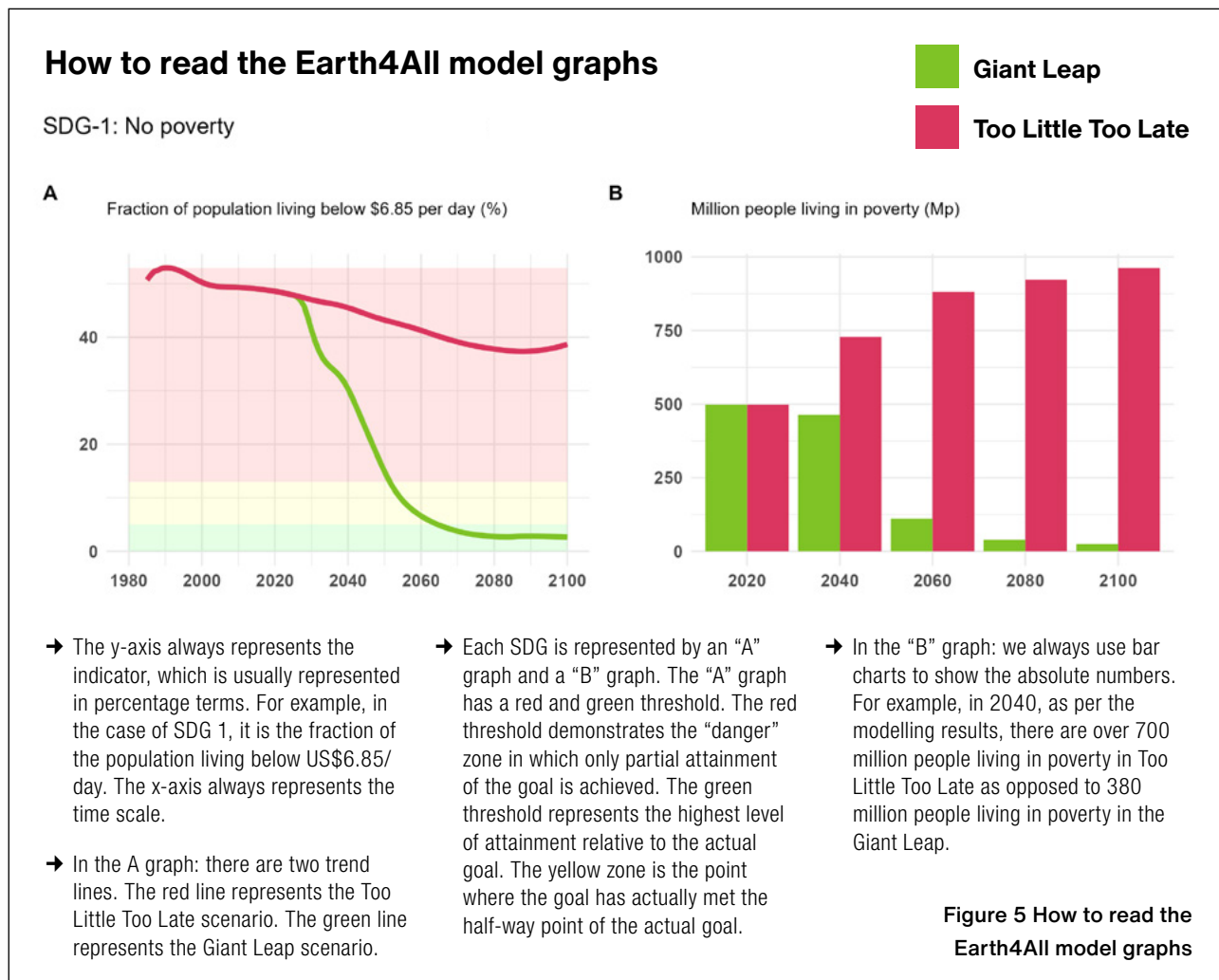
sources within the African region, including the African Union, UN Regional Commission for Africa, UNDP's Regional Office in Africa, and a wide range of African NGOs, SDG experts and thought leaders.

As a result, all of the report's resulting policy levers reflect the emerging perspectives from the region. They also represent the most ambitious proposals that will be needed to activate the Giant Leap for Africa. We further stress-tested these policy levers through our June consultations with African experts.

About the thresholds for each indicator

To help the reader grasp the importance of the indicator we have included colour coded

thresholds in each graph for the indicators that we have modelled. These lines visually represent how well each indicator is performing and how close it is to reaching its target. The green threshold signifies the highest level of achievement for the SDG, the red threshold represents the danger zone wherein only partial attainment may be possible. The yellow zone represents the achievement of the half-way point for the SDG in question. These thresholds are based on our review of the literature. In those cases where thresholds have already been proposed by authoritative sources, we used them. And where they did not exist, we developed our own thresholds that would be appropriate for the SDG in question.



Chapter 2 - Overview of the SDG modelling results for Sub-Saharan Africa

The importance of systems transformation

The UN Summit of the Future will be held in September 2024 and is a pivotal gathering uniting leaders from across the globe to redefine our path towards a brighter present and a more secure tomorrow. It is in essence the next “port of call” to leverage the global support that Africa needs to accelerate its SDG implementation efforts, especially in the aftermath of the SDG Summit of 2023.

The results of our system dynamics modelling confirm that several interrelated transformative actions could have the greatest possible impact for the continent, namely eradication of poverty, transformation of its food systems, acceleration of the just energy transition to ensure safe and clean access to affordable energy for all, quality education and empowerment of women, access to clean water and sanitation, and of course, significantly improved social protection to ensure that all Africans are definitely lifted from poverty, well before 2100 and hopefully more recently by 2050.

The importance of addressing poverty and inequality in parallel with planetary threats

To face the triple planetary threat (regarding climate change, nature loss and pollution), our modelling shows that without necessary action on poverty to free up fiscal space for public spending, much of the continent will be uninhabitable before the end of this century and will face continued shocks and stresses. Indeed, none of the so-called environmental SDGs (i.e. SDG 6- water and sanitation; SDG 8- industry and infrastructure; SDG 11 - cities and human settlements; SDG 12-

sustainable consumption and production; SDG 13 - climate change; SDG 14 - life below water; and SDG 15 - life above water) will be met without concerted action on inequality and poverty, thereby reinforcing one of our key conclusions that the speed of action on planetary boundaries is a direct function of the speed of action on inequality and poverty.

The above is particularly important when applying the Earth4All regional model to Sub-Saharan Africa, where one third of the population is faced with severe multidimensional poverty. Having done nothing to contribute to climate change, the SSA population is consigned to a grim future because they live in one of the world’s most climate change-vulnerable regions, where extreme weather events are hitting the most vulnerable the hardest, exacerbating food insecurity, population displacement and stress on water resources.¹ An equally important challenge is the growing inequality in the region whereby the richest 10% control over 50% of the SSA total income.² Increasing inequality is not only undermining efforts to reduce poverty, but it is exacerbating political instability and social tension. Hence the importance of addressing the challenges and policy priorities for inclusive/pro-poor growth in the African context.

The key obstacles to SDG implementation in Africa

Before we present the detailed summary of SDG progress, we outline the specific obstacles that are perpetuated by the unjust, unfair and inequitable international financial system, which if left unaddressed, will continue to block any chance for the region to accelerate SDG implementation,

¹ United Nations Climate Change. (2020, October 27). Climate Change Is an Increasing Threat to Africa. <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> UNFCCC.

² World Inequality Database. (2023, November 22). *What's new about inequality in sub-Saharan Africa in 2023?* <https://wid.world/news-article/2023-wid-update-sub-saharan-africa/>

not to mention achieve the Giant Leap. These are among the key obstacles that we address in the policy levers throughout the five turnaround analysis, and most especially in the poverty and inequality turnarounds:

- **Financing flows** - The UN estimates that the costs to achieve the SDGs by 2030 in Africa are US\$1.3 trillion per year. And with expected population growth, this figure could increase to US\$19 trillion.^{3,4} However, financing flows to the continent are nowhere near the amount that is needed. Dwindling financial flows are exacerbated by the debt burden, which has increased four times over the rate of economic growth, reaching a staggering US\$1.8 trillion in 2022.⁵
- **Debt burdens** - Not surprisingly, the debt relief imperative threads through every single one of the SDGs. This is especially important for public spending where African countries are facing debt servicing costs that are 3 times as much as education spending, 6 times health spending, 22 times social spending and 236 times more than climate adaptation spending.⁶ In many SSA countries, debt is held by private banks who continue to impose predatory lending practices and refuse to participate in the G20 Common Debt Treatment.
- **GDP per capita** - Africa's growth rates have been steadily decreasing from between 4.1% in 2021 to 3.6% in 2022. Our modelling

shows that in Too Little Too Late, GDP per capita growth rate will never rise above 2% for the rest of the century. Growth rates are insufficient to offset population increases, which will mean minimal gains in per capita GDP. What's worse, the unfair distribution of income (i.e. worker share versus owner share) remains unchanged. So this is another potential source of revenue that will not be realised in this century under the Too Little Too Late scenario.

- **Broken ODA promises** - Currently, the proportion of overseas development assistance going to Africa is at 25.6%.⁷ This is the lowest it has been in two decades.⁸ Dwindling ODA will continue to deprive the continent of much needed financial resources to make the Giant Leap and will only deepen the debt burden.
- **Broken climate finance promises** - From 2020 to 2030, the funding required for African countries' climate goals was estimated at approximately US\$2.8 trillion, a figure representing more than 93% of Africa's GDP.⁹ There is a stark contrast between what Africa actually needs (US\$2.8 trillion) and what it actually receives (US\$30 billion- representing a mere 3% of global climate finance). Worse still, over 72% of climate finance is being disbursed in the form of interest-bearing loans as opposed to concessional financing.^{10,11} The irony is that climate financing pledges are

³ U African Development Bank Group. (2023, June 7). *Private Sector Financing for Climate Action and Green Growth in Africa*. African Economic Outlook 2023 Report. https://www.afdb.org/sites/default/files/aeo_2023-chap2-en.pdf

⁴ Galma, K. (2022, November 15). *Here's how African leaders can close the climate finance gap*. World Economic Forum. <https://www.weforum.org/agenda/2022/11/heres-how-leaders-close-climate-finance-gap/>

⁵ Odhiambo, O., & Odera O. (2023, December 1). *Solidarity fund needed for Africa's sustainability transitions*. Africa Renewal. <https://www.un.org/africarenewal/magazine/october-2023/solidarity-fund-needed-africa%E2%80%99s-sustainability-transitions#:~:text=According%20to%20the%20Organisation%20for,proposed%20financial%20stimulus%2C%20per%20annum>

⁶ Harsch, E. (2018). *Combating Africa's Inequalities*. Africa Renewal. <https://www.un.org/africarenewal/magazine/december-2017-march-2018/combating-africa%E2%80%99s-inequalities#:~:text=Whatever%20a%20country's%20specific%20history,services%20and%20economic%20opportunities%2C%20promoting>

⁷ Harcourt, S. (2014, April 19). *Official development assistance*. ONE Data & Analysis. <https://data.one.org/topics/official-development-assistance/#:~:text=Aid%20to%20African%20countries%20totalled,%25%20to%20high%2Dincome%20countries>

⁸ See footnote 7.

⁹ Kone, T. (2023, June 20). *For Africa to meet its climate goals, finance is essential*. UNDP Climate Promise. <https://climatepromise.undp.org/news-and-stories/africa-meet-its-climate-goals-finance-essential>

¹⁰ Kimeu, C. (2023, September 7). *Climate adaptation finance to Africa must increase tenfold, research shows*. The Guardian. <https://www.theguardian.com/world/2023/sep/07/climate-adaptation-finance-to-africa-must-increase-tenfold-research-shows#:~:text=Africa%2C%20the%20region%20most%20impacted,3%25%20of%20global%20climate%20finance>

¹¹ Millar, P. (2023, December 12). *How lending-based climate finance is pushing poor countries deeper into debt*. France24. <https://www.france24.com/en/environment/20231212-how-lending-based-climate-finance-is-pushing-poor-countries-deeper-into-debt>

now translating into worsening debt burdens for African countries. Rising interest rates will greatly increase their debt servicing costs, which will further decimate already-stretched national budgets.¹²

When taking all of these macro factors into account, the model clearly shows that immediately freeing fiscal space is the most important starting point for Africa. But the first-mover responsibility lies with the international community: debt relief and reform of the international debt architecture; improvement in the allocation of Special Drawing Rights; reining in of predatory lending practices of private banks in Africa; and increases in concessional financing. With increased fiscal space, African governments will

be able to increase public spending to accelerate the implementation of all SDGs and tackle the worsening effects of climate change, which currently is driving down wellbeing and increasing social tension, all of which will just lead to more war and conflict in a region that is already suffering on so many fronts.

As explained in the Executive Summary, but presented here on an SDG by SDG basis, the modelling results speak for themselves. The quick snapshot below reveals the very stark difference between the implications of the Too Little Too Late and Giant Leap scenarios for Africa's SDG trajectory.

¹² See footnote 11.

Overview of the Too Little Too Late and Giant Leap scenarios for Africa's SDG trajectories

Figure 6 provides a high-level summary of the modelling results for both the Too Little Too Late and the Giant Leap scenarios for each of the SDGs. The modelling results are discussed in greater detail under the subsequent chapters for each of the five turnarounds.

SDG	RESULTS
1 NO POVERTY	Under the Giant Leap scenario, less than 13% of the population lives in poverty by 2050, and less than 5% in 2070. By 2100, under 25 million people live in poverty. Under the Too Little Too Late scenario, the absolute number of people living in poverty increases steadily throughout the century, reaching over 800 million by 2060.
2 NO HUNGER	Under the Giant Leap scenario, less than 7% of the population is undernourished by 2050, and less than 3% by 2100. Over the century, the absolute number of undernourished people could be reduced by over 100 million. Under the Too Little Too Late scenario, the number of undernourished people increases throughout the century, growing to over 200 million people by 2040.
3 HEALTH AND WELLBEING	Under the Giant Leap scenario, by the 2060s, wellbeing enters the green zone representing around double current levels. Under the Too Little Too Late scenario, wellbeing decreases slowly. This is our own measure which was created through the modelling of an extensive index that combines living conditions, environmental damage, and social trust.
4 QUALITY EDUCATION	Under the Giant Leap scenario, average years of schooling increases steadily, finally passing the red threshold of 13 years by 2100. Under the Too Little Too Late scenario, the average years of schooling barely increases at all.
5 GENDER EQUALITY	Under the Giant Leap scenario, female labour income improves steadily, but never reaches the red threshold of 40% of pre-tax labour income. However, the gap between the two scenarios widens significantly since there is hardly any improvement under the Too Little Too Late scenario.
6 ACCESS TO WATER AND SANITATION	Under the Giant Leap scenario, the red zone is left by the 2050s. Close to 100% of the population will have access to safe water and sanitation by 2080. In Too Little Too Late, this SDG is never fully implemented since by 2100, only around 30% of the population have access to safe water and sanitation.
7 ENERGY	Under the Giant Leap scenario, the region leapfrogs to the clean energy pathway, enabling access to sustainable electricity to 98% of people by 2050. Under the Too Little Too Late scenario, access to electricity never reaches the red threshold, leaving over 400 million people without access for the entire century. Worse still, this increase in electrification is predicated on a continued reliance on fossil fuels due to underinvestment in renewables.
8 DECENT WORK AND ECONOMIC GROWTH	Under the Giant Leap scenario, worker disposable income and per capita GDP growth rates increase significantly, while unemployment stays relatively stable at 6%. Under the Too Little Too Late scenario, worker disposable income and the unemployment rate remain virtually unchanged, while GDP growth rates per person are reduced to near 0% per year.

SDG	RESULTS
9 INDUSTRY, INNOVATION, AND INFRA-STRUCTURE	Under the Giant Leap scenario, the tripling of investment into renewables causes carbon intensity to fall to near 0 kg of CO ₂ per dollar (unit of GDP) by 2050. Under the Too Little Too Late scenario, carbon intensity stays at 0.2 kgCO ₂ /\$, because of insufficient investment and rapidly ageing infrastructure.
10 REDUCED INEQUALITY	Under the Giant Leap scenario, GDP per person could increase to well over US\$15,000. Equally important will be the evenly distributed gains with labour's share of GDP potentially reaching 60% by 2040, bringing the region in line with the current G20 average. ¹³ Under the Too Little Too Late, the labour share of GDP remains roughly the same.
11 SUSTAINABLE CITIES AND COMMUNITIES	Under the Giant Leap scenario, emissions per person decrease into the green zone by 2040 and stabilise at 0.2 tonnes of CO ₂ per person each year. Combined with a reduction in city growth, this will result in smaller, cleaner cities. In the Too Little Too Late, by 2100, emissions reach 3 tonnes per person each year as cities continue to grow at unsustainable rates.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Under the Giant Leap scenario, fertiliser use reduces significantly, reaching the green threshold of 5kg per hectare annually. Combined with a dramatic increase in the use of regenerative practices to offset this decrease in artificial nitrogen use, soil quality will be preserved while keeping agricultural yields high. Under the Too Little Too Late scenario, the absence of such regenerative practices leads to increased fertiliser use and soil degradation.
13 CLIMATE ACTION	Under the Giant Leap scenario, acceptable levels of carbon emissions are reached by 2040 and sustained within the green zone for the rest of the century. By 2060, emissions fall to only 0.2 gigatons of CO ₂ per year. Under the Too Little Too Late scenario, emissions rise to around 2.5 gigatons per year. This is not as severe as other regions, but still contributes to temperature increases to around 1.5C by 2050.
14 LIFE BELOW WATER	Under the Giant Leap scenario, ocean acidification is reversed, reaching the green threshold by 2070 (pH of 8.15) and enabling acidity levels to remain within planetary boundaries. Under the Too Little Too Late scenario, ocean acidity levels reach the dangerous red threshold by 2070 (pH of 8.1), pushing acidity levels outside of planetary boundaries.
15 LIFE ON LAND	Under the Giant Leap scenario, forest loss is mitigated by lower demographic pressures, responsible investment and regenerative agriculture. Under the Too Little Too Late scenario, historical trends of deforestation continue, leading to over 1% of forest cover being lost each year. This trend worsens to a 2% annual loss by 2100.
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Under the Giant Leap scenario, public spending levels increase steadily over the century, but never reaches the green threshold. By the 2090s, the red threshold of US\$8000 in public services per person is crossed, and continues to rise reaching just over US\$10,000 by 2100. Under the Too Little Too Late scenario, government spending remains stagnant at a minimal level.
17 PARTNERSHIPS	Using our own Social Tension Index, we see that under the Giant Leap scenario, trust in institutions reaches the green threshold in the latter half of the century. This results in large part because of the dramatic increase in government revenue as a proportion of GDP. Under the Too Little Too Late scenario, social trust increases less, remaining under the green threshold throughout the century, and government revenue stays stagnant.

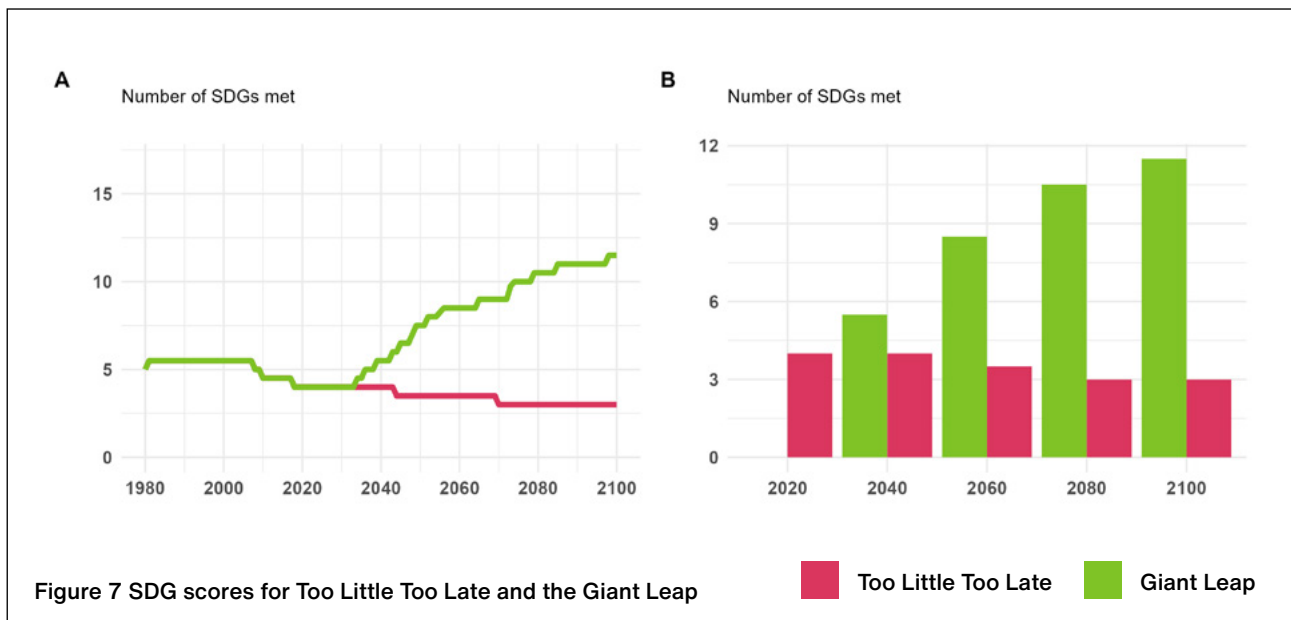
Figure 6 Too Little Too Late and Giant Leap scenarios for each of the SDGs

The overall SDG score for Sub-Saharan Africa

In order to understand the Sub-Saharan African region's overall SDG progress, we calculate the number of SDGs every year, using our bespoke "SDG Score". We grade the SDG achievement in a simple way. An achieved goal is assigned 1 point when the indicator for the SDG reaches the green zone (see description of the green, red and yellow zones on page 10). A goal that has passed the half-way target is assigned 0.5 points when the indicator reaches the yellow zone. When a goal has not been achieved and remains in the red zone, it is assigned a score of 0 points.

The number of 17 SDGs achieved is the sum of achievement scores for all 17 SDGs. The SDG score thus goes from 0 (total failure) to 17 (full success).¹⁴ In the graph below, the vertical axis is 0-17 but is cut off at 12 automatically by the model Vensim software, because there is no data above 12. The title of the vertical axis is Dmnl = "Dimensionless", which is a Vensim term for "index", or 'just a number without any unit such as "kg", "kWh", or "people'.

The total SDG score for Africa is 2 out of 17 for the Too Little Too Late scenario is 11.5 out of 17 for the Giant Leap scenario



¹³ International Labour Organization & Organisation for Economic Co-operation and Development. (2015, February). The Labour Share in G20 Economies. <https://www.oecd.org/g20/topics/employment-and-social-policy/the-labour-share-in-g20-economies.pdf>

¹⁴ Randers et al (2019), "Achieving the 17 Sustainable Development Goals within 9 planetary boundaries" Global Sustainability, Volume 2, 2019, e24. DOI: <https://doi.org/10.1017/sus.2019.22>

Earth4All's National Engagement in Kenya: An African Earth4All national case study

The Kenya national engagement strategy further applied system dynamic modelling and tailor made policy recommendations within a national context. The Kenyan national case study is one of several that will be rolled out across different continents so as to offer more granularity in problem solving and solutions development under the Giant Leap scenario.

Earth4All's national engagement in Kenya is led by the Partnership for Economic Policy (PEP) in collaboration with the Kenya Institute for Public Policy Research and Analysis (KIPPRA), Millenium Institute and the Club of Rome. The engagement commenced in August 2023, and was formally launched at the African Climate Week Summit in Nairobi in September 2023. Background work was presented at the UNGA Science Summit in New York in September 2023. An expert and stakeholder roundtable to discuss a draft report was held in Nairobi in March 2024. The [final report](#) was launched on 27 June 2024 at the 7th annual regional conference of the Kenya Institute for Public Policy Research and Analysis (KIPPRA) with its thematic focus on "The Future of Industrialization in Kenya: Pathways to Industrialization in the Bottom up Economic Transformation Agenda" in Kisumu, Kenya. The Kenya report has included diverse stakeholders including government agencies (local and national), private sector, NGOs, civil society, academia, media and community organisations and marginalised groups.

Some of the key messages emerging from the report include the following:

- If Kenya pursues the Giant Leap scenario, there will be complete eradication of poverty in the country by 2050. However, with the Too Late Too Little scenario, about 10% of the population will still be living below the poverty line.
- Under the Giant Leap scenario, inequality would decline significantly from the current Gini index of 0.380 to about 0.150 in 2050, compared to a decline to only about 0.370 in the Too Little Too Late scenario, signalling persistent inequalities by 2050.
- Under the Giant Leap scenario, there will be a significant increase in the female share in managerial positions from the current levels of about 25% to about 45% by 2050. In the Too Little Too Late Scenario, there is a gradual increase in this share to about 35% by 2050.
- The value of total agricultural production will increase under the Giant Leap scenario from current levels of about KES. 1.8 trillion to about KES. 3 trillion by 2050, thus boosting food security in the country. Under the Too Little Too Late scenario, the total value of agricultural production will remain almost unchanged by 2050.
- The total electricity generation will increase considerably from the current levels of about 0.3 Twh to about 225 Twh by 2050 under the Giant Leap scenario. Under the Too Late Too Little scenario, there is an increase to only about 70 Twh.

Chapter 3 – Poverty

Section 1 - Overview of the Earth4All modelling results for the poverty turnaround

Introduction

The poverty chapter examines progress with regard to three SDGs that are particularly relevant for this turnaround i.e. SDG 1 - No poverty, SDG 2 - zero hunger and SDG 6 - safe water access and safe sanitation access.

We cluster these three SDGs in the poverty turnaround because access to basic income, nutrition and safe water and sanitation are the fundamental building blocks for poverty eradication. This is especially the case in Sub-Saharan Africa where the increase in extreme poverty is inextricably linked – not just to income deprivation, but equally to food and water insecurity crises, which are pervasive throughout the region.¹⁵ The other four turnaround chapters in this report address the additional elements of multidimensional poverty, notably health; income and wealth inequality; gender inequality; social tension; food and energy insecurity.

The system dynamics modelling results reveal stark differences between the Too Little Too Late and the Giant Leap scenarios for the poverty turnaround in Africa.

In the Too Little Too Late scenario, neither SDG 1, 2 nor SDG 6 are implemented by the end of this century. Whilst poverty levels do decrease, they never leave the dangerous red zone. And with each decade, we see increasingly enormous differences with the Giant Leap scenario. For example, by 2080, over 600 million people live in poverty under the Too Little Too Late scenario. This level is over 30 times greater than Giant Leap.

With SDG 2, Africa manages to decrease the number of malnourished people between now and 2100. Africa only manages to leave the dangerous red zone by the late 2090s. And as with SDG 1, Africa never reaches the green threshold, meaning that it never fulfils SDG 2

in this century with 180 million people still undernourished by 2100. With regard to SDG 6, Africa only manages to increase the percentage of its population with access to water to a level of 43% by 2100. This is compared to 20% in 2020 and 35% in 2070. Again this SDG is never fully implemented by the end of the century.

In the Giant Leap scenario, these three SDGs either reach full implementation or close to it by 2100. The striking result is that Africa reduces the number of people living in poverty from 500 million today to 10 million by 2100. The decrease in poverty levels is truly extraordinary in large part because governments are liberated from crushing debt burdens and are equipped with the financial resources and natural resources to meet basic human needs equitably and also to reduce vulnerability to global shocks.

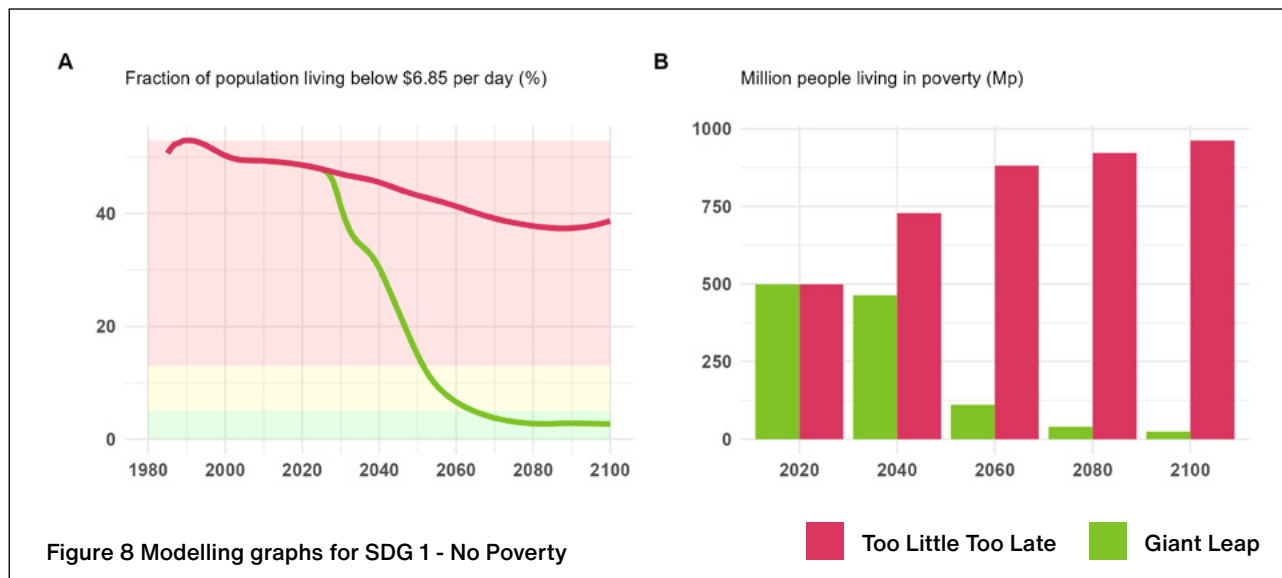
With regard to SDG 2, by 2100 in both scenarios the proportion of people living without enough food decreases. However, it is only the Giant Leap scenario that manages to save over 150 million people from malnourishment between now and 2100. By that time, only 7 million people remain undernourished. This is because governments are once again liberated from their debt burdens and can redirect those resources to ensuring food security and the transition to regenerative agriculture.

With regard to SDG 6, the Giant Leap leaves the dangerous red zone by 2050. And by 2060, over 90% have access to safe water and sanitation. This figure will increase to almost 100% by 2080. This is truly significant for the SSA region, which currently is the least water-secure region and where growing lack of access to clean and safe drinking water is one of the greatest causes of poverty in the region.

¹⁵ The Water Project. (n.d.) *The water crisis: Poverty and water scarcity in Africa*. <https://thewaterproject.org/why-water/poverty>

Overview of the system dynamics modelling results for SDGs 1, 2 and 6

SDG 1 - No Poverty



Scenario results for SDG 1 - No Poverty

TOO LITTLE TOO LATE

- In 2020, 500 million people lived on less than US\$6.85 a day.¹⁶
- The proportion of people living in poverty only slightly decreases, but SDG 1 never gets close to being achieved.
- Each decade, the absolute number of people living in extreme poverty increases.
- By 2100, over 950 million people will live in extreme poverty.

GIANT LEAP

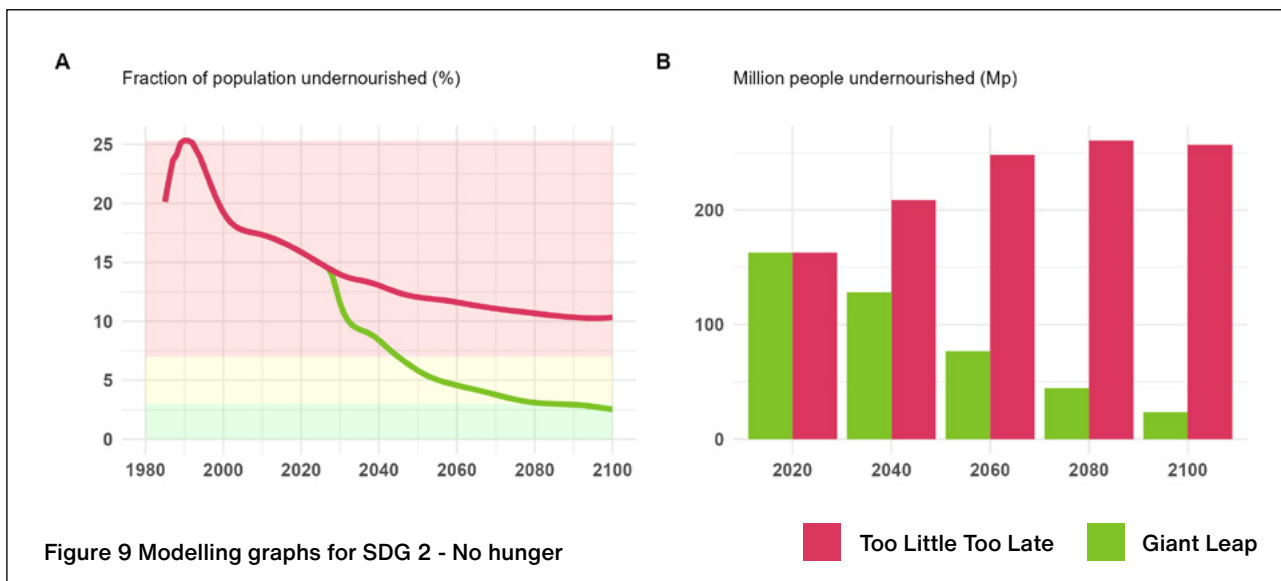
- By 2050, the Giant Leap leaves the red threshold, meaning less than 13% of the population live in extreme poverty.
- By 2070 we enter the green threshold whereby 5% of the population still live in poverty.
- By 2100, only around 25 million people still live in extreme poverty.

Implications of SDG 1 implementation challenges for the region

- By 2050, 1 in 20 people will be living in Africa. Rising population will translate into less income per person, hence more poverty.
- The implications of Too Little Too Late will be catastrophic for SSA. Many African governments are already spending more on debt servicing than in the provision of public goods.
- Without measures to free up fiscal space, public spending will continue to decrease at a scale and pace, which will consign future generations to an unbreakable poverty cycle.
- Insufficient measures to reduce SSA's vulnerability to global shocks, geopolitical tensions, increased regional conflicts and political instability will continue to disrupt trade and investment. This will increase inflation and generate more poverty for the region.
- The path forward must start with the reform of the international financial system to support African governments with the resources they need to implement pro-poor and inclusive economic policies that create viable safety nets for all.

¹⁶ We use this poverty threshold for SSA even though the majority of countries in that region are classified as low-income. The reason is that the higher threshold of \$6.85 captures a much larger share of the population living in poverty, especially since several countries in SSA are classified as middle-income. As with global poverty figures, many more people live in poverty at the higher poverty lines than at the extreme poverty line, and the reality is that the \$6.85 per day threshold does not enable individuals and households to access basic human needs such as water, energy, food, health and education.

SDG 2 - No hunger



Scenario results for SDG 2 - No Hunger

TOO LITTLE TOO LATE

- The proportion of the population that are undernourished decreases only minimally.
- The red zone is never left, meaning the SDG will not be achieved.
- **By 2100:** over 10% of the population, i.e. 250 million people are undernourished.

GIANT LEAP

- **By 2050**, the red zone is left and **by 2090**, the green zone is entered.
- **By 2050**, the absolute number of undernourished people decreases to less than 100 million and to less than 25 million by 2100.

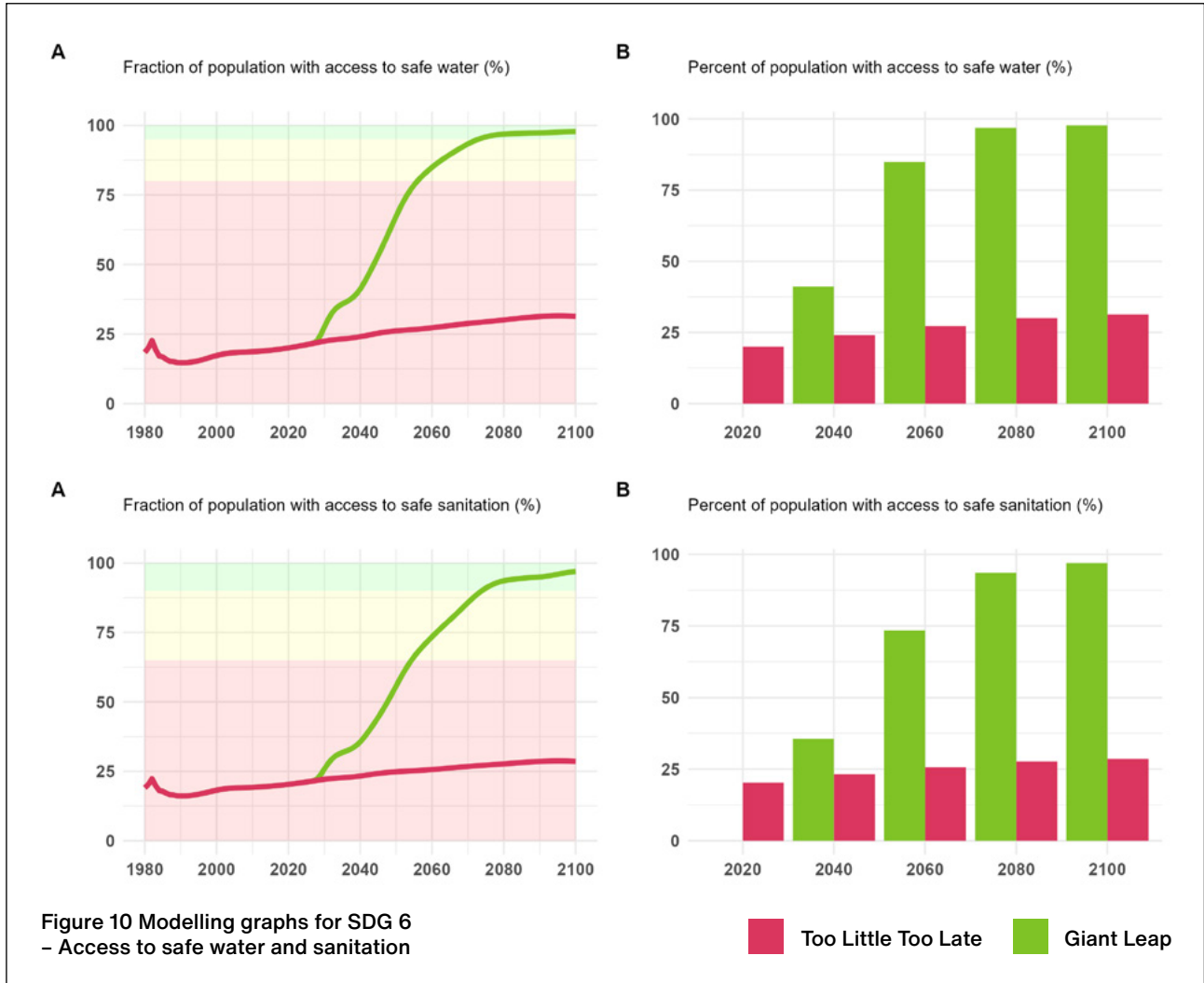
Implications of SDG 2 implementation challenges for the region

- Inadequate food supply and rising prices will continue to foment insecurity throughout the region, especially in areas of forced displacements.¹⁷
- Throughout SSA, the rise in food prices correlates directly with social tension and political instability.¹⁸
- At the same time, war and conflict compound existing drivers of food scarcity in Africa.
- The path forward is equally grounded in the reform of the international financial system to increase fiscal space for governments to ensure greater food security. This will enable governments to take steps to target inequality, gender imbalances and environmental degradation and commit to food sovereignty.

¹⁷ PSC Report. (2022, December 5). *Worsening hunger crisis could threaten Africa's stability*. ISS Africa. <https://issafrica.org/pscreport/psc-insights/worsening-hunger-crisis-could-threaten-africas-stability>

¹⁸ See footnote 17.

SDG 6 - Access to safe water and sanitation



Scenario results for SDG 6 - Access to safe water and sanitation

TOO LITTLE TOO LATE

- In 2020, only 20% of Sub-Saharan Africans had access to safe water and sanitation.
- This proportion slightly increases, but only by around 10%.

GIANT LEAP

- By 2060, the dangerous red zone will be left, meaning around 80% of people will have access to safe water and sanitation.
- By 2080, the green thresholds for both safe water and sanitation are reached, meaning almost 100% of the population has access to these public goods.

Implications of SDG 6 implementation challenges for the region

- SSA is the least water-secure region and the increasing lack of access to clean and safe drinking water is one of the greatest causes of poverty in SSA. It is impossible to reach any of the SDGs without water security.
- Lack of access generates water related diseases for almost half of the African population. The burden of collecting water in water insecure regions has a massive toll, with women and girls suffering most.
- Water insecurity is also a key driver in conflict-climate risk. Equally, lack of access undermines efforts to shift towards regenerative agriculture.
- The path forward must ensure that the international community frees up sufficient fiscal space to enable governments to improve water and sanitation infrastructure, step up desalination efforts, improve water reuse and enhance resilience to droughts and other climate impacts.

Section 2 - The policy interventions needed for the poverty turnaround

In addition to the modelling results presented for the SDGs under the poverty turnaround, we also examine several of the essential policy levers that are directed to the international community to support the achievement of the poverty turnaround in Sub-Saharan Africa. To significantly reduce the number of Africans living in poverty, we need simultaneous and highly ambitious policy interventions on several international fronts: debt relief and reform of the international debt architecture; improvement in the allocation of Special Drawing Rights; reining in of predatory lending practices of private banks in Africa; and increases in concessional financing. With increased fiscal space, African governments will be able to increase public spending that will directly accelerate the implementation of all SDGs.

The key policy interventions are elaborated with detailed proposals drawn from the most authoritative sources within the African region, including the African Union, UN Regional Commission for Africa, UNDP's Regional Office in Africa, and a wide range of African NGOs, SDG experts and thought leaders. All of these

policy levers have been run and tested through the Earth4All regional model for Africa and will be further stress-tested through our consultative process with African SDG experts.

Ensure debt relief for Africa

In 2024, US\$69 billion in African debt payments will come due – more than all the aid Africa received in 2021.¹⁹ Many African governments are spending significant proportions of their national revenue on loan servicing, for example, Nigeria alone will spend 59% of government revenue servicing debts.²⁰ In the case of Ghana, 70% of grant revenues are going to debt services. Overall, it is estimated that African countries will spend approximately US\$74 billion on debt servicing in 2024.²¹ Currently, close to 57% of the African population (751 million people) live in countries that spend more on interest payments than in key social sectors such as health and education.²² To avoid the immense costs of debt default, African governments are being forced to default on their obligations to future generations.²³

¹⁹ Smith, G.E. (2023, April 12). *Millions Will Fall Into Extreme Poverty If The U.S. And China Can't Come Together On The African Debt Crisis*. Forbes. <https://www.forbes.com/sites/gaylesmith/2023/04/12/millions-will-fall-into-extreme-poverty-if-the-us-and-china-cant-come-together-on-the-african-debt-crisis/?sh=62972717684d>

²⁰ See footnote 19.

²¹ ONE Data & Analysis. (2023, December 13). *African debt*. <https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdata.one.org%2Ftop-ics%2Fafrican-debt%2F&data=05%7C01%7Cdemissiem%40un.org%7C77ac5cd0152b4438e13608db7c685fa2%7C0f9e35db544f4f60bdcc5ea416e6dc70%7C0%7C0%7C638240559939735724%7CUnknown%7CTWFPbGZsb3d8eyJWljoimC4wLjAwMDAILCJQljoiv2luMzliLCJBtIi6k1haWwiLCJXVCi-6Mn0%3D%7C3000%7C%7C%7C&sdata=EXq%2FibM5VNBxEHifnjzJBHZZCcFw%2FQNVz819qzZNbw4%3D&reserved=0>

²² UN Trade and Development. (n.d.). *Regional Stories: Africa*. <https://unctad.org/publication/world-of-debt/regional-stories#:~:text=Africa's%20most%20vulnerable%20have%20paid,critical%20concern%20during%20recent%20crises>

²³ Ahmed, M. (2023, June 21). *Defaulting on Africa's future*. Project Syndicate. <https://www.project-syndicate.org/commentary/human-costs-of-african-countries-efforts-to-avoid-debt-default-by-masood-ahmed-1-2023-06?barrier=accesspaylog>

Recommended policy levers include:

- Ground reform in a new global financial ecosystem that adopts a comprehensive debt sustainability framework and credit-rating assessment. The ecosystem would bring together all creditors, both official and private, in sovereign debt restructuring, promote responsible borrowing and lending practices, prevent over-indebtedness, and ensure that debt is managed sustainably.²⁴
- Include reform of the G20 Common Framework for Debt Treatment to ensure that all countries faced with unsustainable debt are eligible to apply and that all relevant creditor countries, including non-Paris Club countries, such as China and private lenders with large outstanding claims must contribute constructively to the necessary debt treatments as requested.²⁵
- Address the practices of the big three credit rating agencies (S&P, Moody's, Fitch) whose biased credit ratings for African countries result in overestimated risk in African countries,²⁶ which in turn, leads to increased borrowing premiums for African countries.²⁷
- Compel the IMF to immediately cease imposing austerity policies, cutting public spending, rather than raising revenue through progressive tax reform.²⁸

→ With freed up fiscal space, governments will need to ensure: greater transparency in how national budgets are formulated; greater independence of their central banks; commitments to declaring assets of key public officials and to publishing audits; improved access to information to ensure that governments are held accountable. It will be equally important to create other incentives to fight corruption such as anti-corruption agencies and independent judiciaries.

Ensure re-allocation of Special Drawing Rights

Because of the outdated quota system which governs SDR allocation and which disproportionately favours developed countries,²⁹ African countries received roughly US\$33 billion, or just 5% of the total SDRs allocated by the IMF in August 2021.³⁰ By comparison, the U.S. received US\$113 billion, or 17% of the total allocation.³¹

In April 2021, the G20 (led by France, the UK, and Canada) pledged to reallocate US\$100 billion of SDRs to vulnerable countries, especially in Africa and Latin America.³² It was agreed that to reach this figure, it was essential that all high-income countries pay 20% of their new SDR allocations to Africa.³³ However, to date, France, the UK, and Canada have only transferred US\$14 billion to Africa. Japan has only reached a 10% reallocation rate.³⁴ This is in stark contrast to the original

²⁴ Otieno, E. (2023, July 18). *Breaking the Cycle of Debt: Addressing the Reasons behind High Indebtedness in Africa and Recommendations for Sustainable Solutions*. African Forum and Network on Debt and Development <https://afrodad.org/breaking-the-cycle-of-debt-addressing-the-reasons-behind-high-indebtedness-in-africa-and-recommendations-for-sustainable-solutions/>

²⁵ G7 Research Group. (2024, June 14). *Apulia G7 Leaders' Communiqué*. <http://www.g7.utoronto.ca/finance/220520-communicue.html>

²⁶ Financial Times. (2024, February 5). *Little Surprise African Governments Reject Credit Rating Agencies*. <https://www.ft.com/content/f973cc4b-2764-4ec8-b0e6-a255d2edb4d9>

²⁷ Assa, J. & Gevorkyan, A.V. (2023, April). *Reducing the Cost of Finance for Africa: The Role of Sovereign Credit Ratings*. UNDP, Regional Bureau for Africa. <https://www.undp.org/sites/g/files/zskgke326/files/2023-04/Full%20report%20-%20Reducing%20Cost%20Finance%20Africa%20Report%20-%20April%202023.pdf>

²⁸ *A recent ODI study documented how significant increases in tax and aid will be needed to ensure that all countries can afford the necessary investments in healthcare, education and social protection in order to end extreme poverty by 2030.*

²⁹ See footnote 24.

³⁰ De Boissieu, C. (2023, March 13) *Africa and SDRs*. Policy Center for the New South. <https://www.policycenter.ma/publications/africa-and-sdrs>

³¹ African Development Bank Group. (n.d.). *FAQS: What are Special Drawing Rights and why do they matter for Africa?* https://www.afdb.org/sites/default/files/documents/sdrs_faq_en.pdf

³² See footnote 31.

³³ See footnote 30.

³⁴ See footnote 30.

³⁴ El-Sheikh, S. (May 22, 2023). *African Ministers call for reforms of the IMF's Special Drawing Rights system*. United Nations Economic Commission for Africa. <https://www.uneca.org/stories/african-ministers-call-for-reforms-of-the-imf%E2%80%99s-special-drawing-rights-system>

expected African endowment which stood at US\$60 billion in February 2022. The IMF estimated in 2021 that US\$425 billion was needed for African countries to meet the main challenges they face.

Recommended policy levers include:

- Accelerate the implementation of SDR reallocation mechanisms aligned with the needs of African economies and to develop more appropriate allocation criteria,³⁵ such as climate shocks, terms-of-trade shocks, or interest-rate shocks, rather than quotas that disproportionately benefit rich countries.³⁶
- Channel SDRs to the African Development Bank, which currently has a AAA credit rating, enabling it to leverage additional funds by as much as 4 times and thereby provide much-needed liquidity to African countries.³⁷
- Ensure that partial redeployment of SDRs to African countries must in no way justify donor countries in reducing their official development assistance (ODA) to African countries.³⁸

Address predatory lending practices of private banks

Half of the 22 African countries with the highest debt owe more than 30% to private lenders. Many of the highest African debtor countries are paying private lenders upwards of upwards of 10% as compared with World Bank loans which carry much lower interest rates to around 1% interest on total external debt payments, double the interest rates paid to Chinese lenders.³⁹ Moreover, private lenders refused to take part in the G20's debt

suspension scheme during the pandemic and continued to engage in highly predatory lending practices, resulting in obscene levels of profit.²⁰ Even the G7 has acknowledged the need for debt restructuring efforts by all relevant creditors, including non-Paris Club countries such as China and private creditors.

Recommended policy levers include:

- Private lenders should be encouraged to extend immediate debt suspension to the most indebted African countries to ensure the reduction of debts to a level that allows the fundamental rights and basic needs to be met for all countries that apply for loans.
- Private lenders should be encouraged to take part in the G20's Common Framework.⁴⁰
- Call on the UK and the US in particular, to compel private lenders to ease loan repayments from low-income African countries because most international private debt contracts are made under the law of these two countries.⁴¹

Secure concessional climate financing

The world's 20 most vulnerable countries received a total of USD 1.7 billion in climate finance in 2021, representing a mere 6.5% of what those countries need to address climate change each year.⁴²

The situation in SSA is even more acute. From 2020 to 2030, the estimated funding required for African countries' climate goals is approximately US\$2.8 trillion, more than 93% of Africa's GDP.⁴³ Currently, annual climate finance flows to Africa are only US\$30 billion, which represents a mere

³⁶ Ghosh, J. (2024, January 29). *Can the IMF and the World Bank really be changed?* Social Europe. <https://www.socialeurope.eu/can-the-imf-and-the-world-bank-really-be-changed>

³⁷ See footnote 30.

³⁸ See footnote 30.

³⁹ Benson, E.A. (2022, July 11). *New report discredits popular narrative, reveals how African countries are three times more indebted to western firms than to Chinese lenders.* Business Insider Africa. <https://africa.businessinsider.com/local/markets/african-countries-are-three-times-more-indebted-to-western-firms-than-to-chinese/9g4ly6f#:~:text=A%20new%20report%20by%20Debt,they%20do%20to%20Chinese%20lenders.&text=The%20report%20also%20revealed%20that,compared%20to%20their%20Chinese%20counterparts>

⁴⁰ *During the pandemic, the G20 put in place the Debt Service Suspension Initiative (DSSI) I to temporarily pause official debt payments to the poorest countries, followed by the Common Framework to help these countries restructure their debt and deal with insolvency and protracted liquidity problems.*

⁴¹ See footnote 39.

⁴² Kraus, J. (2024, January 11). *Five maddening facts about climate finance.* African Arguments. [https://africanarguments.org/2024/01/five-maddening-facts-about-climate-finance/#:~:text=More%20than%20half%20\(58%25\),close%20to%2C%20market%20rates\)](https://africanarguments.org/2024/01/five-maddening-facts-about-climate-finance/#:~:text=More%20than%20half%20(58%25),close%20to%2C%20market%20rates))

⁴³ See footnote 9.

3% of global climate finance.⁴⁴ In addition, Africa will require about US\$1.3 trillion annually to meet its sustainable development needs by 2030.^{45,46}

Recommended policy levers include:

- Increase climate adaptation finance to Africa tenfold by 2035.⁴⁷
- Scrutinise governments' spending claims because many donor governments have overestimated their spending claiming to have mobilised US\$83.3 billion in 2020 when the actual value was at most US\$24.5 billion.
- Cap the amount of climate finance that can take the form of loans, which currently represents more than half of all climate finance.
- Ensure that private investment is being channelled to SSA countries who need it most. Currently, the actual distribution of climate finance is directed primarily to Asian and middle-income countries as opposed to the least developed countries in Sub-Saharan Africa, despite their significantly greater vulnerability to climate change.¹⁰
- Compel private and public donors to stop funding carbon-intensive activities – As a special Reuters report has recently revealed, despite the pledge of US\$100 billion per year to fight climate change, there is absolutely no system in place to follow the money and track the money and its impact.¹¹
- Support the SDG Stimulus proposed by the UN Secretary-General for rapid scaling up of affordable long-term financing by at least US\$500 billion a year.

⁴⁴ See footnote 10.

⁴⁵ See footnote 3.

⁴⁶ See footnote 4.

⁴⁷ See footnote 10.

Chapter 4 – Inequality

Section 1 - Overview of the Earth4All modelling results for the inequality turnaround

Introduction

The inequality turnaround examines progress with regard to the four SDGs that are particularly relevant for the inequality turnaround i.e. SDG 3 - Good health and wellbeing; SDG 8 - Decent work and economic growth; SDG 10 - Reduced inequalities; SDG 16 - Peace, justice and strong institutions.

We cluster these SDGs in the inequality turnaround because inequality in SSA reflects not just income and wealth disparities but also reduced wellbeing, lack of access to basic services and economic opportunities, minimal public spending per person, as well as weak labour rights.⁴⁸

The stark reality of inequality in SSA is captured by the fact that the richest 1% own half of the continent's total financial wealth. The seven richest African billionaires are now wealthier than the poorest 50% of Africans combined.⁴⁹

Whilst the factors that have exacerbated inequality differ from country to country, there are overarching factors relevant throughout the continent, such as: the impact of IMF austerity conditions on public spending; highly regressive tax systems; and of course the impact of the debt burden on public spending.

Debt has constrained the ability of African governments to increase their public spending to close the inequality gap. In many cases, their actual debt servicing costs are “three times as much as education spending, six times health spending, 22 times social spending and 236 times more than climate adaptation spending”.⁵⁰ All these factors are combining to dramatically worsen inequality crises and undermine stability throughout the region.

When it comes to our modelling results, as with the poverty turnaround, we see stark differences between the Too Little Too Late and Giant Leap scenarios for the inequality turnaround.

In the Too Little Too Late scenario, none of the SDGs related to the inequality turnaround (i.e. SDGs 3, 10 and 16) are met by 2100. For SDG 3, overall wellbeing only marginally increases but never leaves the dangerous red zone. For SDG 10, GDP per capita and distribution of income remain in the dangerous red zone with GDP per person capped at only US\$12,000 per year. For SDG 16, government spending on public services only reaches US\$1,200 per person per year in 2100. This is only US\$1000 higher than it is now, and is well below the dangerous red threshold.

By contrast in the Giant Leap, by 2100 wellbeing is achieved with people living longer and enjoying higher standards of wellbeing overall, with twice the level of wellbeing. Additionally, GDP per person could increase to over US\$60,000 i.e. 5 times higher than the US\$12,000 in the Too Little Too Late scenario. By 2100, labour share of income will be almost 70%, making the SSA region more equal than any country in the world today.

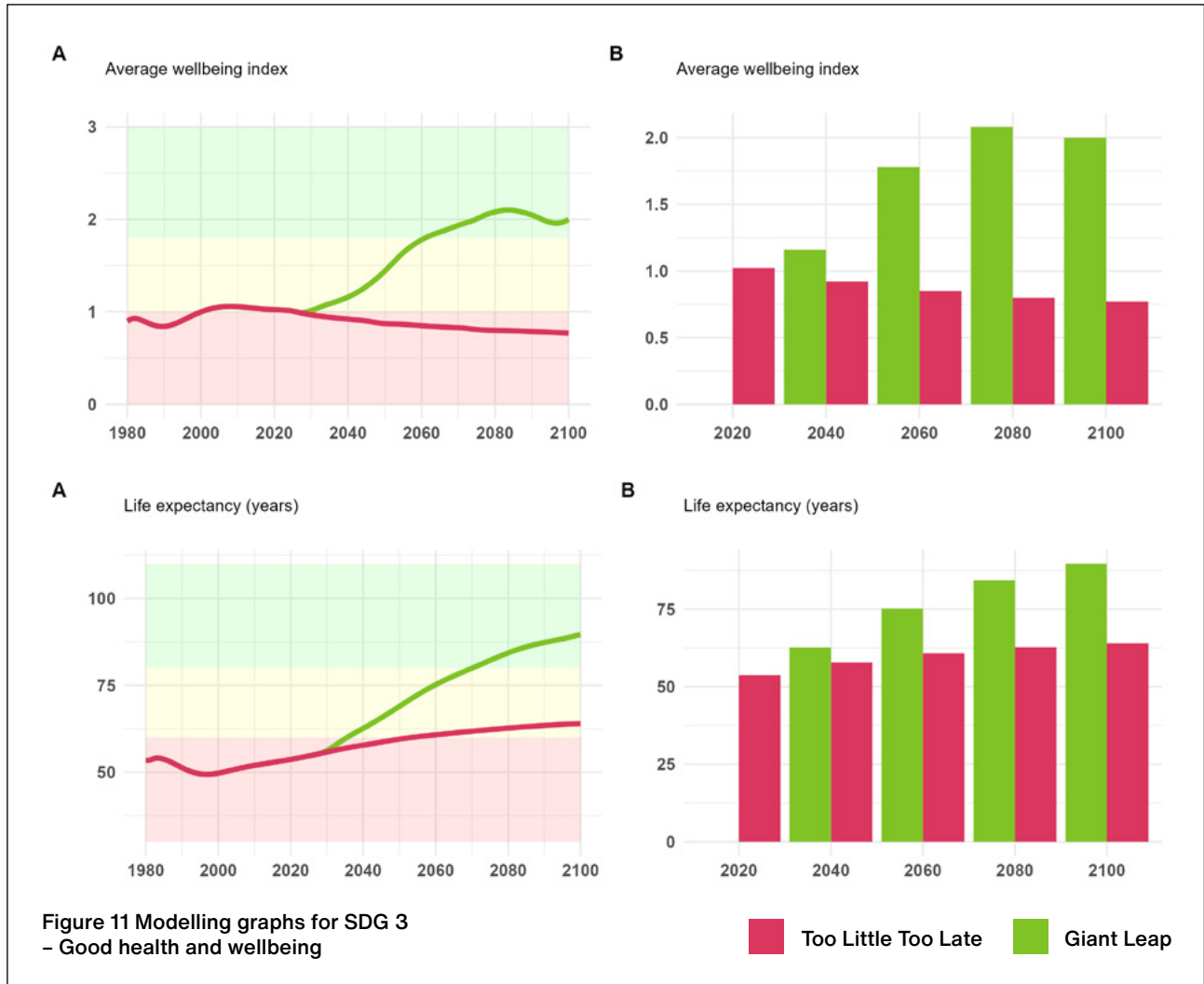
⁴⁸ United Nations Sustainable Development. (2023, September 11). *Reduce inequality within and among countries*. <https://www.un.org/sustainabledevelopment/inequality/>

⁴⁹ Oxfam. (2024, January 15). *Seven richest Africans have more wealth than the poorest half of the continent's population*. <https://africa.oxfam.org/latest/press-release/seven-richest-africans-have-more-wealth-poorest-half-continent-population>

⁵⁰ See footnote 6.

Overview of the system dynamics modelling results for SDGs 3, 8, 10, 16 and 17

SDG 3 Good health and wellbeing



Scenario Results for SDG 3 - Good health and wellbeing

TOO LITTLE TOO LATE

- Wellbeing steadily declines throughout the century, falling by 20% over the century.
- Life expectancy slowly improves, but will only reach 64 years **by 2100**.
- This is above the red threshold of 60 years, but well below the green threshold of 80 years.

GIANT LEAP

- There are significant increases in both life expectancy and wellbeing. People will lead significantly longer lives, with increased incomes, improved living standards and access to basic human needs.
- **By the 2050s:** wellbeing enters the green zone.
- **By 2100,** people will live on average more than 30 years longer, with twice the level of wellbeing.

Implications of SDG 3 implementation challenges for the region

- Currently, no region is as vulnerable as SSA to the interlinked threats of conflict, water scarcity, food and energy insecurity, population increase and extreme vulnerability to climate change shocks.⁵¹ 27 countries in the region are referred to as “hotspot countries” because they face a combination of catastrophic ecological threats and very low societal resilience.
- If wellbeing levels are not massively improved within the next decade, let alone by 2100, we will see worsening famine, energy poverty, regional conflict, patriarchal oppression, economic insecurity, crushing debt burdens and of course worsening climate change.
- The Giant Leap path forward for improving wellbeing starts with the transformation of the international financial system to enable African governments to protect the most vulnerable communities from the unfolding and ever-increasing risks and impacts of interlinked crises.
- This means: transitioning from an extractive economy to a wellbeing economy; building on the potential of Africa’s youth population; investing in the just energy transition; and ultimately ensuring transparency, accountability and participation in governance systems to tangibly improve all Africans’ lives.⁵² This in turn will enable the region to achieve its “Agenda 2063”, and renew a “vision of genuine people-centred development, framed in terms of African values and cultures, focused on meeting the needs of every African, and centred on social justice, feminist values, and meaningful progress”.⁵³

⁵¹ Gavin, J. (n.d.) *Ecological Risks and Resilience in sub-Saharan Africa*. Vision of Humanity. <https://www.visionofhumanity.org/ecological-risks-and-resilience-in-sub-saharan-africa/#:~:text=No%20region%20is%20as%20vulnerable,the%20impacts%20of%20climate%20change>

⁵² Hamladji, N. (2023, August 29). *Unleashing a new era of African Development: UNDP and Government Collaboration*. UNDP. <https://www.undp.org/africa/blog/unleashing-new-era-african-development-undp-and-government-collaboration>

⁵³ Sokona et al. (2023). *Just Transition: A Climate, Energy and Development Vision for Africa*. Independent Expert Group on Just Transition and Development. https://justtransitionafrica.org/wp-content/uploads/2023/05/Just-Transition-Africa-report-ENG_single-pages.pdf

SDG 8 - Decent work and economic growth



Scenario results for SDG 8 - Decent work and economic growth

TOO LITTLE TOO LATE

- For this SDG, we have three measures: Disposable income of workers, growth rate of GDP per capita, and the unemployment rate.
- Worker disposable income hardly rises **between now and 2100**. It stays within the dangerous red zone.
- **By 2100**: workers only have US\$1,000 more than they did in 2020.
- While unemployment rates stay at around 6% in both scenarios, the difference in the number of unemployed people is far higher in Too Little Too Late due to the much higher population forecast.
- **By 2060**, there will be over 125 million unemployed people, and **by 2100**, almost 150 million.
- Growth rate per GDP is significantly lower than in the Giant Leap throughout the century. In fact, growth slows every decade, and **by 2100** comes to a complete standstill.

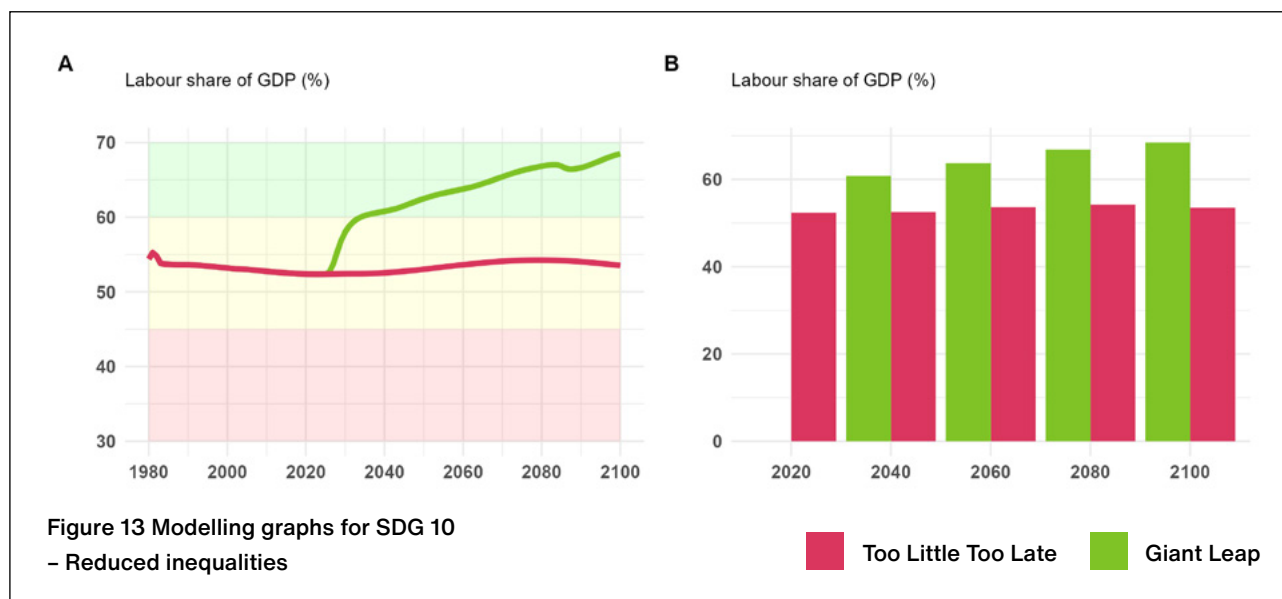
GIANT LEAP

- Worker disposable income dramatically increases over the century, passing the red threshold of US\$15,000 per year **by 2080**.
- **By 2100**, workers are expected to have nearly US\$20,000 per year in disposable income, but it never reaches the green threshold of US\$25,000 per person per year.
- Unemployment varies somewhat, but stays at an average of 6%. Due to the reduction in population over the century, this means that the number of unemployed people will steadily decline.
- GDP growth per capita is much higher than in Too Little Too Late. Strong early growth, reaching upwards of 5%, transitions into steady growth at around 2-3% per year in the latter half of the century.
- GDP per person could increase to around US\$15,000 **by 2050**, over twice as much as in the Too Little Too Late scenario which would only reach US\$6,000 by then. By the end of the century, the Giant Leap could lead to over US\$40,000 in GDP per capita.

Implications of SDG 8 implementation challenges for the region

- The poor already spend a large proportion of their monthly income on food and energy. In SSA, record levels of food price inflation, rising energy costs, and interest rate hikes have significantly eroded workers' disposable incomes.
- The combination of shrinking disposable incomes and surging cost-of-living pressures, combined with record levels of unemployment is already a key driver in conflict throughout the region.
- Too Little Too Late will multiply these crushing economic pressures to an unthinkable level of poverty and deprivation. This in turn, will compound despair and frustration, which will lead to more violence and insecurity in many rural areas.
- Climate change is and will continue to be one of the key risk multipliers and if the continent is consigned to the Too Little Too Late, we cannot exclude the possibility of major social and environmental tipping points being crossed in the region.
- The path forward involves a combination of measures to ensure inclusive growth. This includes: increase the progressivity of tax systems; adopt wealth taxation which could generate billions in new revenue; greater protection for workers, especially minimum wage legislation and rights to collective bargaining.

SDG 10 Reduced inequalities



Scenario results for SDG 10 - Reduced inequalities

TOO LITTLE TOO LATE

- For this SDG, we measure the labour share of GDP to show how to measure the reduction in inequalities.
- The poorest 90% of people will only capture around 50% of GDP.
- The unfair distribution of income remains virtually unchanged in this century.

GIANT LEAP

- The economic gains described in SDG 8 will be much more evenly distributed than they would be otherwise.
- **By 2040**, labour's share of GDP could reach the green threshold of 60%.
- **By 2100**: labour share will be only slightly under 70%, making the SSA region more equal than any country in the world today.

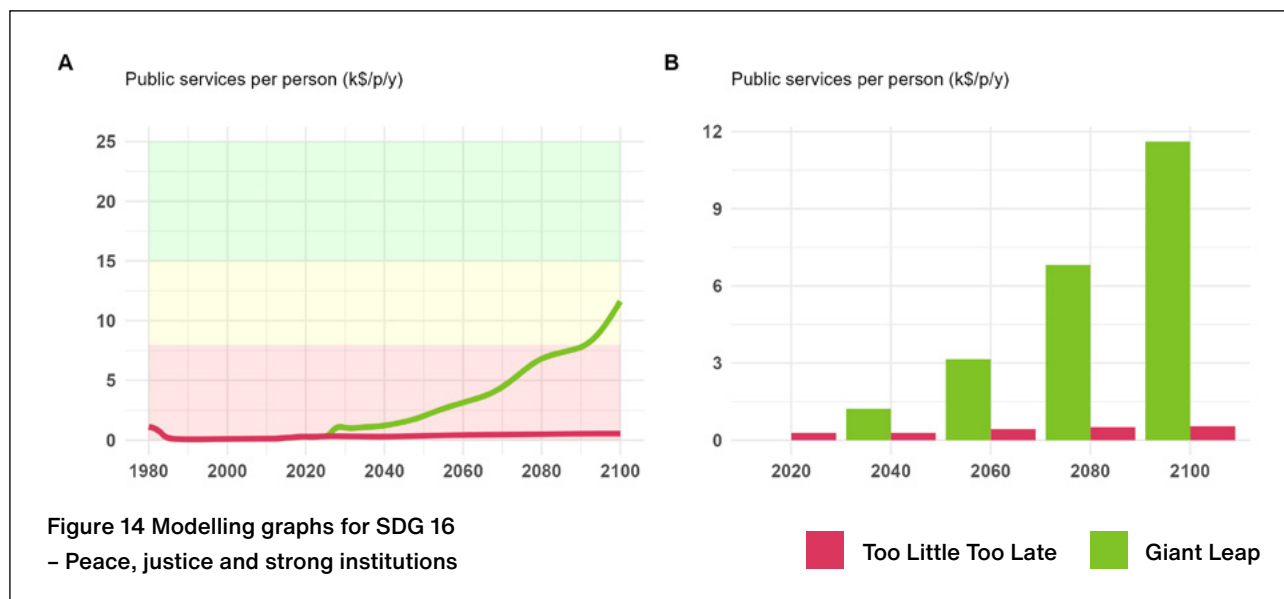
Implications of SDG 10 implementation challenges for the region

- Stagnating per capita GDP will mean several more lost development decades for Africa. Unfair distribution as reflected in worker share of GDP will drive even greater inequality in a continent where the top 1% currently own over 50% of the continent's wealth.
- Inequality will be exacerbated not just by deep-rooted income and wealth disparities but also by limited access to basic services and economic opportunities, as well as weak labour rights.
- The path forward must start with the end of IMF austerity conditions. Countries that "implemented austerity during and after the global pandemic saw their income inequality increase three times more than those that did not".⁵⁴ The IMF must stop insisting on balancing national budgets through public spending cuts, public wage freezes, increase in regressive taxation, undermining of labour rights and protections.⁵⁵

⁵⁴ Martin et al. (2021, October). The West Africa Inequality Crisis: Fighting austerity and the pandemic. Oxfam. <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621300/rr-west-africa-cri-austerity-pandemic-141021-en.pdf>

⁵⁵ Oxfam. (2022, April 19). IMF must abandon demands for austerity as cost-of-living crisis drives up hunger and poverty worldwide. <https://www.oxfam.org/en/press-releases/imf-must-abandon-demands-austerity-cost-living-crisis-drives-hunger-and-poverty>

SDG 16 Peace, justice and strong institutions



Scenario results for SDG 16 - Peace, justice and strong institutions

TOO LITTLE TOO LATE

- For indicators, we use public services per person as a proxy for strong institutions.
- There is virtually no improvement over this century.
- **By 2100:** government spending on public services only reaches US\$500 per person every year. This is only US\$200 higher than the level in 2020, and is well below the dangerous red threshold.

GIANT LEAP

- Public spending levels increase steadily over the century. However it never reaches the green threshold of US\$15,000.
- **By the 2090s,** the red threshold of US\$8000 in public services per person is crossed, and continues to rise reaching just over US\$10,000 by 2100.
- This is still a massively improved scenario to Too Little Too Late.

Implications of SDG 16 implementation challenges for the region

- The path forward to achieve sustainable public spending levels once again starts with IMF austerity policies, which prevent African countries from increasing tax rates, widening the tax base and boosting revenue collection.
- The debt relief imperative threads through every single one of the SDGs. This is especially important for public spending where African countries are facing debt servicing costs that are 3 times as much as education spending, 6 times health spending, 22 times social spending and 236 times more than climate adaptation spending.⁵⁶
- Relieving crushing debt burdens will enable African countries to meet their various regional commitments to increase the share of their national budgets to education, health and social protection.
- With freed up fiscal space, governments will need to implement rigorous measures to ensure that domestic resources are used to fight poverty and inequality. These could include: greater transparency in how national budgets are formulated; greater independence of central banks; commitments to declaring assets of key public officials and to publishing audits; improved access to information to ensure that governments are held accountable. It will be equally important to create other incentives to fight corruption such as anti-corruption agencies and independent judiciaries.

⁵⁶ See footnote 6.

→ As we have explained throughout this report, the IMF austerity conditions for its loans are undermining peoples' economic, social and cultural rights. Despite its promises to learn from its past mistakes, the IMF continues to compel policies that exacerbate poverty and inequality and undermine fundamental rights. The IMF must embark on an ambitious reform process to support governments to build economies that are grounded in wellbeing for people and planet. Social spending floors need to be based on objective and consistent criteria.⁵⁷

SDG 17 Partnership for the goals



Scenario results for SDG 17 - Partnerships for the goals

TOO LITTLE TOO LATE

- Social trust hovers in between the red and green threshold.
- Total government revenue as a proportion of GDP does not change, staying below the threshold for the whole century.

GIANT LEAP

- Social trust reaches the green threshold **by 2070**.
- Government revenue increases dramatically, crossing the green threshold **by 2030** and increasing to upwards of 60% of GDP in the latter half of the century.

⁵⁷ <https://www.hrw.org/news/2023/09/25/imf-austerity-loan-conditions-risk-undermining-rights>

Implications of SDG 17 implementation challenges for the region

- “Trust in institutions” refers to the confidence and reliability that individuals have in various public entities that play a significant role in society. These institutions can include government bodies, judiciary systems, educational systems, non-profit organisations, religious institutions, and more. In the Earth4All regional model, changes in inequality, public spending, poverty, gender inequality, schooling all build up or erode the stocks of social trust over time. This in turn will foster greater trust in institutions which fosters more cooperation and reform willingness, social stability, and long-term relationships between individuals and institutions.
- Trust in institutions is crucial to the ability of governments to implement the policies we suggest in this report. The two measures we observe have a self-reinforcing effect; higher government revenue allows for more social spending, which helps increase trust in institutions, which then has a positive impact on government revenue. This virtuous cycle is one of the main reasons we believe our policy levers can be successful, and is based on our robust social trust index.
- This virtuous cycle also mitigates corruption. When citizens trust their government and institutions, they are more likely to hold them accountable for their actions. Greater transparency and accountability in the use of public funds is thus crucial to ensuring that higher government revenue is linked with reduced corruption and improved governance. This, in turn, can enhance the efficiency of public services and reinforce public confidence in government institutions.
- Strong social trust and high government revenue also provide a buffer against external shocks such as economic downturns or natural disasters. Trusting communities are better equipped to cooperate and support each other during crises, while governments with sufficient revenue can implement timely interventions to mitigate the impacts of shocks on vulnerable populations.
- According to Earth4All’s Social Tension Index with worsening inequality, social tensions will continue to rise in this century, thereby fuelling populist nationalism and the erosion of democracy and public trust around the world.

Section 2 - The policy interventions needed for the inequality turnaround

To significantly reduce inequality in SSA the most urgent interventions include: ending IMF imposed austerity; increased progressivity in domestic tax systems; reversal of the erosion of workers’ rights, through the strengthening of labour rights and trade unions’ negotiating power; and implementation of stronger safety nets and innovative approaches for sharing prosperity.

End IMF austerity to enable increased spending on public services

Oxfam and Development Finance International estimate that 43 out of 55 African Union countries face IMF-imposed public expenditure cuts totalling USD 183 billion over the next five years.⁵⁸ Some of the notable examples include IMF requirements to: impose a sector pay freeze; increase taxes on cooking gas and food; increase value-added taxes on clothing; and eliminate food and fuel subsidies.⁵⁹ The reality is that countries that

“implemented austerity during and after the global pandemic saw their income inequality increase three times more than those that did not”.⁶⁰

Recommended policy levers include:

- Ending IMF austerity conditions and ensuring that all African country strategies, programmes, and policy advice focus on reducing inequality, and contain specific measures to achieve this more effectively.
- Calling on the IMF/WB to support African countries to collect more taxes by “reversing the global ‘race to the bottom’ on corporate tax rates, sharing corporate country-by-country tax reporting information and information on global bank accounts, and ending tax treaties which reduce tax collection.

⁵⁸ See footnote 56.

⁵⁹ See footnote 56.

⁶⁰ See footnote 55.

IMF to support increased public spending

On health spending, the IMF must support African countries to increase health budgets in line with the 15% commitment recommended by the Abuja African Union commitment.⁶¹ Elimination of austerity public spending cuts could potentially allow African governments to quadruple their health spending and maintain this increased level through 2026.⁶² “In South Sudan—a country where there were previously more generals than doctors—the potential for increased health spending is even more dramatic, with the possibility of increasing by thirteen-fold.”⁶³

On education spending, the IMF must support governments to allocate 20% of government budgets to free education from pre-primary through secondary levels.⁶⁴ Education in Sub-Saharan Africa significantly reduces income inequality, raising the income share of the bottom 80% mainly at the expense of the top 10%.⁶⁵

Provide universal social protection programmes including, for example, for the working poor, children, people living with disabilities, unemployed people, and other vulnerable groups, including pensioners.

Increase spending on high-quality public services

Tax revenues are amongst the lowest in Africa. Revenues average about 33% in OECD countries, the figure for Africa was 16% in 2020 – some five percentage points below Asia and the Pacific.⁶⁶ Increasing tax revenue by just 1% of

GDP, could raise US\$4.9 billion each year enough to raise health spending by an average 77% each year across the region.”⁶⁷

Recommended policy levers include:

- Increasing tax revenues in a manner that is fair and equitable is best achieved by increasing the progressivity of the tax systems. This will help in the fight against inequality by raising more revenue for social spending and by reducing the gap between rich and poor by ensuring that tax rates are based on the ability to pay.⁶⁸ Many countries in Africa have regressive consumption taxes, which inflict immense burdens on low and middle-income households.
- Wealth taxation is another measure that is essential to address the levels of wealth inequality that are rapidly increasing in the region. According to the 2022 Africa Wealth Report, the total private wealth currently held in Africa is US\$2.1 trillion, and this figure is expected to rise by 38% in the next 10 years. The South Centre estimates that in South Africa alone, it could raise up to ZAR 143 billion (approximately USD 9.4 billion) in revenue by implementing a 1% tax on the net worth of individuals with assets exceeding ZAR 1.5 billion (approximately USD 98 million).⁶⁹
- Improving tax collection productivity is essential in Africa, which has a low capacity of about 20% of GDP and a lower tax revenue to GDP ratio (17%) than other regions. This is due largely to inefficiencies in tax policy, corruption, lack of accountability, and low levels of revenue collection. It is estimated that simply addressing

⁶¹ African Union. (2015, April). *First Meeting of the Specialised Technical Committee on Health, Population and Drug Control*. https://au.int/sites/default/files/pages/32904-file-abuja_call_2015_evaluation_report_final.pdf

⁶² Martin et al. (2022, January). *The Inequality Crisis in East Africa: Fighting austerity and the pandemic*. Oxfam. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621348/rr-inequality-crisis-east-africa-090222-en.pdf;jsessionid=148F5F0B5EF5C53B895ACED6040E28D8?sequence=7>

⁶³ See footnote 62.

⁶⁴ Martin, M. (2022, February). *Africa's Extreme Inequality Crisis: Building back fairer after COVID-19*. Oxfam. <https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/2022-03/The%20Commitment%20to%20Reducing%20Inequality%20Index-Africa%20Briefing.pdf>

⁶⁵ Seery et al. (2019, September). *A Tale of Two Continents: Fighting inequality in Africa*. Oxfam. https://www-cdn.oxfam.org/s3fs-public/file_attachments/bp-tale-of-two-continents-fighting-inequality-africa-030919-en.pdf

⁶⁶ Agence Française de Développement. (2023, August 7). *Taxation: A key source of revenue to finance development in Africa*. <https://www.afd.fr/en/actualites/taxation-key-source-revenue-finance-development-africa>

⁶⁷ See footnote 55.

⁶⁸ See footnote 65.

⁶⁹ Mbalati, K. (2023, June 30). *Implementing wealth tax and wealth redistribution in Sub-Saharan Africa*. South Centre. https://www.southcentre.int/wp-content/uploads/2023/07/SV249_230630.pdf

tax capacity constraints and collection inefficiencies could boost tax revenue in Africa by 3% of GDP (the difference between the current tax ratio and tax capacity).⁷⁰ Improving tax collection will also require measures to address illicit financial flows.⁷¹

Improving workers' rights and wage equity

The region has made the least progress on SDG 8 (decent work and economic growth).⁷² This comes at a time when the importance of rigorous laws for workers' rights and trade unionisation is clearly one of the most important measures for closing the inequality gap in Africa. Even though freedom of association and collective bargaining are enshrined in law in most African countries, the reality is that these rights are seldom respected.

As is the case around the world, the "possibility for workers to organise and collectively bargain for fair wages is also being compromised in many African countries as trade union rights are under attack".⁷³ Studies show that in Africa, trade union members earn between 10 to 25% more than workers who are not covered by collective bargaining.⁷⁴ When it comes to another important dimension of workers' rights, notably wage equity, according to the ITUC, minimum wages in Africa are among the lowest in the world, with many African countries providing no minimum wage whatsoever.⁷⁵

Besides the lack of minimum wage legislation, the increase in CEO to worker pay gap is a major

contributor to rising inequality throughout the continent. This widening pay gap is "fuelling the growth of the top 1% and top 0.1% incomes, leaving fewer gains of economic growth for ordinary workers and widening the gap between very high earners and the bottom 90%".⁷⁶ One example of the wage gap is in South Africa where CEOs earn between 150 and 949 times more than the average pay of all South African workers.⁷⁷

Recommended policy levers include:

- Embed the rights to strike and bargain collectively in national constitutions and through national laws to ensure compliance with ILO conventions and to restrict employers' undue advantage and influence.⁷⁸
- Adopt a minimum wage to match per capita GDP, as part of a new national wage policy, which would aim to reconfigure the wage structure and enable workers to achieve a just and decent standard of living. The path to decent work includes genuine respect for workplace rights and the opportunity to use collective bargaining spaces and processes.⁷⁹
- Introduce top rates of tax (marginal rates) of at least 75 % on all personal income for the highest earners (e.g., for those making US\$5 million a year, or the top 0.1%) to discourage exorbitant executive pay. Few countries do not tax capital gains, and the average tax rate on capital gains is only 18%, far less than taxes on income from work.^{80, 81}

⁷⁰ United Nations Economic Commission for Africa. (2019). Tax Policy and Performance Policy in Africa. Economic Report on Africa 2019: Fiscal Policy for Financing Sustainable Development in Africa. (pp. 51-74). https://www.uneca.org/sites/default/files/chapterimages/era2019_eng_Chapter_3.pdf

⁷¹ See footnote 69.

⁷² SDG Knowledge Hub. (2022, July 13). *UNECA Launches Africa SDGs Progress Dashboard*. IISD. <https://sdg.iisd.org/news/uneca-launches-africa-sdgs-progress-dashboard/>

⁷³ International Trade Union Confederation. (n.d.). 100% Africa: Dignity, Value and Wages. <https://www.ituc-csi.org/100-africa-dignity-value-and-wages>

⁷⁴ UNI Global Union. (2023, October 6) It's Time for a Pay Rise. <https://uniglobalunion.org/news/wddw23-its-time-for-a-pay-rise/>

⁷⁵ See footnote 73.

⁷⁶ Bivens, J. & Kendra, J. (2022, October 4). CEO pay has skyrocketed 1,460% since 1978. Economic Policy Institute. <https://www.epi.org/publication/ceo-pay-in-2021/>

⁷⁷ See footnote 76.

⁷⁸ Botes, J. (2023, September 19). South Africa: Do we really have stringent labour laws? Global Compliance News. https://www.globalcompliancenews.com/2023/09/19/https-insightplus-bakermckenzie-com-bm-employment-compensation-south-africa-do-we-really-have-stringent-labour-laws_09122023/

⁷⁹ Institute for Economic Justice. (2018, March 18). Submission to Parliament's Portfolio Committee on labour on the National Minimum Wage Bill and Basic Conditions of Employment Amendment Bill. <https://www.iej.org.za/wp-content/uploads/2020/04/IEJ-Submission-on-NMW-and-BCEA-Bills-20-March-2018-min.pdf>

⁸⁰ Christensen et al. (2023, January). Survival of the Richest: How we must tax the super-rich now to fight inequality. Oxfam. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621477/bp-survival-of-the-richest-160123-en.pdf>

⁸¹ Oxfam International. (2023, May 1). Top CEOs got a real-term 9% pay rise in 2022 while workers worldwide took a 3% pay cut. <https://www.oxfam.org/en/press-releases/top-ceos-got-real-term-9-pay-rise-2022-while-workers-worldwide-took-3-pay-cut>

Stronger safety nets and innovative approaches for sharing prosperity

The need for stronger safety nets and innovative approaches for sharing prosperity in Sub-Saharan Africa is critical because it is the world's poorest region and one of the most unequal. However, the combination of extremely low tax revenues, untenable debt levels and IMF imposed austerity conditionalities are all draining public budgets, raising the need for reorienting how the general population receives their fair share of basic human needs.⁸²

One promising approach that is gaining traction is a universal basic dividend (UBD) scheme where all citizens would receive a regular payment from revenue raised by the state from state-owned land and natural resources. User fees could be charged on shared resources, which would be distributed to all citizens as a basic right.⁸³

The UBD is similar to a Universal Basic Income in that citizens are guaranteed a payment. The difference is that with the UBD, the source of that payment is based on profits derived from state-owned assets rather than income and consumption tax revenue, which is the traditional means of funding social safety regimes.⁸⁴

The main premise of the UBD is that the majority of the wealth that is “inherited or created together by society is captured and extracted by the rich rather than distributed fairly among citizens”. However, the damaging social and environmental costs of wealth creation processes are largely borne by the public. By supplementing falling wages and incomes, the UBD could help in reducing social and economic exclusion.⁸⁵

Recommended policy levers include:

- Adopt a universal basic dividends scheme to provide all citizens with a regular payment from revenue generated from the exploitation/ extraction of natural resources. Dividends could be distributed through a Citizen's Fund.⁸⁶

⁸² Webster, K. (2024, January). On the macroeconomics of transition and the search for clarity. The Long Road to a Social Dividend. Earth4All. https://www.clubofrome.org/wp-content/uploads/2024/01/Earth4All_Deep_Dive_Webster_Pt2.pdf

⁸³ Makwana, R. (2015). From Basic Income To Social Dividend. Citizen Network. <https://citizen-network.org/library/from-basic-income-to-social-dividend.html>

⁸⁴ Sadiq, K. (n.d.). *The Case for a Universal Basic Income in South Africa: A Conceptual Approach*. https://repository.up.ac.za/bitstream/handle/2263/87139/Sadiq_Case_2021.pdf?sequence=1

⁸⁵ See footnote 83.

⁸⁶ Earth4All. (2024, April 17). Universal Basic Dividend – your questions answered. <https://earth4all.life/ubd-faq/>

Chapter 5 – Empowerment

Section 1 - Overview of the Earth4All modelling results for the empowerment turnaround

Introduction

The empowerment turnaround examines progress with regard to SDG 4 quality education and SDG 5 gender equality. We cluster these SDGs because the empowerment of women in SSA is about enabling the access of women, girls, and other disadvantaged groups to education, health and lifelong learning as well as access to social protection and opportunities for women to be represented more equally in leadership positions in all sectors.

Most African Union Member States have ratified the whole spectrum of international human rights instruments and many have enshrined prohibitions of gender-based discrimination and harmful social norms and practices in their national constitutions. The reality on the ground, as with many regions around the world, is that the actual implementation of gender-specific commitments remains a challenge, with considerable gaps between aspiration and reality in terms of gender equality.^{87, 88}

In the Too Little Too Late scenario, SDG 4 is never achieved this century. Average years of schooling increases by 2 years, from 8 to 10 years. It never reaches the goal of 16 years, let alone the red threshold of 13 years. As well, with SDG 5, women never achieve pay equity with men. The female share of labour income does not even reach 40% of the median male wage in this century. In fact at the current rate of progress, it will take close to 300 years to achieve full gender equality.⁸⁹

In the Giant Leap scenario, by 2100, the number of average years in school has been doubled from 8 to 16, thereby reaching the global goal within this century. This makes secondary education both possible and likely. As regards SDG 5, there is more improvement than the Too Little Too Late, but the goal of achieving 50% for female pre-tax labour income is never reached. By 2060, the region surpasses the world average, however it takes until 2090 for the red threshold (40%) to be crossed.

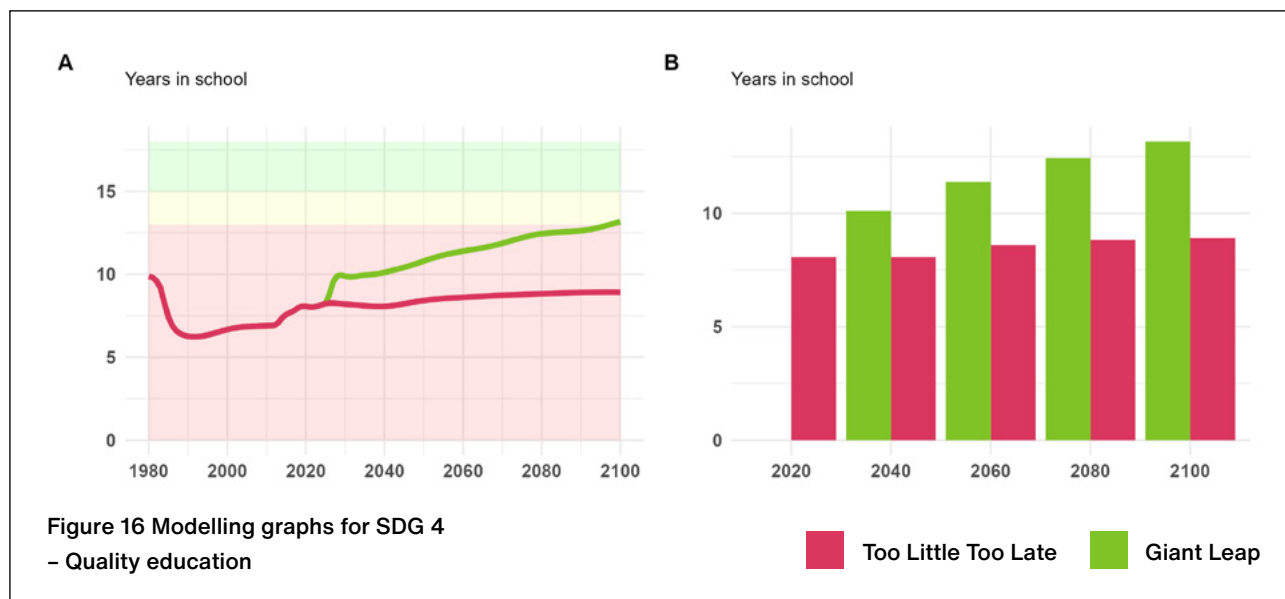
⁸⁷ German Agency for International Cooperation. (2023, December). Promoting Gender Equality and Human Rights in Africa. <https://www.giz.de/en/world-wide/137851.html>

⁸⁸ Nkwain, S. & Mohamed F. (2023, March 23). Gender Equality and International Law in Africa: The Role of Regional Economic Communities. United Nations Development Programme. Equality Now. <https://www.undp.org/sites/g/files/zskgke326/files/2023-04/Gender%20Equality%20%26%20Intl%20Law%20in%20Africa%20Report-%20Final%20%281%29%20%282%29.pdf>

⁸⁹ Azcona et al. (2022) Progress on the Sustainable Development Goals: The Gender Snapshot 2022. UN Women and United Nations Department of Economics and Social Affairs, Statistics Division. <https://unstats.un.org/sdgs/gender-snapshot/2022/GenderSnapshot.pdf>

Overview of the system dynamics modelling results for SDGs 4 and 5

SDG 4 - Quality education



Scenario results for SDG 4 - Quality education

TOO LITTLE TOO LATE

- Average years of schooling barely increases, never even approaching the red threshold.
- **By 2100**, we cannot even expect one more year of schooling on average.

GIANT LEAP

- The increase in years of schooling is far better than in Too Little Too Late, but the green threshold is never reached.
- **By 2100**, the red threshold of 13 years is finally reached making secondary education more significantly more likely, but still below our threshold for success for this SDG.

Implications of SDG 4 implementation challenges for the region

- One-year increase in the average level of education can increase output per capita by 2.5% and reduce the likelihood of conflict by 20%.⁹⁰ However, SSA has the highest rates of education exclusion in the entire world with over 20% of primary-age children out of school, and almost 60% youth not in school.⁹¹
- Completed years of education of any population is an important measure of a country's stock of human capital. And whilst increasing years of schooling is critical. What children learn matters equally. In Sub-Saharan Africa, by the end of primary school over 50% cannot read. And at this rate, 750 million children will be unable to read by the age of 10 by 2030.⁹²
- The path forward once again starts with debt relief to enable African countries to invest in education. One of the key barriers to education is school fees, which create enormous financial stress for families.⁹³ Expanding free schooling is a proven intervention that improves school access. This in turn leads to better economic outcomes in the long term. Investment will also be needed for the 17 million more teachers needed by 2030 to meet the increasing demand in SSA and to address the problems of geographic remoteness and inadequate transportation networks.⁹⁴

⁹⁰ UNESCO. (2023, April 20). UNESCO: *Sustainable development begins with education*. [https://www.unesco.org/gem-report/en/articles/unesco-sustainable-development-begins-education0of%20primary,alone%20at%20risk%20\(ONE%20Campaign\)](https://www.unesco.org/gem-report/en/articles/unesco-sustainable-development-begins-education0of%20primary,alone%20at%20risk%20(ONE%20Campaign))

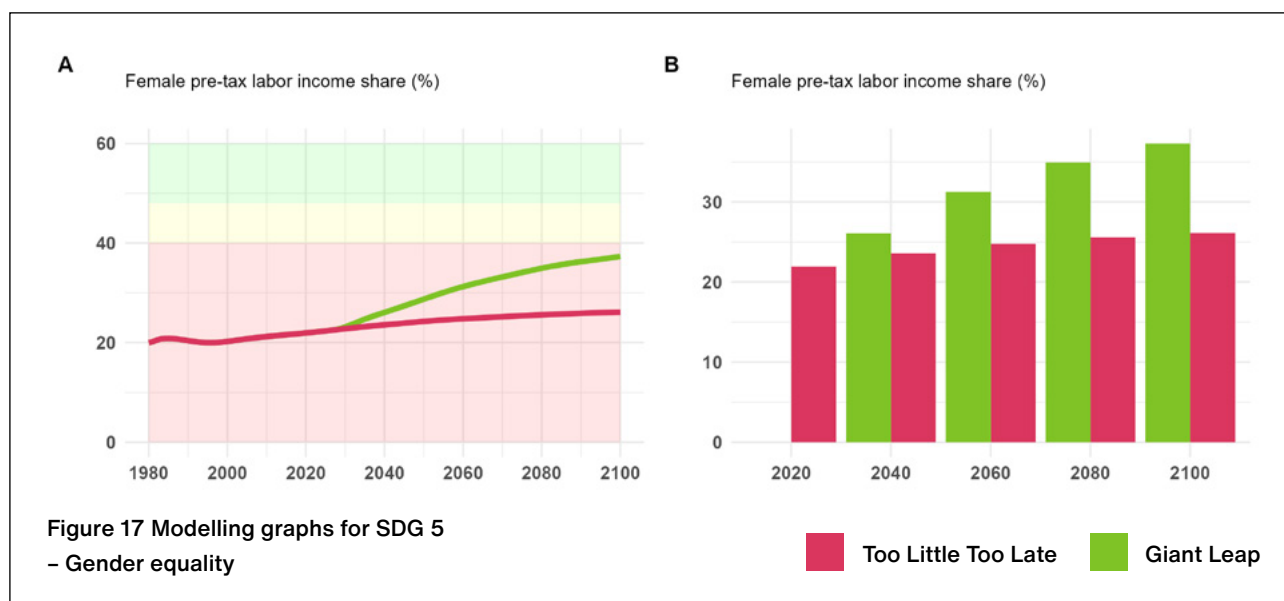
⁹¹ Klapper, H. & Panchamia, M.V. (2023, March 13). *The high price of education in Sub-Saharan Africa*. World Bank Blogs. <https://blogs.worldbank.org/en/developmenttalk/high-price-education-sub-saharan-africa>

⁹² See footnote 90.

⁹³ The World Bank. (2018). *Learning to Realize Education's Promise*. World Development Report 2018. <https://www.worldbank.org/en/publication/wdr2018>

⁹⁴ Heminway, J. (2023, August 3). *Why Becoming Educated is Hard in Sub-Saharan Africa - Especially for Girls*. The Water Project. <https://thewaterproject.org/community/2023/08/03/why-becoming-educated-is-hard-in-sub-saharan-africa-especially-for-girls/>

SDG 5 - Gender equality



Scenario results for SDG 5 - Gender equality

TOO LITTLE TOO LATE

- The female share of labour income only increases slightly.
- **By 2100**, women only earn 25% of the median male wage, which is not even close to the red threshold.
- This is only a 5% increase from 2020, and is still well under the 2019 world average of 35%.⁹⁵

GIANT LEAP

- There is more improvement, but still falls short of equality with men.
- **By 2080**, the region would reach around 35%.
- Despite being a better pathway than Too Little Too Late, the red threshold is never reached.

Implications of SDG 5 for the region

- Achieving gender equality is one of the greatest opportunities for economic transformation in Africa.⁹⁶ Economies that support greater equality score highest in global rankings of wellbeing and human development.⁹⁷
- Despite progress in some areas, gender inequalities remain prevalent and deeply rooted in SSA.
- The path forward starts with recognition that gender equality is a fundamental right and an essential precondition for economic prosperity and social cohesion. Legislation will be needed to support gender equality measures. Increased investment will be needed to meet 2030 education targets and to guarantee the right to education for women and girls.
- Equally, political space must be opened to ensure that women access high-level appointed and competitive positions across national, regional, and international institutions.⁹⁸

⁹⁵ Dyvik E.H. (2023, December 5). Share of income in the world earned by women 2000-2019. Statista. <https://www.statista.com/statistics/1341674/income-women-worldwide/>

⁹⁶ African Center for Economic Transformation. Our Issues: Gender Equality. <https://acetforafrica.org/our-work/our-issues/gender-equality/>

⁹⁷ Gopinath, G. (2022, September 25). Gender Equality Boosts Economic Growth and Stability. International Monetary Fund. <https://www.imf.org/en/News/Articles/2022/09/27/sp092722-ggopinath-kgef-gender-korea>

⁹⁸ Banda, J. (n.d.). From Day One An Agenda for Advancing Women Leaders in Africa. Wilson Center. https://www.wilsoncenter.org/sites/default/files/media/documents/publication/dr_joyce_banda_from_day_one.pdf

Section 2: The policy interventions needed for the empowerment turnaround

Achieving gender equality is one of the greatest opportunities for economic transformation in Africa.⁹⁹ Economies that support greater equality score highest in global rankings of wellbeing and human development.¹⁰⁰

Despite progress in some areas, gender inequalities remain prevalent and deeply rooted in Africa. “Women face ongoing human rights violations, limited access to education, healthcare, employment, decision-making, leadership, and economic resources.”¹⁰¹ Economic and social policies are not only exacerbating inequality but also entrenching discrimination against women and girls.¹⁰²

The proposed policy levers for the empowerment turnaround in Africa include the following:

- Recognition that gender equality is a fundamental right and an essential precondition for economic prosperity and social cohesion.
- Massively scale up investment to meet 2030 education targets and guarantee the right to education for women and girls.
- Ensure gender equality in leadership positions in public and private bodies.

Recognise gender equality as a fundamental human right

The African Union’s (AU) Agenda 2063 identifies “full gender equality in all spheres of life” as one of its core goals by removing all obstacles to women’s ownership and inheritance of property and bank accounts; and by ensuring that at least one in five women have control of productive assets; and reducing violence against women by at least one-

third.¹⁰³ Most AU Member States have also ratified the whole spectrum of international human rights instruments in the past three decades, and many have enshrined prohibitions of gender-based discrimination and harmful social norms and practices in their national constitutions.

The reality on the ground, as with many regions around the world, is that the actual implementation of gender-specific commitments remains a challenge, with considerable gaps between aspiration and reality in terms of gender equality gaps.^{104, 105}

Recommended policy levers include:

- Legislation for gender equality measures and mechanisms to enforce these laws, promoting capacity building and accountability.
- Embed gender equality in national constitutions and other legislative instruments and integrate a gender perspective in all policy decisions, legislation, and development plans.
- Improve access by women to justice and equal protection before the law, as well as equal participation in political life through affirmative action.
- Address the social protection needs of women by ensuring that cash transfers that protect against poverty and inequality are designed to promote women’s opportunities.
- Commit to pay equity.¹⁰⁶ Additionally, legislation must redress occupational and industrial segregation, as well as discrimination and other factors that drive down women’s wages and benefits.

⁹⁹ See footnote 96.

¹⁰⁰ See footnote 97.

¹⁰¹ The United Nations Economic Commission for Africa. (2024, May 3). Gender Equality and the Empowerment of Women. <https://www.uneca.org/gender-equality-and-empowerment-women>

¹⁰² See footnote 65.

¹⁰³ Twum, M. A., & Logan, C. (2023, December 19). AD749: Africans back gender equality, but gaps persist: Governments urged to do more. Afrobarometer – Let the people have a say. <https://www.afrobarometer.org/publication/ad749-africans-back-gender-equality-but-gaps-persist-governments-urged-to-do-more/>

¹⁰⁴ See footnote 87.

¹⁰⁵ See footnote 88.

¹⁰⁶ Menon, R. (2023, March 8). *Why today’s polycrisis increases the importance of delivering gender equity*. Medium. <https://medium.com/sdg16plus/why-todays-polycrisis-increases-the-importance-of-delivering-gender-equity-5d558ad9f683>

- Systematically prevent and reduce the risk of violence against women and girls.

Scale up education and guarantee right to education for women and girls

In about half of African countries, the out-of-school rate among primary school-age children is less than 10% while it is over 50% for the upper secondary school.¹⁰⁷ As with most of the other SDG implementation challenges, progress has been impacted by COVID-19 and the worsening debt crisis in the region. When it comes to guaranteeing the right to education for girls, many African governments have made progress to advance and protect girls' right to education. However, tens of thousands of adolescent girls across Africa still face barriers in schooling each year if they are pregnant or have become mothers.¹⁰⁸ In West and Central Africa, gender inequality in education remains the highest in the world.¹⁰⁹

Recommended policy levers include:

- International partners must support African countries in their efforts to protect the right to education by offering sustained debt restructuring and relief, to ease the pressure on authorities seeking to enhance support for schooling.¹¹⁰
- In accordance with the African Heads of State Declaration on Education Financing,¹¹¹ governments should progressively increase domestic education expenditures towards the 20% global benchmark by 2025.¹¹²

- Bilateral and multilateral development partners, as well as the private sector must increase their support for domestic education strategies and must align all support with the respective national education plans.¹¹³

- Measures are needed to ensure that all girls have a right to continue their education, regardless of pregnancy or motherhood status.¹¹⁴

Increase female leadership in decision-making

Africa aligns closely with the global average when it comes to female leadership, with 24% women's representation in national parliaments. However, this average is primarily upheld by Southern and East Africa, where women represent 31% and 32.4% of parliamentarians, respectively. Five African countries are in the top 20 nations for women's parliamentary representation, and, at 60%, Rwanda still leads the world in terms of women in parliament. Four African countries, each with over 45% women's representation in cabinets, are among the top 20 countries globally.¹¹⁵

The other subregions lag more than 10 percentage points behind. Despite progress in many African nations, most still fall short of the 1995 Beijing Platform for Action's modest goal of 30% and the African Union Agenda 2063 target of 50% women's representation.¹¹⁶ Ellen Johnson Sirleaf, former President of Liberia who recently stated that "It is not enough to recognise that African women and girls deserve rights by adopting new

¹⁰⁷ UNESCO (2018, February 18). *Q&A: How are African countries improving the quality of their education?* <https://www.unesco.org/en/articles/qa-how-are-african-countries-improving-quality-their-education>

¹⁰⁸ Radhakrishnan, A. (2022, August 4). *Africa: Countries Should Remove Barriers That Keep Young Mothers Out of School*. Human Rights Watch. <https://www.hrw.org/news/2022/08/04/africa-countries-should-remove-barriers-keep-young-mothers-out-school>

¹⁰⁹ Resource Centre. (n.d.). Regional Coordination Group on SDG 4 in West and Central Africa Gender Equality and Inclusive Education Task Team. <https://resourcecentre.savethechildren.net/pdf/2017-10-promoting-girls-education-in-wca.pdf/>

¹¹⁰ Amnesty International. (2024, January 25). *Africa: Sustainable debt management key to adequate education financing*. Amnesty. <https://reliefweb.int/report/world/africa-sustainable-debt-management-key-adequate-education-financing>

¹¹¹ Global Partnership for Education. (2021, July 6). *Heads of State Declaration on Education Financing*. <https://www.globalpartnership.org/news/heads-state-declaration-education-financing>

¹¹² Bissoonauth, R. & Mdachi, M. (2021, October 14). *We Need More and Better Education Financing in Africa for a full Recovery from COVID-19*. Global Partnership for Education. <https://www.globalpartnership.org/blog/we-need-more-and-better-education-financing-africa-full-recovery-covid-19>

¹¹³ See footnote 111.

¹¹⁴ See footnote 108.

¹¹⁵ Sirleaf, H. E. (2022, January). *The art of the pivot: African women as critical problem solvers in the 21st century*. Brookings. <https://www.brookings.edu/articles/african-women-and-girls-leading-a-continent/>

¹¹⁶ See footnote 115.

laws and frameworks; countries must ensure that these rights are a lived reality”.¹¹⁷

Recommended policy levers include:¹¹⁸

- Build a social consensus that women’s rights are essential to sustainable human development. “Implementation of laws and legal frameworks must be built on both new attitudes and ending impunity for the violation of those rights.”¹¹⁹
- Invest in women and girls financially, especially to ensure their access to quality education and training, their economic empowerment and political participation.¹²⁰
- Political parties, “must open space for women in their organisations, ensuring that women have

the platforms to access high-level appointed and competitive positions across national, regional, and international institutions.”

- Quotas are important because data also shows that in countries with some form of quota elected 31.9% women on average in their lower or single house, while those without quotas elected only 19.5% overall.¹²¹
- Quotas must be accompanied by ambitious targets and strong implementation mechanisms, and gender-sensitive strategies.¹²²
- Programmes promoting socio-cultural change must engage men, chiefs of villages, and whole communities, to catalyse new perceptions around women in leadership that will lead to behavioural change.¹²³

¹¹⁷ See footnote 115.

¹¹⁸ See footnote 115.

¹¹⁹ See footnote 115.

¹²⁰ Fagla, N. (n.d.). *Reflections on investing in women*. JSI. <https://www.jsi.com/reflections-on-investing-in-women/>

¹²¹ See footnote 98.

¹²² Vasylenko, L. (2023, March 1). *Getting more Women in Politics*. SDG Action. <https://sdg-action.org/getting-more-women-in-politics/>

¹²³ See footnote 98.

Chapter 6 – FOOD

Section 1 - Overview of the Earth4All modelling results for the food turnaround

Introduction

Africa's long-standing food crisis, worsened by the COVID-19 pandemic, the Ukraine war, and climate change, now threatens up to 650 million Africans. This means that 50% of the continent's population lacks economic or physical access to sufficient food to meet their minimum daily needs.¹²⁴ There are many chronic problems that are preventing the transformation of Africa's food systems. The continent's heavy reliance on unpredictable rainfed agriculture amplifies vulnerabilities to climate change, especially prolonged drought and extreme weather events. In the eastern Horn of Africa, Ethiopia, Kenya, and Somalia, close to 23 million people are at risk of acute food insecurity.¹²⁵

Equally, debt-servicing burdens as with all of the five turnarounds continue to usurp much-needed domestic financial resources to reduce food insecurity, which in countries experiencing conflict/insecurity increased by 88% between 2020 and 2021.¹²⁶ Another critical factor is the decreasing self-sufficiency for major food commodities, which is translating into a very high food import bill for Africa, currently at USD 60 billion per year and estimated to rise to USD 100 billion in 2025. Africa has 65% of the world's unused agricultural land.^{127, 128} However, whilst productivity and crop yields have increased, they are still the lowest in the world. According to the FAO, these yields are nowhere close to keeping up with the continent's growing population, which is predicted to triple to 4.3 billion by the end of the century.¹²⁹

In the Too Little Too Late scenario, as regards SDG 12, we do see an overall decrease in fertiliser use per person, however growing populations and the lack of regenerative agriculture, reliance on exploitative food production will have a negative impact on soil conditions regardless of the lowered use of fertiliser per capita.

For SDG 14, ocean acidity levels reach the dangerous red threshold by 2070 (pH of 8.1), thereby pushing ocean acidity outside of planetary boundaries, with the potential for all coral reefs to die out before 2100. For SDG 15, forest loss increases by 1% each year, and by 2100, it increases to 2%.

In the Giant Leap scenario, for SDG 12, fertiliser use per person decreases until 2060. Thereafter the proportion increases because of lower population growth. Despite the use of regenerative practices the use of chemical fertiliser per person and year rises in Giant Leap. For SDG 14, we manage to reverse ocean acidification, reaching the green threshold by 2070 (pH of 8.15) and thereby keeping acidity levels within planetary boundaries. As regards SDG 15, forest loss patterns are similar as in Too Little Too Late. However, this loss could be offset with investments into reforestation efforts and the use of regenerative agriculture practices.

¹²⁴ Mitchell et al. (2021, August 30). *Transforming Africa's Food Systems from the Demand Side*. Boston Consulting Group. <https://www.bcg.com/publications/2021/transforming-africa-food-systems-from-demand-side>

¹²⁵ Whiting, K. (2023, September 19). *4 Steps to Boosting Food Security in Africa, according to experts*. World Economic Forum. <https://www.weforum.org/agenda/2023/09/boosting-food-security-africa-experts/>

¹²⁶ United Nations. (2024, February 13). *Climate action can help fight hunger, avoid conflicts, official tells Security Council, urging greater investment in adaptation, resilience, clean energy*. <https://press.un.org/en/2024/sc15589.doc.htm>

¹²⁷ See footnote 125.

¹²⁸ Kwakwa, V., & Voegelé, J. (2023, June 7). *Getting agriculture policies right is key for the future of food in Africa*. World Bank Blogs. <https://blogs.worldbank.org/en/voices/getting-agriculture-policies-right-key-future-food-africa>

¹²⁹ Adesina, A. (2019). *Feed Africa*. African Development Bank Group. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Brochure_Feed_Africa_-En.pdf

Overview of the system dynamics modelling results for SDGs 12, 14, and 15

SDG 12 - Responsible consumption and production



Scenario results for SDG 12 - Responsible consumption and production

TOO LITTLE TOO LATE

- There is a steady increase in annual nitrogen use per hectare, leading the region away from our proposed goal for this SDG.
- **By 2100**, nitrogen use could increase from around 15kg per hectare to over 18kg, keeping levels well within the red zone.
- This reliance on exploitative agriculture comes as a direct result of the lack of regenerative practices, which will have a significant negative impact on soil conditions.

GIANT LEAP

- Fertiliser use significantly decreases throughout the century thanks to a rapid increase in regenerative practices in food production.
- **By 2040**, the red threshold of 15kg is passed, and by 2080 the green threshold of 5kg is passed.
- **By 2100**, a sustainable 2.8kg of nitrogen per hectare is used each year.

Implications of SDG 12 implementation challenges for the region

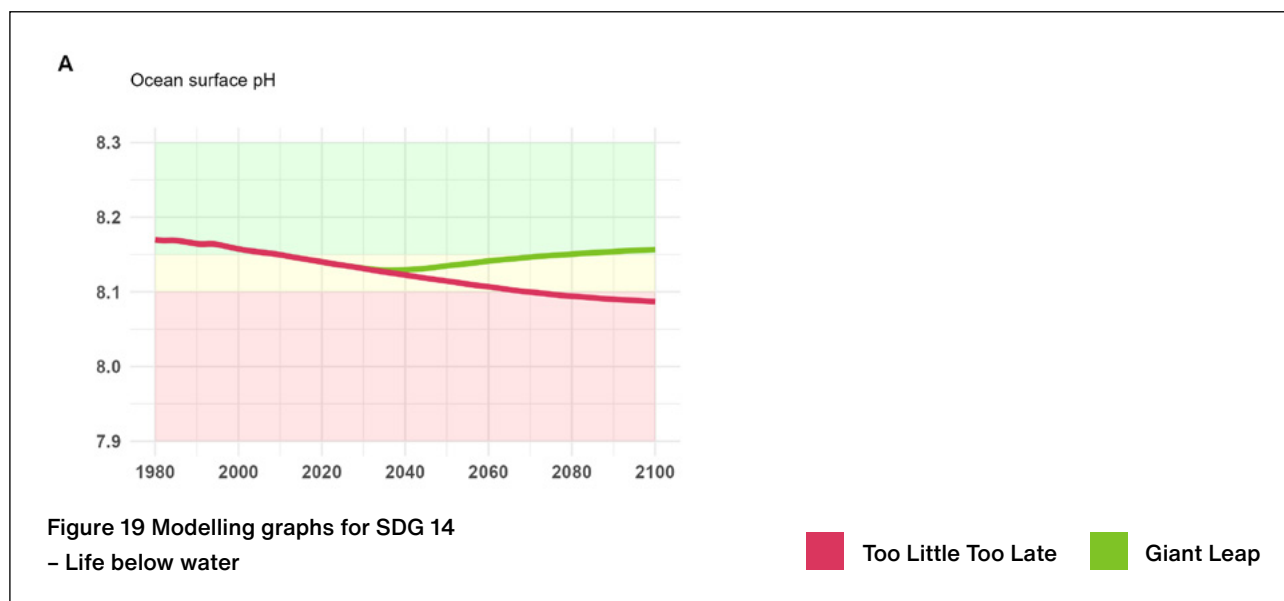
- The issue of fertiliser production in Africa is very complex. On the one hand, Africa's low fertiliser use stems in part from the high costs, low supply and lack of production infrastructure.¹³⁰ However, international financial institutions such as the African Development Bank continue to warn that decreased fertiliser use will only exacerbate food production declines.
- On the other hand, many other donor governments, including the European Commission, have opposed plans to increase fertiliser production in Africa since it would conflict with EU climate goals.
- One of the key challenges is to frame the food systems debate in a way that recognises the climate impacts of fertiliser use and the urgency of African countries through its current food crisis with the investment needed to shift away from climate-harmful synthetic fertilisers to new solutions that will greatly enrich degraded soils - at a price that African farmers can afford, and at a scale and pace fast enough to support Africa through its current food crisis.^{131, 132}

¹³⁰ Shah, S. (2022, October 8). Africa Needs More, Not Less, Fertilizer. Foreign Policy. <https://foreignpolicy.com/2022/10/08/fertilizer-war-climate-shortage-food-agriculture-africa-europe/>

¹³¹ See footnote 130.

¹³² Beyond Pesticides (2023, October 24). Depleted Soils and Petrochemical fertilizers destabilize Africa and Globe. <https://beyondpesticides.org/dailynewsblog/2023/10/depleted-soils-and-petrochemical-fertilizers-destabilize-africa-and-globe/>

SDG 14 - Life below water



Scenario results for SDG 14 - Life below water

TOO LITTLE TOO LATE

- Ocean acidity levels reach the dangerous red threshold **by 2070** (pH of 8.1).
- This pushes ocean acidity outside of planetary boundaries.
- All coral reefs could die out **before 2100**.

GIANT LEAP

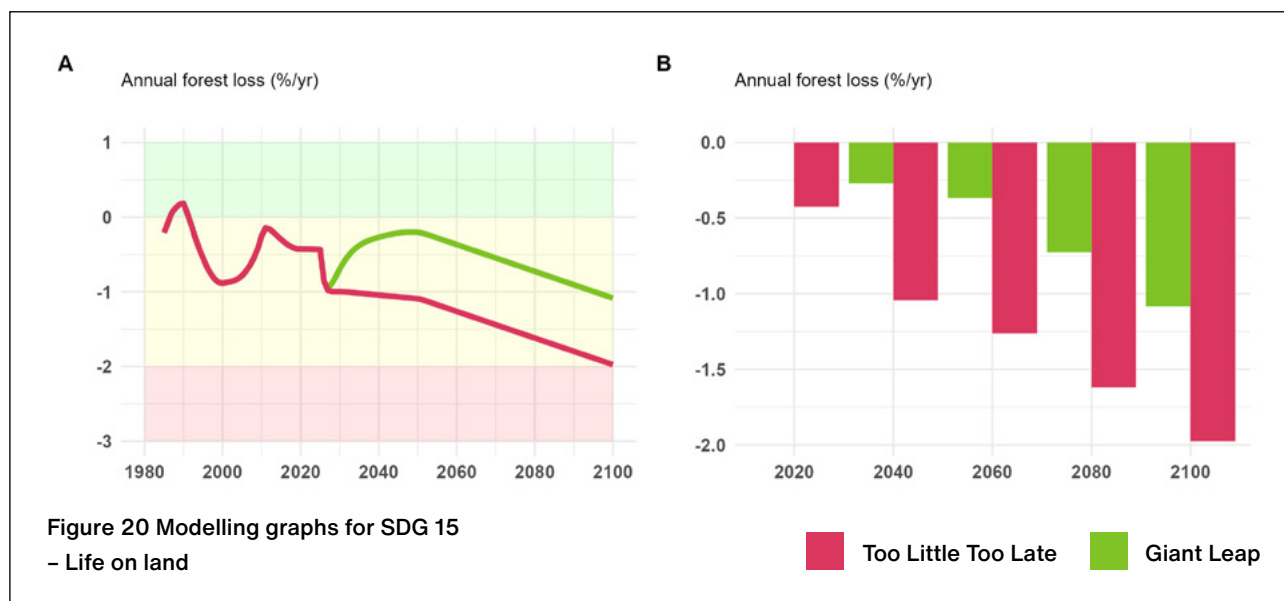
- Ocean acidification is reversed, reaching the green threshold **by 2070** (pH of 8.15).
- In the Giant Leap, we keep acidity levels within planetary boundaries.
- If over-exploitation of marine life is also avoided, the oceans could continue to feed the millions of people living on African coasts and beyond.

Implications of SDG 14 implementation challenges for the region

- We are at a turning point where ocean acidification levels will leave safe planetary boundaries unless we take the most ambitious carbon dioxide emission reductions efforts possible combined with a host of proven technologies that can remove CO₂ from the air and water and safely store it as permanently as possible will prevent ocean acidification from leaving safe planetary boundaries.
- With regard to the food turnaround, ocean acidity is important due to its severe impacts on marine organisms and food chains. Although this is necessarily a global variable, it will have a major impact on Africa's rapidly growing coastal population.
- The 2020 estimate of Sub-Saharan Africa's coastal population (within 100km of the coast) is around 60 million, and this figure is expected to increase by 42% from 2020 to 2035.¹³³

¹³³ Ali, E.M. (2022, June 23). *Taking charge of Africa's oceans and blue resources*. Africa Renewal. <https://www.un.org/africarenewal/magazine/june-2022/taking-charge-africa%E2%80%99s-oceans-and-blue-resources>

SDG 15 - Life on land



Scenario results for SDG 15 - Life on land

TOO LITTLE TOO LATE

- Around 1% of forest cover is lost each year, a trend that worsens over time.
- **By 2100**, this measure reaches the red threshold of 2%.

GIANT LEAP

- Although forest loss is not reversed, it is mitigated by lower demographic pressures and regenerative agriculture.
- The red threshold is never reached, and forest loss is persistently less than in Too Little Too Late by around 1%.

Implications of SDG 15 implementation challenges for the region

- Current deforestation rates in Africa are almost double the speed of the world's deforestation average.¹³⁴ Forest loss is rapidly weakening the ability of Africa's ecosystems to withstand climate change impacts.
- The path forward starts first with examining the key drivers of forest loss, notably Africa's cash crops such as cocoa, its increasing and unsustainable commercial logging and extractive industry expansion as well as charcoal production, another key driver for deforestation in Africa.
- Finding new approaches to rescuing Africa's forests is crucial in order to sustain its economic productivity and save it from the devastating consequences of global warming. One example would be to mobilise resources for small farmers throughout rural Africa who are supporting forest regeneration on their lands, resulting in improved crop yields, productive harvests, and carbon storage boosts.¹³⁵

¹³⁴ Igini, M. (2024, March 5). *Deforestation in Africa: Causes, effects, and solutions*. Earth.Org. <https://earth.org/deforestation-in-africa/>

¹³⁵ Yale E360. (n.d). *As Africa loses forest, its small farmers are bringing back trees*. <https://e360.yale.edu/features/africa-tree-cover-farmer-managed-natural-regeneration>

Section 2 - Recommended policy levers for the food turnaround

50% of Africa's population lacks economic or physical access to sufficient food to meet their minimum daily needs.¹³⁶ Africa needs an urgent and decisive pivot towards sustainable, regenerative, and robust food systems. But first the international community must recognise that the primary cause of hunger in Africa is rural poverty, not food shortages.¹³⁷ This means that solving the food crisis in Africa depends in large part on:

- Improving Africans' purchasing power so they can afford the food they need to survive.
- Addressing the continent's heavy reliance on unpredictable rainfed agriculture, which amplifies vulnerabilities to climate change especially when drought and extreme weather will massively increase food insecurity.
- Relieving debt-servicing burdens that are usurping much-needed domestic financial resources.
- Recognising the linkage between severe food insecurity in countries experiencing conflict/insecurity.¹³⁸
- Decreasing self-sufficiency for major food commodities which is translating into a very high food import bill for Africa even though it holds 65% of the world's unused agricultural land.^{139, 140}
- Improving the transition to regenerative agriculture to sustainably increase productivity

and crop yields to keep up with the continent's growing population.¹⁴¹

The potential for a major economic transformation in Africa is within the continent's reach with projections for its food sector expected to reach USD 1 trillion by 2030. But this goal will depend on several factors. For example, localised markets must be sufficiently strengthened to minimise important dependencies. Perverse subsidies must be repurposed in the form of support to smallholder farmers who are key to driving the shift towards sustainable, regenerative practices. And localised consumption must be complemented by food sovereignty, and the safeguarding of farmworker rights, ensuring that the agricultural ecosystem is both equitable and sustainable.¹⁴²

Repurpose perverse agriculture subsidies

Developed countries subsidise their farmers at a rate of about US\$250bn a year, 25 times more than the annual amount the UN estimates is needed worldwide to combat HIV/AIDS.¹⁴³ Recent studies have confirmed that "a significant part of agricultural support relies on policy instruments that are environmentally harmful and generate increased greenhouse gas emissions (GHGs), and that there are few constraints on these expenditures."¹⁴⁴ The Food and Agriculture Organisation (FAO) estimates this support could reach USD 1.8 trillion by 2030. By contrast, in Africa, FAO data has revealed that in 2015,

¹³⁶ See footnote 124.

¹³⁷ Dessalegn, H. (2023). *Food Security: Strengthening Africa's Food Systems*. Foresight Africa 2023. (pp. 40-55). Brookings. https://www.brookings.edu/wp-content/uploads/2023/01/foresightafrica2023_chapter2.pdf

¹³⁸ UN World Food Programme (WFP). (n.d.). *How does conflict cause hunger?* <https://www.wfp.org/conflict-and-hunger#:~:text=Conflict%20is%20the%20main%20driver,hunger%20levels%20soar%20there%20also>

¹³⁹ See footnote 125.

¹⁴⁰ See footnote 128.

¹⁴¹ World Economic Forum. (2023, December 6). *The 3 changes that can pave the way for regenerative agriculture*. <https://www.weforum.org/agenda/2023/12/3-changes-to-scale-regenerative-agriculture-cop28/>

¹⁴² Ighobor, K. (2023, December 13). *Transforming Africa's food systems: The challenges and opportunities*. Africa Renewal. <https://www.un.org/africarenewal/magazine/june-2023/transforming-africa-s-food-systems-challenges-and-opportunities>

¹⁴³ Mshomba, R. (2002, September). *How northern subsidies hurt Africa*. Africa Renewal. <https://www.un.org/africarenewal/magazine/september-2002/how-northern-subsidies-hurt-africa>

¹⁴⁴ Piñeiro, V & Soto, D. (2023, January 6). *Policy seminar: The harmful environment impacts of agricultural subsidies and prospects for reform*. IFPRI. <https://www.ifpri.org/blog/policy-seminar-harmful-environment-impacts-agricultural-subsidies-and-prospects-reform#:~:text=A%20recent%20study%20by%20the,few%20constraints%20on%20these%20expenditures>

sub-Saharan Africa spent an estimated USD 680 million on environmentally damaging agricultural subsidies.¹⁴⁵

The repurposing of negative subsidies is not about the elimination of support to farmers, but rather the redirecting of resources to regenerative practices that will ensure sustainable food security for all.

Recommended policy levers include:

- Repurpose negative subsidies towards support to smallholder farmers and low-carbon agricultural techniques.¹⁴⁶ However, it is critical that subsidy reform is “carefully integrated with actions in other parts of food systems to achieve coherent approaches, such as rebalancing food prices in favour of nutrient-rich foods and measures.”¹⁴⁷
- High-income countries must remove those subsidies that specifically affect sustainable agriculture in Africa, especially those subsidies that distort market prices for tradable commodities such as cotton and therefore influence the affordability of food and the incomes of African farmers.¹⁴⁸ This is exemplified by the plight of West African cotton producing countries who struggle against the subsidised production from major players like China and the United States.^{149, 150}

Localised production and consumption, food sovereignty, and farmworker rights must be prioritised and protected

The African Union Common Position on Food Systems has placed food sovereignty at the centre of their reform agenda, notably through creating food systems that are centred on local communities and small-scale producers.¹⁵¹

This is especially critical because most of the poor population in Africa depends on agriculture, particularly small-scale farming, as the primary source of their livelihoods.¹⁵² Despite the critical role that smallholder farms play in food and nutrition security in Africa, they face critical challenges such as inadequate land access, financing, and technology, with women experiencing a notable 24% gap in land productivity compared to men,¹⁵³ not to mention vulnerability to changing weather patterns, competition from large industrial farms and a lack of access to reliable, up-to-date information.¹⁵⁴

Recommended policy levers include:

- Enshrining land tenure rights for smallholder farmers to ensure that smallholder farmers can access institutional credit and lack the long-term security needed to justify making labour or finance-intensive land-based investments to increase agricultural productivity.¹⁵⁵

¹⁴⁵ Thomas, S. (2023, August 25). *Is it time to rethink agricultural subsidies in Africa?* Farming First. <https://farmingfirst.org/2023/08/is-it-time-to-rethink-agricultural-subsidies-and-support-in-sub-saharan-africa/>

¹⁴⁶ Ding, H. (2021). *Repurposing Agricultural Subsidies to Restore Degraded Farmland and Grow Rural Prosperity*. https://www.researchgate.net/publication/354051850_Repurposing_Agricultural_Subsidies_to_Restore_Degraded_Farmland_and_Grow_Rural_Prosperty

¹⁴⁷ Global Panel on Agriculture and Food Systems for Nutrition. (2022). *Exploring Potential Benefits of Repurposing Agricultural Subsidies in sub-Saharan Africa (4)*. <https://www.glopan.org/wp-content/uploads/2022/09/AgriculturalSubsidies.pdf>

¹⁴⁸ Hughes, D. (2024, March 22). *Exploring potential benefits of repurposing agricultural subsidies in sub-Saharan Africa – Global panel*. Global Panel. <https://www.glopan.org/subsidies/>

¹⁴⁹ Jellian, M. A. (2022, June 28). *Agricultural subsidies in wealthy countries hurt African producers*. Human Progress. <https://humanprogress.org/agricultural-subsidies-in-wealthy-countries-hurt-african-producers/>

¹⁵⁰ Prakash, A. (2021). *Repurposing Perverse Incentives for Land Restoration*. UNCCD Global Land Outlook Working Paper. <https://www.unccd.int/sites/default/files/2022-03/UNCCD%20GLO%20WP%20incentives.pdf>

¹⁵¹ United Nations, IDTFAA (2023, July 25). *Building Africa's Food Sovereignty and Resilience through Sustainable Investments*. https://www.unfoodsystemshub.org/docs/unfoodsystemslibraries/stocktaking-moment/unfss-2-special-sessions/idtfaa---africa-special-session---un-food-systems-summit-2---policy-paper.pdf?sfvrsn=e19159a_3

¹⁵² Farm Radio International. (2023, October 16). *Supporting small-scale farmers to solve the food security crisis*. <https://farmradio.org/supporting-small-scale-farmers/>

¹⁵³ See footnote 152.

¹⁵⁴ See footnote 152.

¹⁵⁵ Landesa. (2014). *Smallholder Farming and Achieving Our Development Goals*. <https://www.landesa.org/wp-content/uploads/Issue-Brief-Smallholder-Farming-and-Achieving-Our-Development-Goals.pdf>

- Create enabling environments that support women's right to own land, including their right to access credit.
- Equip and enable farmers to participate in carbon farming practices to increase soil capacity for storage of atmospheric carbon.¹⁵⁶ This will require prioritising agroecology, and integrating traditional and scientific knowledge to build resilient and sustainable food systems.¹⁵⁷
- Enhance peasant-led agro ecological production, given that peasant seed systems supply 90% of global seeds, critical for climate resilience and community sustainability.¹⁵⁸
- Ensure the implementation of farmworkers' rights across the supply chain. Mechanisms of accountability and improvement can be developed in collaboration with the voices and well-being of farmworkers at the core to create an ethical food supply chain.

¹⁵⁶ Shroff, J. (2022, September 28). Why smallholder farmers are central to new food security interventions. World Economic Forum. <https://www.weforum.org/agenda/2022/09/smallholder-farmers-key-achieving-food-security/>

¹⁵⁷ CSIPM. (2023, June 20). *African civil society organisations and people's movements call for food sovereignty!* <https://www.csm4cfs.org/african-civil-society-organisations-and-peoples-movements-call-for-food-sovereignty/>

¹⁵⁸ See footnote 157.

Chapter 7 – ENERGY

Section 1 - Overview of the Earth4All modelling results for the energy turnaround

Introduction

The Earth4All energy turnaround aims for net-zero emissions by 2050, with greater energy efficiencies in global energy systems while ensuring sustainable energy for all.

In Africa, the systemic approach of the energy turnaround aims to address electricity access (SDG 7), CO₂ intensity (SDG 9), observed warming (SDG 13), emissions per person (SDG 11), and climate action (SDG12). Achieving the energy turnaround in Africa will require massive scaling up of efforts to increase energy access, scale up renewable energy technologies, and facilitate local innovation. These measures are essential for the continent to move towards a model that supports both centralised and decentralised clean and safe energy solutions for all within planetary boundaries, and which ultimately reflects African perspectives and realities.¹⁵⁸

The system dynamics modelling results reveal massive differences between the Too Little Too Late and the Giant Leap scenarios for the Energy Turnaround in SSA.

In the Too Little Too Late scenario, none of the energy-related SDGs are met. For example, SDG 7 sees only marginal improvement in access to energy. With over 600 million Africans currently lacking energy access, that number is only reduced by 50 million people by 2040. Worst still, increased electrification is predicated on continued reliance on fossil fuels due to chronic underinvestment in renewables.

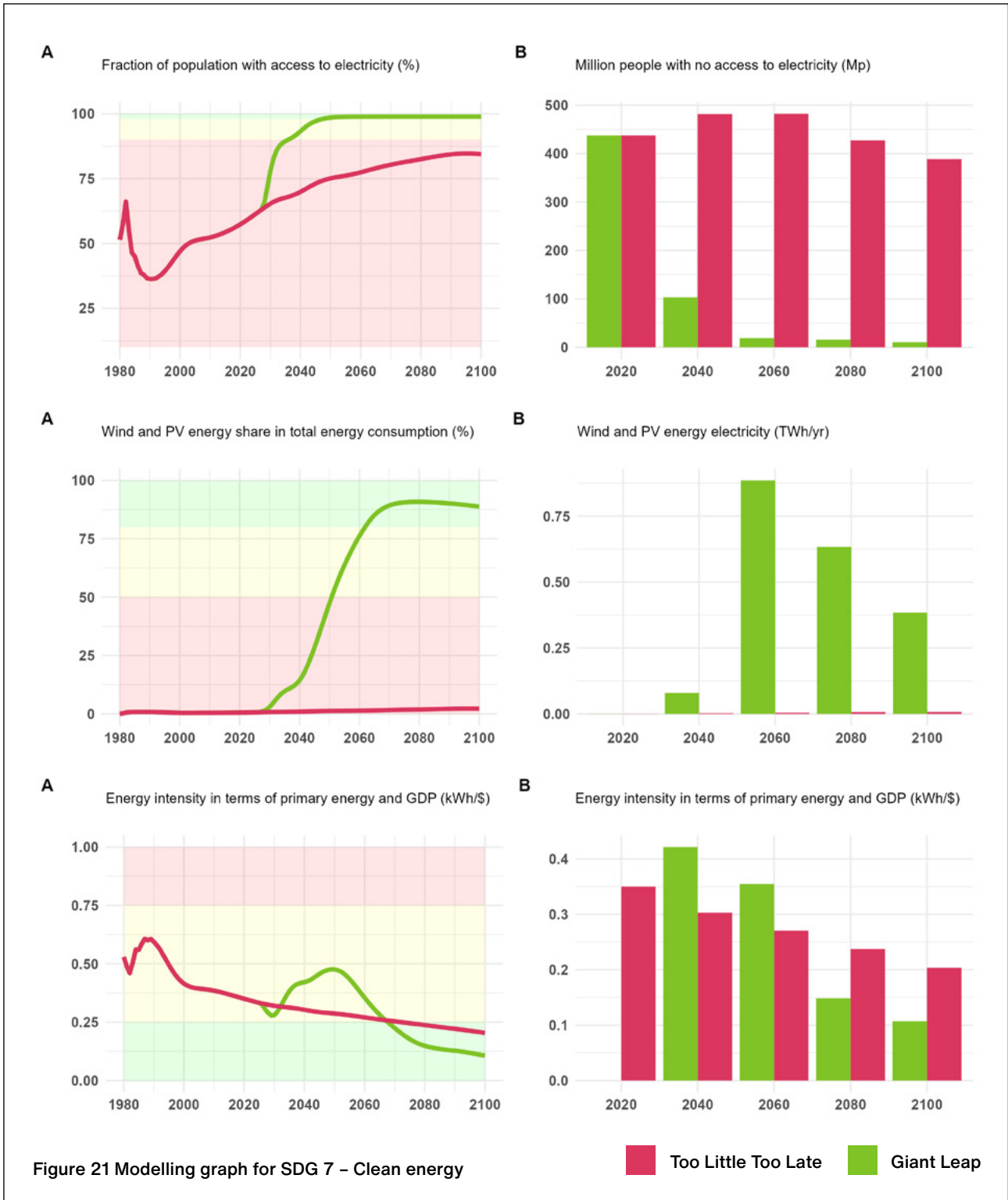
SDG 7 sees continued increase in the carbon intensity of production. SDG 11 is equally grim with emissions in cities reaching 3 tonnes per year by 2100. SDG 12 brings Africa into a catastrophic state, with global temperature rise at 2.5 degrees Celsius. Because the region warms faster than the global average, by 2050, daytime temperatures could reach 46 degrees Celsius, making parts of the region completely uninhabitable.

The Giant Leap shows us that there is tremendous potential to change SSA's trajectory. For SDG 7 by 2040, the number of people without access is reduced by 400 million (as opposed to 50 million in Too Little Too Late). Access to de-carbonised electricity reaches 98% by 2050. For SDG 9, we see carbon intensity fall to near 0 kgCO₂/\$ by 2050, thereby contributing to more than \$20 trillion in growth every year from 2050. For SDG 11, as early as 2040, per capita emissions decrease well into the safe green zone. And with SDG 12 on climate action, the tripling of investment in renewables means that Africa reaches acceptable levels of carbon emissions by 2040 and staying well within the green zone for the rest of the century. By 2060 for example, emissions fall to only 0.2 gigatons of CO₂ per year, well within the green zone.

¹⁵⁸ See footnote 54.

Overview of the system dynamics modelling results for SDGs 7, 9, 11 and 12

SDG 7 - Clean energy



Scenario results for SDG 7 - Clean energy

TOO LITTLE TOO LATE

- The proportion of people with access to electricity slowly improves but never reaches the red threshold.
- Electrification is predicated on a continued reliance on fossil fuels due to underinvestment in renewables.
- The absolute number of people with no access to energy hardly changes, staying at around 400-500 million people.
- Energy intensity stays in an acceptable range, but not due to increased efficiency. The economy stays reliant on low-tech manufacturing.

GIANT LEAP

- **By 2050**, the region reaches the green threshold for energy access and leapfrogs to the clean energy pathway.
- **By 2060**, the green threshold for renewable energy passed and settles at around 90% of total energy consumption
- Energy intensity fluctuates, but reaches the green threshold due to a transition towards energy efficient, high-value industry.

Implications of SDG 7 for the region

- Whilst SSA consumes a disproportionately low amount of energy, the pre-COVID progress in energy access has been reversed due to population growth outpacing electrification rates and other factors such as supply chain disruptions, economic consequences of COVID and the Ukraine war.¹⁵⁹
- Improving energy access is also undermined by the fact that the majority of oil and gas investment in the region comes from international companies, and the majority of which is exported. Africa exports 80% of its crude oil and 45% of its natural gas.¹⁶⁰
- And as with all the other SDGs, high levels of debt leave countries with reduced public finance to invest in Africa's weak, unreliable and ageing infrastructure.
- The path forward starts with the tripling of investment in renewable energy in the continent. According to the International Energy Agency (IEA), \$200 billion per year in renewable energy investment will be required to achieve access to clean, safe energy. However it is critical that this investment comes in the form of concessional financing and helps to mobilise the \$90 billion of private sector investment that is needed.¹⁶¹

¹⁵⁹ Baskaran, G., & Coste, S. (2024, January 31). *Achieving universal energy access in Africa amid global decarbonization*. CSIS | Center for Strategic and International Studies. <https://www.csis.org/analysis/achieving-universal-energy-access-africa-amid-global-decarbonization#:~:text=%5B1%5D%20Universal%20access%20to%20electricity,located%20in%20sub%2DSaharan%20Africa>

¹⁶⁰ See footnote 160.

¹⁶¹ See footnote 160.

SDG 9 - Industry, innovation and infrastructure



Scenario results for SDG 9 - Industry, innovation and infrastructure

TOO LITTLE TOO LATE

- Carbon intensity of production stays at 0.2 kg of CO₂ per dollar (unit of GDP).
- The lack of public and private investments results in the slow growth of innovative industry and new infrastructure capacity.
- Although carbon intensity stays below the current level of the American economy, continued reliance on fossil-fuel driven and low-tech manufacturing and African industry remains carbon-intensive.

GIANT LEAP

- Carbon intensity falls to near 0 kgCO₂/\$ **by 2050**.
- Massive government investment complemented by increased donor investment more than makes up for the loss in private investment from progressive taxation.
- Increased investment levels could add more than US\$20 trillion every year **from 2050**.
- Increased industrial capacity, particularly from investments in innovations and infrastructure driven by renewable energy, brings down Africa's carbon intensity much quicker than in Too Little Too Late.

Implications of SDG 9 implementation challenges for the region

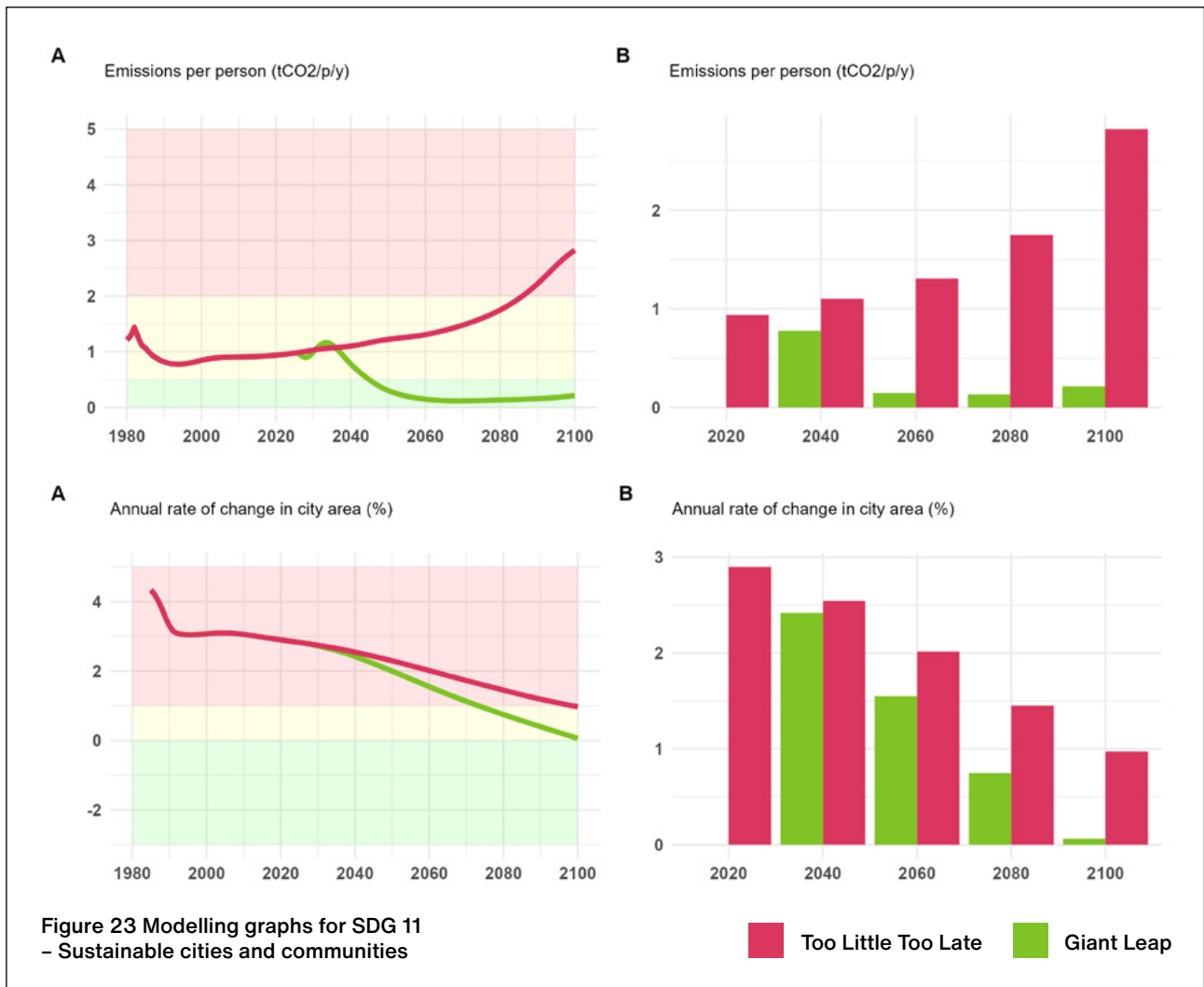
- Globally, manufacturing is the single largest contributor to GHG emissions. Whilst Africa's contribution to those emissions is currently small.
- It is expected that Africa's manufacturing sector will potentially double in size, and with no efforts to decarbonise, its emissions could double by 2050.¹⁶² However to reach net zero will require US\$2 trillion of additional investments in African manufacturing.¹⁶³
- At the same time, decarbonised growth could create approximately 3.8 million new jobs. As with food and energy, it is important to keep the value of these new jobs inside Africa rather than importing these products.¹⁶⁴

¹⁶² Bouchene, L, Jayaram, K, Kendall, A, Somers, K. (2021, September 27). *Africa's green manufacturing crossroads: Choices for a low-carbon industrial future*. McKinsey & Company. <https://www.mckinsey.com/capabilities/sustainability/our-insights/africas-green-manufacturing-crossroads-choices-for-a-low-carbon-industrial-future>

¹⁶³ See footnote 163.

¹⁶⁴ See footnote 163.

SDG 11 - Sustainable cities and communities



Scenario results for SDG 11 - Sustainable cities and communities

TOO LITTLE TOO LATE

- African cities consistently grow faster in this scenario and are not able to build a clean and accessible energy system to support this growth.
- As a result, African cities continue to have high air-pollution and emissions per person, which rises into the red zone **by the 2080s**.
- **By 2100:** emissions reach 3 tonnes per person each year.

GIANT LEAP

- **By 2040:** emissions decrease into the green zone.
- For most of the century, there is only 0.2 tons of CO₂ per person each year.
- There is a slight increase at the end due to declining population numbers.

Implications of SDG 11 implementation challenges for the region

- One of the big challenges to the implementation of SDG 11 is poor infrastructure in African countries that also face limited access to green technologies, which in turn undermine solutions for reaching SDG 11. In SSA, currently 55% of the population live in cities that have extremely high densities of 1,383 people per km².
- As population density in the region's cities is expected to increase in the coming decades, it is critical that increased public spending is directed towards improving the sustainability of infrastructure in cities and communities. This will be critical to improve energy efficiency, increase access to renewable energy and improve inefficient water and waste systems, build resilience to extreme weather events and thus ensure food and energy security for all. Lack of access to all of these critical resources will only exacerbate social tensions and drive conflict.¹⁶⁵
- At the same time, the region will see the emergence of mega-cities, with populations exceeding 10 million. It is expected that in Sub-Saharan Africa, the populations of Kinshasa, Nairobi and Lagos will grow at least 80% in the coming decades.¹⁶⁶ These fast-growing cities are among the world's 20 most vulnerable and at-risk megacities, where lack of access to water, food and energy are all important drivers for violence and conflict in the region.
- The path forward starts with mobilisation of domestic resources and external investment to support African countries to launch green urban strategies. Empowering community involvement is also key to strengthening dialogue with investors and development partners to boost the renewable energy transition.¹⁶⁷

¹⁶⁵ Vigotti, R. (2023, September 21). *Enabling African communities with sustainable solutions: Working toward SDG 11*. Illuminem. <https://illuminem.com/illuminemvoices/enabling-african-communities-with-sustainable-solutions-working-toward-sdg-11>

¹⁶⁶ Poon, L. (2022, October 19). *Where the Rapid Rise of Megacities Is Unsustainable*. Bloomberg. <https://www.bloomberg.com/news/articles/2022-10-19/the-unsustainable-rise-of-megacities-in-africa-and-asia>

¹⁶⁷ See footnote 166.

SDG 13 - Climate action



Scenario results for SDG 13 - Climate action

TOO LITTLE TOO LATE

- Continued reliance on fossil fuels due to lack of investment for renewables sustains the dangerous growth of GHG emissions.
- **By 2050**, global temperatures will increase beyond 1.5C.
- **By 2100**, global temperatures will increase beyond 2.5C.

GIANT LEAP

- Investments in renewables quickly lowers emissions per person.
- **By 2040**: Africa reaches acceptable levels of carbon emissions and stays well within the green zone for the rest of the century.

Implications of SDG 13 implementation challenges for the region

- Because Africa is likely to continue warming faster than the global average, by 2050 daytime temperatures could rise to 46 degrees Celsius. This could make parts of the region uninhabitable.
- A potentially warmed world will imperil communities through the region with devastating floods, droughts and heatwaves, all of which will completely undermine access to water, food, energy and livelihoods, especially agriculture.
- If unmitigated, the climate crisis will combine with increasing instability and conflict that is already spreading throughout SSA. Worsening armed conflict is already disrupting livelihoods and driving displacement and food and energy poverty.¹⁶⁸
- The Giant Leap shows us that there is tremendous potential to change SSA's trajectory. But the path forward must start with intensive investment into renewable energy, as well as innovation in industry.

¹⁶⁸ UNHCR. (2022, November 16). *UN warns of worsening conflict and displacement in Sahel without immediate climate action*. <https://www.unhcr.org/news/press-releases/un-warns-worsening-conflict-and-displacement-sahel-without-immediate-climate>

Section 2 - Recommended policy levers for the energy turnaround

Africa's sustainable energy sector, vital for meeting the SDGs, requires an annual clean energy investment of approximately USD 133 billion. This is in stark contrast to the current USD 9.4 billion allocated to renewables, significantly less than the USD 29 billion spent annually on fossil fuels and the USD 37 billion in annual fossil fuel subsidies.¹⁶⁹ Moreover, 46% of Africans lack electricity, pointing to a severe energy access disparity, with sub-Saharan Africa's power generation capacity (45 GW) being less than Spain's and plagued by maintenance issues.¹⁷⁰

Triple investment in renewables and efficiency

Despite Africa's vast potential and critical need for sustainable development considering that the region is home to 20% of the global population, only 2% of global renewable energy investments are directed towards the continent.¹⁷¹ Moreover, Africa has received a mere US\$9.4 billion in climate finance for energy development, whereas to meet its Nationally Determined Contributions (NDCs), an investment between US\$2.6 trillion to US\$2.8 trillion is necessary from 2020 to 2030.¹⁷² Currently Africa attracts just 2% of worldwide clean energy funding.¹⁷³

The call for increased investment in renewables in Africa is a call for equitable development, energy security, and climate justice. With proper support and investment, Africa can transition to a renewable energy future, fostering economic growth, improving public health, and ensuring a

sustainable environment for future generations.

Recommended policy levers include:

- Investments in renewable-related infrastructure, especially transmission lines and storage facilities.¹⁷⁴
- Accelerate renewable energy investment to reach 27% share of power generation as quickly as possible.¹⁷⁵ Innovative de-risking measures are also essential.
- Strengthen capacity building and educational programs to cultivate local expertise and workforce in the renewable energy sector, thereby contributing to its energy independence and economic development.¹⁷⁶
- Development banks should prioritise renewables, better grants and financing for Africa, and end subsidies for fossil fuels.

Climate financing must be provided as concessional grants and not loans

Africa's share of global climate finance was only 4.5%, equating to US\$ 29.5 billion in 2019/2020, with a skewed financing structure heavily favouring loans over grants.¹⁷⁷ 55% of climate funding was disbursed to Africa in the form of loans and other forms of debt financing that will sink fragile states further into debt.¹⁷⁸ Governments and multilateral lenders must not be allowed to count non-concessional loans as climate finance, most especially when 60% of

¹⁷⁰ Lee, H. E., et al. (2022). Still lacking reliable electricity from the grid, many Africans turn to other sources. Afrobarometer. https://www.afrobarometer.org/wp-content/uploads/2022/04/ad514-pap10-still_lacking_reliable_electricity_from_the_grid-many_africans_turn_to_alternative_sources-afrobarometer-10April22.pdf

¹⁷¹ Nakate, V. (2023, October 27). Rich countries should stop pushing fossil fuels on Africa – don't we deserve a renewable future too? The Guardian. <https://www.theguardian.com/commentisfree/2023/oct/27/rich-countries-fossil-fuels-africa-renewables-gas-climate>

¹⁷² Chika, U.K. (2023, September 13). Just Energy Transition in Africa. African Development Bank Group. https://www.afdb.org/sites/default/files/koafec_ministerial_conference_-_just_energy_transition_-_urama_09-sept-23.pdf

¹⁷³ See footnote 172.

¹⁷⁴ RES4Africa Foundation. (2023). Africa's Energy Future is Renewable. <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf>

¹⁷⁵ See footnote 175.

¹⁷⁶ See footnote 54.

¹⁷⁷ See footnote 170.

¹⁷⁸ Oxfam in Africa. (2023, December 5). Conflict-ravaged countries pushed into debt traps by climate funding. <https://africa.oxfam.org/latest/press-release/conflict-ravaged-countries-pushed-debt-traps-climate-funding>

low-income countries are already either in or on the verge of debt distress, and are “forced to spend five times more every year on servicing their debts than they do on climate adaptation.”¹⁷⁹

Recommended policy levers include:

- New and additional, predictable, and concessional finance that is based on the needs of affected countries and communities.¹⁸⁰
- Rules should be established to cap debt, so they do not exceed the amounts that countries spend on climate adaptation.¹⁸¹

Make renewable energy affordable by redirecting fossil fuel subsidies

Currently, billions are being spent in Africa to prop up the existing fossil fuel energy system. These subsidies come at a great cost in terms of the public budget, not to mention the heavy toll on public health and the climate. Fossil fuel subsidies also prevent the just energy transition, because a simple decrease of 1% in fossil fuel subsidies can actually catalyse a 15.19% increase in renewable energy production in the long run.¹⁸²

On top of this, African countries are often pressured to retain fossil fuel subsidies by multinational fossil fuel companies, which are continuing to invest in building new fossil fuel expansion projects. Not only does this fossil fuel expansion mean environmental disaster for

local communities, but gas extracted from these African projects rarely generates electricity for Africans, rather than for export.¹⁸³ However, around the continent, countries are starting to embark on major subsidy reform to create more fiscal space for development spending. Countries such as Congo-Brazzaville and Angola, important hydrocarbon producers, have recently announced that they would phase out fossil fuel subsidies by 2025 and thereby increase public spending in the social sectors. Angola is now spending over 40% of its national revenue on social spending.¹⁸⁴

Recommended policy levers include:

- The international community must free up fiscal space to enable African countries to reduce fossil fuel energy subsidies to just 1% of GDP. Decisive policy reforms are essential to ensure that harmful subsidies do not increase but instead are redirected towards renewable energy and social protection in equitable ways that drive a people-centred development agenda.¹⁸⁵
- Strong institutions are needed to sustain energy subsidy reforms, such as the specialised regulatory entity established in Tanzania, which keeps the public constantly informed about prices and investigates concerns about potential price collusion practices.¹⁸⁶

¹⁷⁹ Kozul-Wright, R. (2023, June 14). *A climate finance goal that works for developing countries*. UNCTAD. <https://unctad.org/news/climate-finance-goal-works-developing-countries>

¹⁸⁰ See footnote 179.

¹⁸¹ See footnote 180.

¹⁸² Matalla et al. (2023). *The role of fossil fuel subsidies in preventing a jump-start on the transition to renewable energy: Empirical evidence from Algeria*. Resource Policy 86(B). <https://www.sciencedirect.com/science/article/abs/pii/S030142072300987X>

¹⁸³ See footnote 172.

¹⁸⁴ International Energy Agency. (2023). *Financing Clean Energy in Africa*. <https://iea.blob.core.windows.net/assets/f76594a5-8a9f-4820-ba3e-2908e03b02a9/FinancingCleanEnergyinAfrica.pdf>

¹⁸⁵ See footnote 54.

¹⁸⁶ International Monetary Fund. (2013). *Energy Subsidy Reform in Sub-Saharan Africa*. <https://www.imf.org/external/pubs/ft/dp/2013/afr1302.pdf>

Conclusion

In September 2023, Earth4All was invited by the UN Futures Lab to present the findings of the *SDGs for All* Report to UN Secretary-General Antonio Guterres. At this meeting the Secretary-General requested Earth4All to apply our system dynamics modelling to explore and understand Africa's potential SDG pathways through the next century.

The benefits of the Earth4All system dynamics model enable us to capture broad system perspectives¹⁸⁷, alongside the complex interactions and reinforcing / balancing feedback loops in the implementation of the SDGs,¹⁸⁸ and higher levels of aggregation.¹⁸⁹ The modelling also enables us to include a wide range of variables, including planetary and “softer” variables such as societal trust and wellbeing and social tension.¹⁹⁰ Above all, the important value-add of the Earth4All system dynamics modelling enables us to explore the key macro-level trends and insights into how the policy levers reflected in the five extraordinary turnarounds that tackle poverty, inequality, empowerment, food and energy, must work together to enhance wellbeing within planetary boundaries.¹⁹¹

The Earth4All model does not presume to make precise predictions of what will happen in the future. Instead it creates scenarios that enable us to test policies to accelerate SDG progress. Our modelling results for Africa reveal the importance of simultaneously activating the five extraordinary turnarounds to enable the continent to eliminate poverty, enhance the resilience of the population, and generate a new economy that delivers

wellbeing for all people and the planet. At the same time, the modelling results for Africa reveal stark differences between the Giant Leap and Too Little Too Late scenarios. In the Too Little Too Late scenario, the path of unsustainable economic development consigns Africa to a lost century of development. Food, water and energy crises reach unthinkable levels, rendering much of the continent uninhabitable by the end of the century. In the Giant Leap scenario, all the SDGs are met, therefore securing a sustainable future for all, within the planetary boundaries.

Our modelling results show that all of the interlinked challenges grow more complex and daunting with every failed multilateral moment. Our modelling also reinforces that we cannot continue to keep failing and tackling these problems systematically. Solving inequality and the planetary crisis go hand-in-hand, if Africa is to stand a fighting chance in tackling planetary threats that will create unliveable conditions for most of its population by the end of the century. Rapidly scaled up action on poverty and inequality is essential to enable the continent to cope with the environmental shocks and stresses that will only worsen if action is not taken in this regard. Our modelling highlights that none of the environmental SDGs will be met without concerted action on inequality and poverty, thereby reinforcing the most important conclusion of this work, namely, that the speed of action on planetary boundaries is a direct function of the speed of action on inequality and poverty. Nowhere is this more evident than in Sub-Saharan Africa.

¹⁸⁷ Peng, W et al. (2021, June 8). *Climate policy models need to get real about people — here's how*. Nature. <https://www.nature.com/articles/d41586-021-01500-2>

¹⁸⁸ Cavana, R.Y. et al. (Ed). (2021). *Feedback Economic Modeling with System Dynamics*. Springer International Publishing.

¹⁸⁹ Donges et al. (2021, November 12). *Taxonomies for Structuring Models for World-Earth System Analysis of the Anthropocene: Subsystems, Their Interactions and Social-Ecological Feedback Loops*. Earth System Dynamics, 12(4). <https://esd.copernicus.org/articles/12/1115/2021/>

¹⁹⁰ Donges et al. (2021, November 12). *Taxonomies for Structuring Models for World-Earth System Analysis of the Anthropocene: Subsystems, Their Interactions and Social-Ecological Feedback Loops*. Earth System Dynamics, 12(4). <https://esd.copernicus.org/articles/12/1115/2021/>

¹⁹¹ Collste et al. (November, 2017). *Policy Coherence to Achieve the SDGs: Using Integrated Simulation Models to Assess Effective Policies*. Sustainability Science 12(6), 921-931. <https://link.springer.com/article/10.1007/s11625-017-0457-x>



