

Research Article

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INTERGENERATIONAL EQUITY IN SAUDI ARABIA'S SUSTAINABILITY JOURNEY

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INTRODUCTION

The COVID-19 pandemic has already been particularly significant generational event in human history. The pandemic did not spare any sphere of society and intergenerational relationships were particularly impacted. It forced more interactions between generations, particularly in terms of healthcare activities. The reinvigoration of these intergenerational relationships has led to interest in restoring longer term solidarity between the generations. This has in turn also prompted a social examination about what intergenerational equity in sustainability really means and the likely role of the youth in this enterprise. This paper investigates that question and also further investigates what it means to the Kingdom of Saudi Arabia.

SUSTAINABLE DEVELOPMENT

The most commonly referenced definition of sustainable development is taken from the 1987 UN Brundtland Commission which defined sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). In other words, at the core of “sustainable development” is the idea that social welfares should not be compromised across generations, the idea of intergenerational equity forms the core meaning of sustainable development.

There have been other interpretations of sustainable development since that time. The idea of planetary boundaries is a particularly interesting model that has been defined by Johan Rockström and his peers in an article in the *Nature* journal. This model points out that “...identifying and quantifying planetary boundaries that must not be transgressed could help prevent human activities from causing unacceptable environmental change...” (Rockström et al, 2009). These scientists identified 9 critical processes that regulate the ability of the earth to maintain a stable environmental state. The underlying premise is that the environmental stability of the past 10,000 years is under threat from human activity. They therefore suggested a series of safe human operating thresholds with regards to natural environmental systems. These thresholds are based on the planet's biophysical systems.

For each of these thresholds, they examined the extent to which human activities would put enough pressure on the natural biophysical systems to compromise them and push earth into a tipping point of lost equilibrium. The real problem is that we do not know exactly where these tipping points are; as a precautionary policy measure, the scientists therefore proposed a set of nine boundaries which should essentially act as warning signals for humanity. Human activity within these boundaries does not compromise the natural integrity of the planetary biophysical systems; any “overflows” beyond these boundaries would compromise both natural and socio-economic systems.

Figure 1 and Table 1 (Rockström et al, 2009) illustrate the nine earth-system processes and associated thresholds to define planetary boundaries:

- climate change;
- rate of biodiversity loss (terrestrial and marine);
- interference with the nitrogen and phosphorus cycles;
- stratospheric ozone depletion;
- ocean acidification & global freshwater use;
- change in land use;
- chemical pollution;
- atmospheric aerosol loading.

Table 1 Earth-system processes and associated thresholds

PLANETARY BOUNDARIES				
Earth-system process	Parameters	Proposed boundary	Current status	Pre-industrial value
Climate change	(i) Atmospheric carbon dioxide concentration (parts per million by volume)	350	387	280
	(ii) Change in radiative forcing (watts per metre squared)	1	1.5	0
Rate of biodiversity loss	Extinction rate (number of species per million species per year)	10	>100	0.1-1
Nitrogen cycle (part of a boundary with the phosphorus cycle)	Amount of N ₂ removed from the atmosphere for human use (millions of tonnes per year)	35	121	0
Phosphorus cycle (part of a boundary with the nitrogen cycle)	Quantity of P flowing into the oceans (millions of tonnes per year)	11	8.5-9.5	-1
Stratospheric ozone depletion	Concentration of ozone (Dobson unit)	276	283	290
Ocean acidification	Global mean saturation state of aragonite in surface sea water	2.75	2.90	3.44
Global freshwater use	Consumption of freshwater by humans (km ³ per year)	4,000	2,600	415
Change in land use	Percentage of global land cover converted to cropland	15	11.7	Low
Atmospheric aerosol loading	Overall particulate concentration in the atmosphere, on a regional basis		To be determined	
Chemical pollution	For example, amount emitted to, or concentration of persistent organic pollutants, plastics, endocrine disruptors, heavy metals and nuclear waste in, the global environment, or the effects on ecosystem and functioning of Earth system thereof		To be determined	

Boundaries for processes in red have been crossed. Data sources: ref. 10 and supplementary information

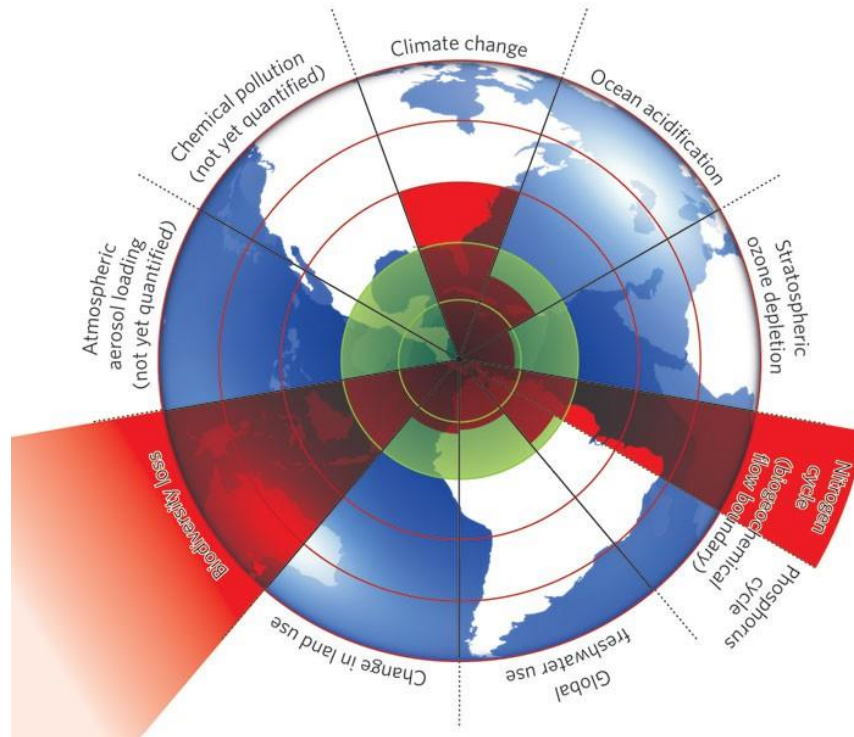


Figure 1 A safe operating space for humanity

Note: The inner green shading represents the proposed safe operating space for nine planetary systems. The red wedges represent an estimate of the current position for each variable. The boundaries in three systems (rate of biodiversity loss, climate change and human interference with the nitrogen cycle), have already been exceeded.

Oxford academic Kate Raworth combined this concept of planetary boundaries with the concept of social boundaries to create the framework of doughnut economics. Doughnut economics challenges modern economic thinking (e.g. using GDP as the main measure of economic development or assuming the rational behaviour of humans) and highlights the need to comprehensively factor in the role of energy and nature's resources (Raworth, 2017). The 'safe and just' space inside the doughnut is conceptualised at a global scale of human activities and planetary boundaries playing off each other; it is this interplay that reflects the biophysical limits of the planet. In reality, the geographical fragmentation of sovereign powers means that any real action must necessarily be conducted at national levels and with significant degrees of partnership. Turner and Wills (2022) laud the doughnut economics model for aggressively confronting the "dominant economic growth paradigm". However, they temper their excitement for the potential invigoration afforded from this new model by highlighting the difficulty of achieving the necessary institutional capabilities and partnerships which would be needed to effectively implement the required strategies.

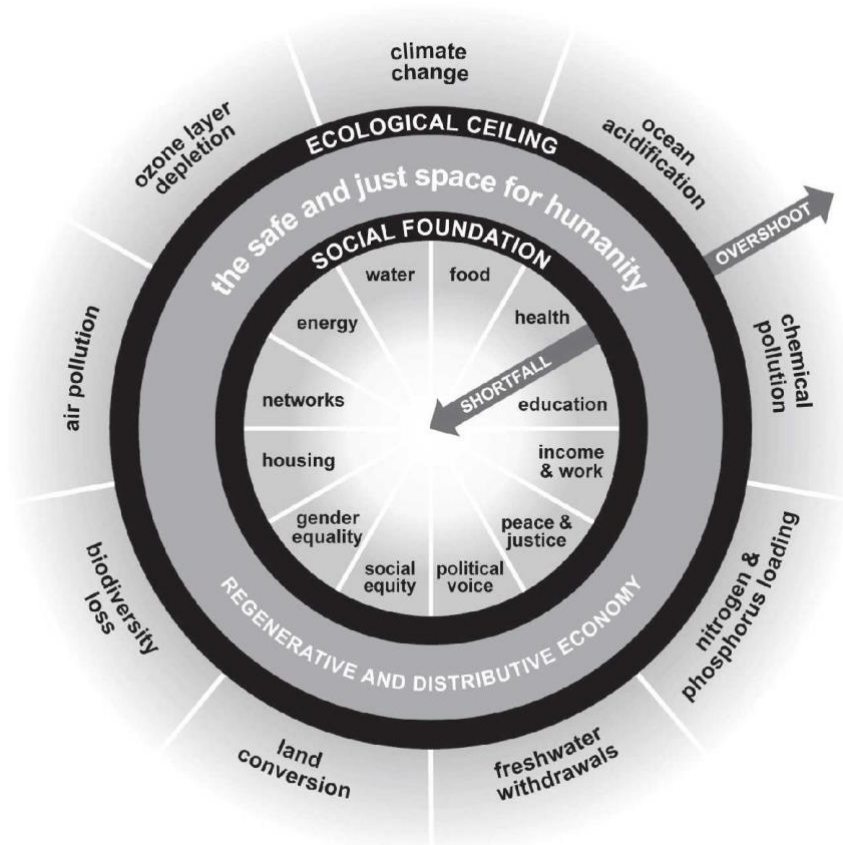


Figure 2 The framework of doughnut economics

Note: The essence of the Doughnut - a social foundation of well-being that no one should fall below, and an ecological ceiling of planetary pressure that we should not go beyond. Between the two lies a safe and just space for all.

Ultimately, it would appear that whichever framework of sustainable development one adopts, there are boundaries of human activities and natural systems which have to contend with each other. Operating within these two boundaries is the ideal sweet spot for humanity’s coexistence with the natural environment while ensuring ongoing capacity to satisfy human needs.

UNDERSTANDING INTERGENERATIONAL EQUITY

Discussions on intergenerational equity tend to focus on the allocation of environmental resources across time. A broader definition includes the justice component, which includes “procedural, restorative, and retributive dimensions” (UN, 2013). Even though fairness between generations is not commonly discussed, it is a fairly accepted idea and is a natural element of sustainable development.

A “collectivist” view that has recently gained prominence since the social impacts of the pandemic holds that custodian generations are bound by a moral duty to preserve the socio-environmental endowments for successive generations since they are merely transient custodians of common goods, bound by a commonality in culture, values and occupation of geographic lands.

The “equity” part of intergenerational equity typically considers 3 aspects (Weiss, Edith Brown; UN University, 1992):

- Access: current generations should have a right to the socio-environmental endowments of present times and also preserve this access for future generations.
- Quality: current generations should strive to maintain the quality of the planet for successive generations so that the latter can enjoy at least a similar level of quality in the natural and built environments they inherit.
- Options: current generations should maintain socio-environmental diversity so that future generations may have access to the same diversity of social and environmental endowments.

To understand intergenerational equity in the context of sustainability, it is important to consider the particularly unusual attributes that define it and bring unique challenges to the sustainability ambition. Gosseries and Meyer (2009) observe that the idea of any obligations between generations is challenged by some of these attributes. Future persons are not in existence today. The non-existence challenge therefore questions how anything can be owed to entities that do not exist. In other words, deceased persons and persons not yet alive cannot be considered for the benefits of any obligations. Meyer (2021) explores this further by discussing the right to non-existence and asks whether “Can prospective children be said to have an interest that their parents not act in a way likely to lead to their birth when the parents are in a position to know that the life of the child, should it be born, would fall below some relevant threshold of well-being?”. The notion of an “asymmetry of our procreational duties” is invoked in Meyer’s thinking. This notion contemplates the following confounding issue: while prospective parents have no obligation to procreate out of regard for the interests of possible future children, they have an obligation not to beget children who are going to be miserable (Meyer, 2021). In other words, there should at least be some leaning towards a deliberate consideration for the prospective welfare of future offspring.

THE ROLE OF YOUTH IN SUSTAINABLE DEVELOPMENT

Before discussing the role of the youth in sustainability intergenerational equity, let us understand who the “youth” are. There is no consensus definition for “youth”. The United Nations defines “youth” for statistical purposes as those persons between the ages of 15 and 24 years. It is noteworthy, however, that Article 1 of the United Nations Convention on the Rights of the Child defines ‘children’ as persons up to the age of 18 (United Nations 2018). There is therefore an overlap for those aged 15–18 who are children, older adolescents and youth. However, Plan International note in their publication “What’s the evidence?” that age is not the sole determinant of youth. In fact, in numerous societies “...it is a period of transition in the life cycle—a period when young people take on greater financial, family and communal responsibilities. But, youth are not simply adults in the making; rather it is a time in a person’s life cycle when they have specific roles, rights, needs and capabilities...” (Plan international, 2018).

For the youth to have a reasonable impact on sustainable development efforts, there must be some degree of “empowerment”. Even though the term “youth empowerment” has assumed somewhat of a cliché status, it is in fact in the category of clichés that deserves its high-profile usage.

The United Nations Human Settlements Program (UNCHS-Habitat 2007) defines youth empowerment as “the circumstances and factors which enhance the development of citizenship and productiveness among young people as they move into adulthood. It is concerned with the adaptation of government structures

and institutions to protect and deliver children's youth safety and human rights, including the right to participation". If youth of a nation is left untrained and unmotivated, the nation could suffer significant socio-economic losses over a prolonged period. The need to empower the youth is therefore not only common sense from a socio-economic perspective, but also a competitive advantage if harnessed properly as it can foster and boost development prospects of a nation. Sawshilya points out that although youth is the most powerful asset for nations, if this asset is not properly managed it can in fact become a difficult problem. The author notes rather poignantly that empowerment refers to "proper guidance including proper values, rational thinking, and decision-making process and leading a satisfactory life. Society today needs empowered youth in all aspects..." (Sawshilya 2018).

As the importance of intergenerational relationships has become more formally defined and recognized as a key to sustainable development, the policy challenges have also become clear, especially for young leaders or youth with leadership aspirations. Some questions for their consideration include the following:

1. If previous generations have not considered or appropriately factored in future obligations, then why should young leaders of the present be obliged to make considerations for future generations?
2. How far forward or backward should young leaders of the present extend their consideration of intergenerational obligations (5 or 100 years for instance)?
3. What criteria should young leaders use to balance the needs of current and future generations, if indeed they even consider future generations in decision-making processes?

KINGDOM OF SAUDI ARABIA CONTEXT

Saudi Arabia is endowed with minerals, oil, gas, key raw materials for manufacturing and industrial development. It has the largest mineral deposits in the Middle East; in the western region there are significant sources of precious and basic minerals such as gold, silver, copper, zinc, chromium, manganese, tungsten, lead, tin, Aluminium and iron (Industrial Centre, 2023).

Saudi Arabia has articulated its vision of a sustainable future through Saudi Vision 2030 which is underpinned by 3 pillars of an ambitious social agenda, a thriving economy and healthy living of vibrant communities. The sustainability agenda forms a key part of these pillars and includes greener cities, sustainable energy investments, and significant land protection initiatives.

Assessing the level of sustainability consciousness and action of a particular society requires an understanding of the awareness and governance processes in place.

For a long time, there has been an awareness of specific socio-environmental areas of attention in the Kingdom. These include air quality management, water resource planning, sustainable energy planning, marine pollution and waste management. Specifically, awareness of "...air quality deterioration in urban areas; high energy demand and consumption due to regional population growth and economic development; concerns about safe drinking water supplies due to a scarcity of fresh water; air quality deterioration, industrial pollution, waste management, and pollution in coastal areas; and subsequent stress on marine ecosystems..." have been raised as socio-environmental challenges of Saudi Arabia (Husain and Khalil, 2013).

In terms of governance, environment protection has been adopted into the Basic Law of Governance (Article 32) which states, "The State shall work towards the preservation, protection and improvement of the environment". Further to that, the Ministry of Environment, Water and Agriculture (Ministry of Environment Water & Agriculture, 2019) points out that many of the natural resources used in Saudi Arabia

as part of the development agenda are non-renewable and therefore their consumption promulgates their depletion. It notes that this is "...especially applicable to energy and water resources and raw materials..."

In its *Executive Summary for the Council of Economic and Development Affairs*, MEWA emphasises the need for a national environment strategy due to the relatively slower response of the national environmental apparatus in the face of remarkable growth in GDP and population (Ministry of Environment Water & Agriculture, 2017). The framework of the national environmental strategy includes the conservation of resources and ecosystems as one of three objectives under the environmental sustainability pillar. Additionally, the Public Investment Fund (PIF) program has been created to power the diversification of Saudi Arabia's economy and the development of specific strategic investments.

SUSTAINABLE DEVELOPMENT GOALS AND THE KINGDOM

The Sustainable Development Goals (SDGs) are the international community's definition of a global and comprehensive sustainable development agenda, and they include both social objectives and environmental goals. They aim to promote a more sustainable future by addressing global issues such as climate change, poverty, inequality, environmental degradation, and justice. They are considered the leading global platform for fostering collaboration to address these issues because they have been formulated as a collection effort involving various an important combination of stakeholders, including governments, corporations and civil society.

The Saudi Arabia government has attached extreme importance to the SDGs, with the Ministry of Economy and Planning (MEP) essentially being mandated with the responsibility of coordinating with relevant government and other entities on SDG goals. In addition, MEP assigns tasks to government agencies to track and monitor the goals that fall within their jurisdictions.

SUSTAINABLE DEVELOPMENT AGENDA FOR YOUNG SAUDI ARABIA

According to the General Authority for Statistics (GASTAT), Saudi Arabia has a particularly young population compared to other countries in the world, with over 60% of the population under the age of 35 (GASTAT, 2020). Although the population is a young one, the percent of people aged above 60 ("younger old") is rising fast and projected to rise particularly quickly between now and 2050. The population above 80 ("older old") is also expected to be among the quickest growing populations groups by 2050.

The expected steep increase in number of older people will have implications for Saudi Arabia in general, and particularly for the younger generations. The percent of people above 60 years of age is expected to surge to about 25% of overall population by 2050, compared to nearly 7% in 2020 (Abusaaq, 2015).

What does this mean for the youth of Saudi Arabia in terms of sustainable development? First of all, with a particularly young population, it will be difficult to ignore the impact of youth on sustainable development. It also means that the youth will be tasked with developing innovative solutions on a more formal basis in order to champion the sustainable development agenda. Saudi Vision 2030 offers a robust platform to channel such innovative energy. Essentially, the youth of Saudi Arabia will be involved in developing sustainable development solutions in 3 key areas:

- **FUTURE ECONOMIC RESILIENCE:** at the core of Saudi Vision 2030 are the twin objectives of reducing oil dependency and diversifying the economy. This has resulted in the introduction of new economic and policy measures. As the country aims to increase public investment in economic diversification, there will be more pressure on the youth to find ways of increasing the share of non-oil GDP, to leverage Saudi Arabia’s renewable energy potential and to ensure ongoing usage of clean hydrocarbon resources.
- **GROWING DEPENDENCY BURDEN:** the number of people that will need economic support from the economically active young population is expected to increase. This will be a burden on the economy and on social dynamics. For instance, we can expect a negative impact on economic activity, savings, consumption, and pensions. Also, we can expect greater numbers of the “older old” population to experience further health deterioration. This will place more pressure on Saudi Arabia’s younger population to generate more sustainable socio-economic initiatives to manage these growing dependency issues.
- **CARING NEEDS:** populations of both older brackets (60 - 79 and 80 plus) are expected to be some of the quickest growing populations. This suggests that more people in the “younger old” group will become responsible for looking after more family members in the “older old” group. This may contribute to competition for resources among family members, and increase the need for development solutions that avoid intergenerational conflicts.

CONCLUSION

As the population makeup of Saudi Arabia is expected to change significantly over the next 25 years, it is clear that there will be huge implications on intergenerational relationships. The current generation is tasked with managing hydrocarbon resources and conserving environmental endowments for future generations. Additionally, the economically active current population has tasked itself with initiating significant policy programs to increase the resilience of future Saudi generations. These initiatives include the introduction of VAT, diversification investments and the creation of renewable energy plans. Given the rich cultural endowments as the centre of Islam and the resource wealth in hydrocarbons, young leaders also have to consider what the efficient and proportionate use of resources will mean economically and socially to future Saudis’ capability to maintain this rich cultural and resource heritage.

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