Zero hunger, sustainable cities and responsible consumption

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 11: Make cities inclusive, safe, resilient and sustainable

SDG 12: Ensure sustainable consumption and production patterns

Image by World Bank, Flickr

African urbanisation: trends and prospects

The next two to three decades will define Africa's urban transition, not least because of the massive expansion in the number of people living in these cities. Africa and Asia are the two most populous world regions, and the least urbanised. While all regions globally are expected to urbanise further over the coming decades, Africa and Asia are urbanising faster than the other regions, and by 2050 are projected to become 56% and 64% urban, respectively. African urbanism will be increasingly on the global development agenda, specifically in light of the urban sustainable development goal (SDG) and the New Urban Agenda (Habitat 3), write Edgar Pieterse, Sue Parnell and Gareth Haysom.

Differential urbanisation trends in Africa

While it is important to have a uniquely African perspective within the global debate on the New Urban Agenda, it is essential to acknowledge the diversity of African urbanisms. There is enormous variation in the levels and rates of urbanisation across the continent. Importantly, while much of the policy attention in the past has focused on Africa's primary cities, much of the continent's urbanisation is taking place in smaller, secondary cities.

As the role of the urban in African development is contemplated, there are four key issues that must be considered.

The youth bulge: Fifty percent of Africa's population is presently younger than 19. This youthful population points to continued population growth until the end of this century. The 'youth bulge' means that Africa's labour force will probably treble between 2000 and 2050. However, at present, just 28% of the labour is in stable, wage-earning jobs. How will all of the new entrants into the labour market be absorbed into stable jobs if the current economic growth path is not altered radically?

Access to infrastructure: African cities are characterised by poor infrastructure, coupled with under-capacitated natural resource management. This puts poor urban populations at risk, not just in terms of major events associated with climate change, but also everyday exposure to air, water and soil pollutants.

Despite recent positive economic growth in Africa, the limited infrastructural footprint presents a binding constraint to continued and high growth. The deficit in

infrastructure capacity, combined with acute financing challenges, create significant prioritisation pressures. African countries will have to find innovative solutions to ensure that the basic needs of their citizens are met, while creating the infrastructural platforms for growth.

The scale/governance disconnect: Due to the predominance of informal economic life, combined with thin local institutional systems, the tax base for urban investment is inadequate to meet the vast needs of cities. National governments perceive these conditions as justification for the continued national control and management of urban areas. The net effect is that there is no coherent strategy or investment programme to address urban management imperatives across the diverse needs of the national settlement/urban system.

The economy: There is a need to promote an Africa-focused development agenda amid the series of interlocking dynamics of distorted urbanisation across Africa, which have their roots in both colonial economic policy and structural adjustment policies. Currently, most African countries focus economic policy on gross domestic product (GDP) growth, even if this does not generate large numbers of new jobs or is environmentally damaging. A narrow fixation on GDP growth undermines long-term development ambitions. Inclusive growth points to the imperative of establishing economic growth trajectories that are highly labour-absorptive, and afford access to decent work.

The African urban agenda

For most African countries, development challenges are great, because national economies tend to be small and are inserted into global value chains under adverse conditions. Furthermore, these economies are often overly reliant on a single commodity, which places the national fiscus at continual risk. Therefore it is vital that African governments and citizens debate how these structural obstacles can be overcome in the context of a commitment to greater regionalism, intra-regional trade, and endogenous industrialisation to supply the goods and services of the domestic populations. Cities can kick-start these debates.

One pathway is a focus on resilient growth, in which the green economy is viewed as the necessary gateway to a low-carbon and resource-efficient future. This requires changes in the nature of production and consumption so as to radically reduce the harmful emissions associated with the current economic system, and to delink each unit of economic output from non-renewable resource inputs. Embracing a resilience-oriented growth path

is a tough requirement for African economies that are predominantly reliant on extractive industries for trade and foreign exchange. Yet, as the world moves towards a global carbon-trading and -taxation regime, and more stringent environmental standards linked to trade agreements, economic competitiveness will depend on getting this right. Africa's advantage in the new post-2015 focus on resilience is that the relatively low levels of economic development mean that these systems are not yet locked into unsustainable pathways. There is therefore an unprecedented opportunity to use the imperative to build massive infrastructures in African cities and regions as a catalyst for embedding the green economy.

This opportunity, however, requires new ways of thinking that challenge the logic of the established northern model of urbanism as an ideal for African cities to aspire to.

Neither inclusive nor resilient growth is possible if Africa's human potential remains untapped and underinvested. Education and health are the two most important drivers of human capital formation, along with social safety nets, as the economy of a country expands. The skills and knowledge of the urban workforce are a central determinant of the dynamism and long-term durability of growth.

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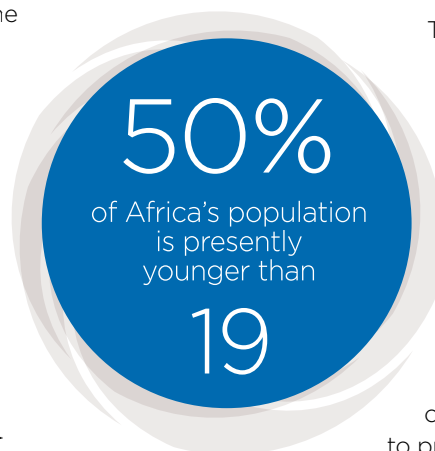
Those who live in and manage African cities need to drive the global conversation about what sustainable urban development means in practice. Furthermore, the real-life innovations to achieve sustainable urbanism will come from the ground and cascade upwards. Technocratic top-down programmes and solutions will not work, because each city and town is unique and will need to draw on the collective resources of all actors affected to produce fit-for-purpose reforms. However, local innovations become a lot easier if there is a coherent and high-profile national programme of action to drive systematic urban transformation.

The ideals of good governance, democracy, respect for human rights, justice and the rule of law must be forged in the hurly-burly of Africa's cities, otherwise they will never take root. It is in these settings that the new, youthful interpretation of Africa's cultural identity, common heritage, values and ethics will be made manifest through art, culture and media. ⊙

Professors Edgar Pieterse and Sue Parnell and Dr Gareth Haysom are researchers at the African Centre for Cities (ACC). Professor Pieterse is the DST/NRF SARChI Chair in urban policy and director of the ACC. Image of Kumasi Market in Accra, Ghana by Lattitude Canada, Wikimedia Commons.

Three ways to encourage affordable housing in the inner city

The need for affordable housing in Cape Town's inner city is hard to overstate. Right now, the city's lowest income group spends roughly two hours a day and at least 15% of their monthly salary **on getting to and from work. In other words, the people who can least afford it are the same ones who have to travel the furthest and pay the most to get to their workplaces.**

A new paper produced by the Department of Construction Economics and Management identifies the challenges presented by the lack of affordable housing in Cape Town's city centre – and some possible solutions.

"Right now, there's a significant backlog in the supply of units," explains researcher and land economist Robert McGaffin. "Apartheid planning resulted in fragmented and sprawling cities, and in Cape Town this is exacerbated by the fact that land close to the city centre is particularly expensive."

So what can be done to encourage the development of more affordable housing in the inner city?

McGaffin, along with co-authors Francois Viruly, Mark William Massyn and Nicole Hopkins, argue in their 2015 paper that development costs such as land acquisition,

construction costs, financing and marketing must be balanced by the need to create a product that is truly affordable to a lower- to mid-income market. According to the paper, both realistic economic factors and policy changes have a part to play in increasing the viability of affordable housing.

Greater density

Increasing the height of buildings and dividing developments into smaller units can help improve the ratio between development costs and profitablity for property developers, while still keeping housing affordable.

"There is a perception that South Africans are unwilling to consider smaller living spaces; but I think the

phenomenon of backyard dwellings, in which people are willing to pay for cramped accommodation because it is well located, shows that is not the case," McGaffin says. "In places like inner-city Joburg, the private sector is renting out 15m² spaces, at a rate of 98% occupancy."

Less onerous buildings standards

According to McGaffin, the cumulative effect of very stringent building standards has been underestimated as a stumbling block to affordable development.

"Obviously it's very important for standards to be in place when it comes to human habitation; but a balance has to be struck between making buildings safe to live in and making them affordable. Otherwise, a few will get to live in safe spaces, while those who can't afford it will be forced to live in dangerous buildings. If it's just a case of red tape, then simplifying these standards could have a positive effective on the viability of affordable developments," he says.

Use of existing building stock

Repurposing existing stock into low-cost housing would allow significant savings to be passed on to lower-income households. "We have a habit, locally, of using the most expensive type of development

method, namely new builds, to try and cater for the lowest income segment of the market," McGaffin says. As the paper puts it, "Not only are existing buildings cheaper, but they also make up the bulk of the built stock in the city, and therefore represent the best opportunity to deliver affordable housing at scale."

How does McGaffin see the situation changing in the future?

"I'm quite positive," he says. "I think a lot of the suggestions in the paper are things that are already starting to happen.

"Also, the good news about a slowing economy is the fact that it can put the brakes on property prices. I think in the next several years we will see a slowing of the commercial market, and this may free up some already existing stock to be repurposed into affordable housing."

By Ambre Nicolson. Main image by ign11, Flickr. Image (above) by Pixabay.

Embedded research offers young researcher greater insight

City officials are sometimes so close to what they're doing, they can't see the wood for the trees; while academics work in a theoretical world, where it is easy to lose sight of the practicalities on the ground.

To bridge the divide between the academy and practice, four UCT researchers spent three years (from 2012 to 2015) 'embedded' within city council departments, to observe how policy is developed and implemented. Robert McGaffin, Anna Taylor, Saul Roux and Anton Cartwright – all linked to the African Centre for Cities (ACC) – took part in this knowledge transfer project sponsored by Mistra Urban Futures (MUF).

Robert McGaffin focused on the city's space economy within the Spatial Planning and Urban Development Department. He noted that while city officials were closer to the ground and understood what the priorities were, academics could help define the problem, to reach a better understanding of the underlying causes.

Anna Taylor looked at climate-related risks in the Environmental Resource Management Department and the Stormwater Sustainability Branch. She praised this 'embedded' model of research." The conversations that (we) had definitely hugely enriched my understanding of some of these policy and academic ideas – I suddenly saw them through different lenses."

Saul Roux focused on urban energy governance in the Energy and Climate Change Unit. He said one of the benefits of the project was that value was added by sharing research interests across different disciplines.

Anton Cartwright, whose project focused on the green economy, said the ideas he worked with throughout the three years were ways the green economy could be linked to economic theory and then translated into budget. "Someone said to me, if you don't exist in the budget, you don't exist in the City," he observed.

Read the full story here.

Governing safer cities in a globalised world

How does Cape Town mayor Patricia de Lille, with the resources of a medium-sized South African city, take on – for example – the Chinese mafia, who are flooding Cape Town with drugs in exchange for illegally harvested abalone? The impact is greater drug use, violence and exclusion among the city's poorest and most marginalised residents.

De Lille is not alone in having to tackle global criminal networks within a local context, and seeking to forge better cooperation with national government: illicit flows of goods and people, and the criminal networks that accompany those flows, are increasingly interwoven with local vulnerabilities in cities around the world. City governments are often faced with insecurity derived from global flows – and face serious challenges in responding to them.

Violence and criminality in cities manifests in multiple ways. It does not always start with criminal gangs; but often, with a growing proliferation in non-statutory security forces such as private security companies, or political-party militias. These forces usually develop from the margins: from populations neglected by the state. But once these groups have established a control over a given territory, they need to find the means to sustain and commodify it. This opens the space for local groups to start making contact with global criminal networks, to cash in on global illicit flows. These include the flow of weapons, drugs, humans, and even environmental products such as rhino horn and abalone.

These criminal networks undermine human development, good governance and the life chances of the people who live in the affected cities.

Making cities safe

United Nations (UN) sustainable development goal 11 seeks to make cities inclusive, safe, resilient and sustainable; to this end, the UN Office on Drugs and Crime (UNODC) tasked the Centre for Criminology to develop a framework to guide policymakers on how to build safer cities in a globalised world. This report,

Failure of regulation in the taxi industry

The high level of violence in the taxi industry is an excellent example of failure of regulation by the state. The taxi industry in South Africa is essentially a mafia organisation that regulates itself through violence. According to Shaw, the majority of criminal assassinations in South Africa are related to the taxi industry.

which pulls together research from 10 cities from around the world, argues that the global flow of ideas, illicit products and other commodities has an enormous impact on the security of cities. In order to respond to this global challenge, policymakers first need to understand the ecosystem of these global flows and how they interconnect with the local situation; and then respond strategically and holistically, through a safety governance approach.

"Cities that fail will mean a global community that fails," reads the opening paragraph of the report. Currently, more than 54% of the world's population live in cities, and urban populations are expected to grow at a rate of 1.5% to 2.0% a year. What this means in practice is that unsafe cities will constrain the life chances of millions of people around the world, says Professor Mark Shaw, director of the Centre for Criminology and DST/NRF SARChIChair in Security and Justice, who led this research project. But law enforcement strategies alone will not ensure the safety of those cities. Instead, Shaw stresses inclusion as the central concept.

Including marginalised groups

"It is those same people who are disconnected from the global economy who are most likely to be linked to its dystopian side. Law-enforcement interventions will only exclude them further," says Shaw. The core challenge then for cities is to ensure, through spatial planning, the provision of services and a constant process of engagement, so that all citizens of a society are drawn as far as possible into its benefits.

Organised crime groups cannot easily take root in areas where governance is strong and society is robust; but where the state is weak or absent, the space is opened up for criminal groups to gain traction.

When these criminal networks fill the space left by weak governance, local communities and individuals may come to view them as an alternative to legitimate government. When this happens, the criminal networks generate legitimacy and loyalty from the local population. In these cases, use of force may well exacerbate violence and further alienate affected communities from the legitimate state and broader society.

Safety governance

The safety governance approach, proposed in the report, thus seeks to enhance the well-being of people and communities through appropriate management and allocation of resources across a city. The proposed approach encapsulates better regulation of legal activities in which criminal activities often take hold, such as in bars, nightclubs and hotels (for sex trafficking); better community-driven law enforcement, which upholds human rights and the rule of law; greater engagement by city officials with all groups in society; and innovative thinking by policymakers, to reduce vulnerability and build resilience within the fragile communities of a city. The result of the safety governance approach is that all members of society benefit from the economic and social development of a city. ○

By Natalie Simon. Image by Deutsche Gesellschaft für Internationale Zusammenarbeit, Violence and Crime Prevention.

> "It is those same people who are disconnected from the global economy who are most likely to be linked to its dystopian side. Law-enforcement interventions will only exclude them further."

The consolidation of criminal networks

Homicide rates are a key indicator of levels of violence in a society, and can be used to measure the extent to which criminal groups are consolidating power.

Cape Town has a very high murder rate, 65 per 100 000 people (compared to Johannesburg's 33 per 100 000 and Tshwane's 19), partly because there is a process of consolidation by criminal networks happening in Cape Town. One example is the illegal abalone trade. Chinese triads partner with gangs to trade abalone for tik (a local form of methamphetamine). These partnerships are maintained with a high degree of violence as gangs compete for turf.

One way in which the Centre for Criminology monitors this consolidation is through the media. A local newspaper may run a small story on two people being shot dead in a small town on the west coast; but researchers will recognise the killing of a gang-leader or middle-level player as part of a greater war.

Governing food systems to alleviate urban food insecurity

As Africa urbanises and the locus of poverty shifts to urban centres, there is an imperative to address poverty and its associated problem – urban food insecurity – in African cities. The global development agenda is increasingly focusing on urban issues; most notably, the urban goal of the new sustainable development goals (SDGs) and their New Urban Agenda. Despite the centrality of food to the health and well-being of urban residents, and the role of the food system in the local economy, there has been relatively little research on urban food security or urban food systems in the African context. There has also been little attention paid to the governance of the urban food system to the ends of alleviating urban poverty, and to the role of urban planning in achieving this, write Jane Battersby and Gareth Haysom.

The food research cluster at the African Centre for Cities (ACC), consisting of three urban food-focused projects (AFSUN, Consuming Urban Poverty, and the Hungry Cities Partnership), seeks to address these gaps. Since 2008, the food cluster has sought to contribute to academic knowledge and debate on urban food security and food systems. Aligned with the mission of the ACC, the food projects seek "to facilitate critical urban research and policy discourses for the promotion of vibrant, democratic and sustainable urban development in the global south from an African perspective". We therefore focus on generating new knowledge for peer-reviewed academic publications, but also explicitly seek to engage popular debates through media and social engagement, as well as generating policy-relevant documents.

Five key messages have emerged from the work conducted by the ACC's food cluster:

- Food insecurity is not simply a rural problem. It therefore requires policy sensitive to the unique challenges of urban food security, and governance structures that enable local government to respond to food insecurity.

- The nature of food insecurity is shifting rapidly, with overweight status and obesity emerging as new forms of food insecurity, while malnutrition persists. But continental policy responses do not address this changing reality.

- Food insecurity needs to be understood as the outcome of the structure of the food system and the urban system, and therefore requires policy responses that extend beyond household-scale interventions, such as the promotion of urban agriculture.

- Urban food insecurity is also in very large measure attributable to the changing economy in the urban food supply system, i.e. the supermarketisation of food supply, along with the erosion of opportunities for informal and smaller food-supply outlets, which in the past were a major source of supply to poorer households. This requires critical engagement with notions of 'development' in urban areas, which assume modernisation and formalisation with poverty alleviation.

- Important contributions to debates on urbanisation in sub-Saharan Africa, the nature of urban poverty, and the relationship between governance, poverty and the spatial characteristics of cities and towns in the region, can be made through a focus on urban food systems and the dynamics of urban food poverty.

Through working first locally and then scaling up to international policy fora, the researchers in the food cluster have succeeded in embedding these core messages in a number of policy arenas. The team has written a *Food Security and Food Systems Report* for the City of Cape Town and an Urban Food Security Report for the South African Cities Network, engaged in meetings with provincial and national government on food strategies and policies, and contributed to FAO (Food and Agriculture Organisation of the United Nations), UNEP (United Nations Environment Programme) and UN Habitat processes; most notably, working as part of the Expert Group Meeting on Integrating Food into Urban Planning, which then informed the various drafts of the United Nations New Urban Agenda document. ◌

By Drs Jane Battersby and Gareth Haysom, researchers at the African Centre for Cities. Image by Jane Battersby.

The new face of food insecurity

"It's been a long day," thinks Bulelwa Tafeni. It always is. As usual, she got up at 5am to get to her cleaning job in the suburbs on time. As usual, all she had before she left was a cup of coffee with condensed milk. As usual, her elder child took the younger one to the unregistered neighbourhood childcare on her way to school. At least both of them get breakfast at school. But today, as she sits in the minibus taxi waiting for it to fill up before it can go, she is hungry. She'd been hungry when she left work, and that was a bus ride and a taxi ride ago. It'll still take another hour to get home.

It is a week until she gets paid again. On payday, the first thing she does is go to the supermarket near to where she works, to buy bulk non-perishables for the month. The food is cheaper and better quality than the same food near her home, even in the supermarket that has just opened up. She would also buy meat and fresh produce, but she doesn't have refrigeration, or storage space, so it would go to waste. She has to pay for a second taxi seat for all the food, but that's OK. But now, as usual, the food has run out, and money is scarce. She has cut down on the range and quality of the food she feeds the family, she has reduced meal sizes. Now is the hungry time.

Bulelwa Tafeni is not a real person; but she represents the new face of food insecurity – a problem that is increasing rapidly in urban areas.

Southern African tourism: the 'multiplier' effect

For every night that a tourist stays over at a high-end game lodge in a remote part of southern Africa, 14 people in the surrounding community benefit indirectly from the income generated by the services offered by the industry. As lodge staff send their remittances back home, the money circulates within these rural communities, helping to grow the local economy.

This is the finding of Dr Sue Snyman, a tourism analyst and economist associated with UCT's Environmental Policy Research Unit (EPRU), in the Faculty of Commerce.

"This is the multiplier effect of tourism in remote regions of the subcontinent," explains Snyman, who has published several papers in the past year on the basis of the findings of her 2013 doctoral thesis.

During her doctoral work, in which she surveyed 16 different eco-tourism lodges in six southern African countries, Snyman found that for every one person employed by these lodges, seven people benefit directly from the downstream flow of that income.

"The staff employed in these sorts of ventures help grow the local economy – by spending their wages at community stores where they do their grocery

shopping, for instance," says Snyman. "Or they drive secondary employment through hiring people for childcare, or to tend their livestock while they work. Or they're sending their children to school."

The survey, conducted in South Africa, Botswana, Namibia, Zambia, Zimbabwe and Malawi, found that staff were earning, on average, US$278 dollars per month – which flowed to direct dependents, but then also continued to circulate within the local economy, and stimulated other employment opportunities.

Snyman, who works with private tourism operator Wilderness Safaris in various capacities, included some of this organisation's lodges in her surveys.

"If you were to extrapolate the findings from the lodge staff that I interviewed, to encompass all 683 people employed at the places where I did the research, that means that 4 781 people are downstream beneficiaries of those pay cheques."

"This has a huge economic impact. These wages help to build human capital in rural areas where there aren't many other economic opportunities," she says.

However, in terms of the development implications of tourism and its potential to help create educational and economic prospects for these far-flung communities, Snyman maintains that it is still important for civil society organisations, the private sector and government to invest in capacity-building within these communities, so that they can become equal and well-equipped partners in tourism ventures.

This is key, particularly if tourism ventures want to bring local communities into partnership arrangements in running lodges and concessions.

"If we want people to thrive in businesses like this, we need to be sure we don't try to get local communities to run before they can walk. People need to be trained in bookkeeping, management and accounting. They need to understand the industry; for instance that if someone spends US$400 a night, that isn't a clean US$400 profit; expenses need to be covered first."

Individuals hoping to work in the sector need to understand the role of marketing and communication, as well. Snyman's observation is that many development projects in this sector don't invest enough in this sort of capacity-building in their development work.

'Inclusivity': the new 'sustainable tourism'

These downstream benefits of tourism can be measured in clear economic terms, but the social, environmental and political impacts are also key to driving 'inclusive growth' for the rural communities getting involved in tourism.

"The term 'inclusive growth' is a relatively new one in the tourism sector," Snyman explains, maintaining that it has gained traction recently as other terms, such as 'pro-poor', 'responsible tourism' and 'sustainable tourism' have lost their momentum.

"An example of the social benefits would be the improved infrastructure and services that come to an area when, for instance, a new lodge is built. Often, when tourism comes into an area, the roads are upgraded, and mobile phone networks come into the area. Sometimes you even have clinics being built."

Local residents can also benefit from the education that might come as people are trained up in aspects of tourism, such as lodge management or bookkeeping. Others might benefit from the empowerment that comes with being part of joint ventures or becoming tourism operators themselves.

Inclusion from an environmental perspective could be because land is now conserved, and isn't used for mining or agriculture. There might also be a reduction in poaching as communities see the benefit of conservation, meaning animal numbers might improve.

"If water sources inside a park are well-conserved, that can improve water quality outside the park, where communities extract water from rivers, for instance."

Sectors need to work together

But tourism in the Southern African Development Community (SADC) is being held back, largely by failures in other sectors.

"The problems that operators have with travellers' flight schedules, for instance, originate in the transport sector," Snyman argues.

Meanwhile, problems such as poor communications originate in the information and communications technology (ICT) arena; and visitor visa hurdles must be resolved by member countries' home affairs departments. These problems with infrastructure, transport, and visas and customs policies are all inhibiting growth in the sector.

Resolve those, Snyman argues, and tourism across the region will take off, bringing with it the potential to meet some of the region's poverty-alleviation and development challenges. ⊙

By Leonie Joubert, freelance science writer. Images by Wilderness Safaris.

Talk of sustainability is just lip service

Mining creates waste, which causes social and environmental harm, particularly water contamination and air pollution. The consequences are often insidious and the harm becomes obvious only decades later, as with silicosis and acid mine drainage in South Africa, write Hanri Mostert and Cheri Young.

Silicosis, an incurable lung disease caused by the inhalation of dust, is so prevalent that it is classified as a public health issue. Acid mine drainage, caused by the release of sulphuric acid from minerals such as pyrite into the water table, is a leading cause of water pollution.

There is an uneasy relationship between reaping the benefits of extractive activity and assuming responsibility for its consequences. Mining, by its nature, is destructive and waste-producing.

The cost of mitigating the harm – medical treatment or environmental clean-up costs – is likely to be borne by the state, and therefore society. This is apparent, for instance, in the example of the silicosis settlement. About 4 400 mine workers with silicosis may have found some relief in the US$30m settlement of their claims with Anglo American SA and AngloGold Ashanti, but many more have not: thousands of other ill miners are still seeking relief, with an approved class action on the cards.

The interests of promoting society, preserving nature and boosting the economy will always be competing. Environmental destruction in the name of economic and social development seems inevitable; conversely, environmental preservation will impede societal and economic development.

The magnitude of the task of balancing these interests makes calls for 'sustainable' mining seem like empty rhetoric. Still, it is beyond argument that the sustainable use of natural resources will contribute to the longevity and prosperity of the human race.

Sustainability has increasingly appeared in legal frameworks around the globe. The notion of 'sustainable development' has been catapulted into mainstream thinking, and has become integral to business strategies. But frequent talk of sustainability, particularly in the business sector, may feed the belief that its tenets are being realised. They are not.

We can make forecasts about the future, particularly in respect of economic gains, but we cannot predict with any certainty the true extent of the environmental and social damage. This means the creators of regulatory frameworks for extractive activity must be aware that environmental and social harms may present long after operations have ceased. Regulatory intervention is necessary, but not sufficient. A multifaceted approach is needed. This is particularly evident when dealing with mining waste. How we achieve optimal sustainability depends on the variables of the time, and thus our approach to sustainability needs to be adaptive. Mine waste – dust and water contamination – is an issue that will eventually affect all of us.

It is time for society to choose the best response to these man-made problems. It is time for us all to take responsibility. ⚬

Professor Hanri Mostert is the DST/NRF South African Research Chair for Mineral Law in Africa; Dr Cheri Young is a lecturer in the Department of Private Law. This story was first published in Business Day Live. Image by Daylin Paul, Sunday Times.