UNSW SYDNEY

UNITED NATIONS DEVELOPMENT COORDINATION OFFICE
ASIA AND THE PACIFIC

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GLOBAL SUSTAINABLE DEVELOPMENT CONGRESS

The last urban migration:

What do we measure and for whom?

Times Higher Education Global Sustainable Development Congress

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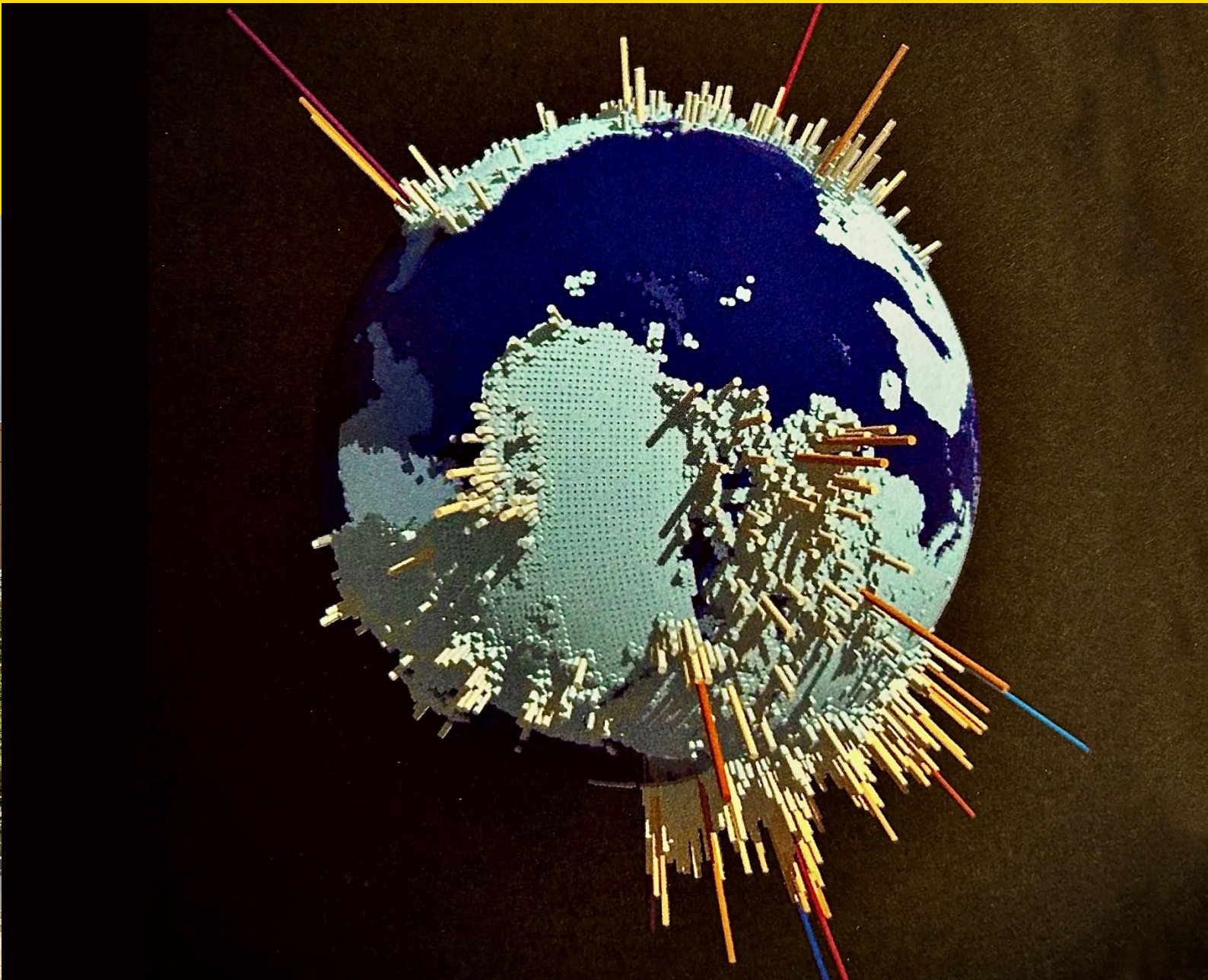

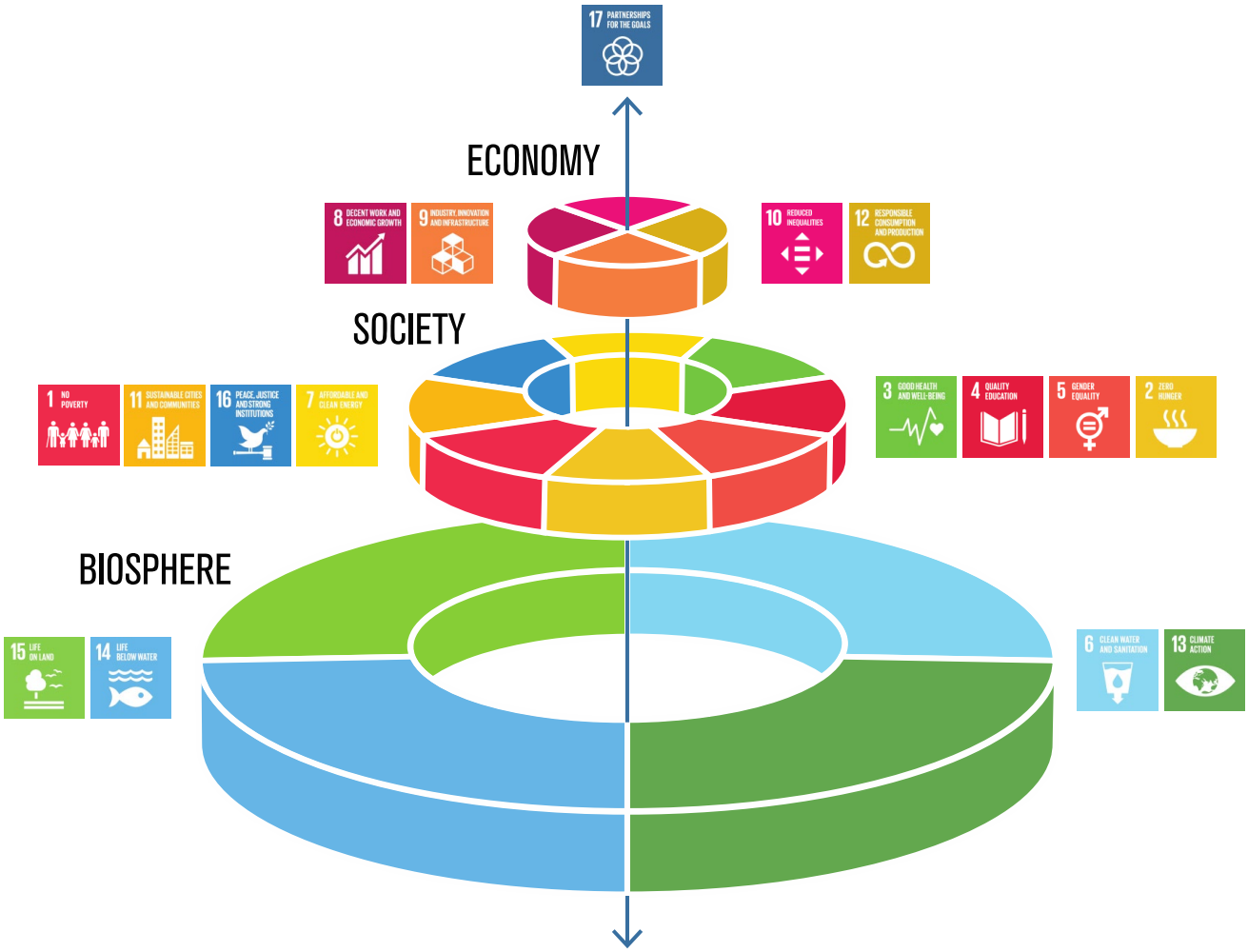

Figure 1 Environmental systems and functions are essential to supporting subsequent societal and economical SDG aspirations (Stockholm Resilience Centre, 2016).

Universities play a critical role in accompanying change and progress as creators and disseminators of knowledge and as drivers of innovation.

Alongside government and industry, universities also contribute significantly to economic development and societal wellbeing. As the global community begins to look to a post-Sustainable Development Goals agenda, universities must now be at the vanguard of those considering diverse world views of change and progress.

As a global research-centred knowledge resource, UNSW is committed to strategic accompaniment with key partners such as the United Nations (UN), and other multilateral and regional organisations to support community- determined outcomes in the Asia-Pacific region. These partnerships, alongside government and industry, seek to provide practical support and solutions for resilience to some of the most divisive contemporary global sustainability challenges such as climate change exacerbated displacement; environmental and health issues in small island developing states; water, energy, food security; and coastal/marine adaptation. Emphasising a community-centred approach, UNSW research and training partnerships place community capabilities and dignity at the centre, while also acknowledging contextual factors that cause vulnerability.

Since 2022, UNSW has adopted a whole-of- institution approach to support the UN to accelerate sustainable development. In collaboration with the United Nations Development Coordination Office, UNSW has jointly curated and convened interactions in Australia, Thailand, Timor-Leste, Indonesia, Papua New Guinea and Fiji between the UN and academia to pilot knowledge partnerships on development priorities in the Asia Pacific region.

Alongside our partners at the UN, UNSW honours the global effort to achieve the UN Sustainable Development Goals (SDGs) by 2030 and accepts that success will be partial. Notwithstanding the fact that the SDGs have provided a multi-decade framework for collective action on sustainability across the world absent any other, now is the time to consider other orientations of change and progress as they relate to human beings and nature. As a content partner for the Times Higher Education Global Sustainable Development Congress 2024, UNSW is committed to conversations that intentionally provoke self-critical reflections of knowing and encourage new imaginings of how change and progress may be indicated.

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THE LAST URBAN MIGRATION: WHAT DO WE MEASURE AND FOR WHOM?

ABSTRACT

The Asia Pacific region is home to almost half the world's population. External investment and more proactive planning are driving the region's cities to rapidly transition to more technologically complex, dense, multicultural and innovative economies and communities. Migration has often been conceptualised as having a certain permanence – in logics, demographics and crises. But the rapid transitions in our region (social, demographic, age etc.) put additional and unforeseen pressures on the shape and nature of our booming cities.

There is an urgency around enabling city systems in the APAC to transition at pace to respond to significant stressors for the wellbeing of the planet and its inhabitants. Our cities will need measures that are new and encompassing of emerging, global and local paradigms, for intergenerational equity.

The scale of climate impacts, number of people at risk and economic forces in the region, significantly due to demographics, are unique and pressing. There will inevitably be the need for decisions and trade-offs about how we understand indicators of change in a transparent and fair way.

WORKSHOP DESCRIPTION

UNSW is hosting a 90-minute Workshop to understand the trade-offs of key challenges and open a conversation about how cities transition. The event will unite scholars from across UNSW and its partners with grassroots experts and global multilateral organisations and will be convened by the UNSW Cities Institute, with a leadership team grounded in urban practice and policy.

In the Pacific, current SDG progress is not on track to achieve any of the SDGs by 2030 with major progress needed across all environmental, societal, and economical realms. Progress towards each of the SDGs should not come at the expense of the others. Adding further complexity, new methodologies to meet recent national targets for net zero greenhouse gas emissions under the 2050 Paris Agreement are now also being developed.

The workshop will draw on ongoing collaborations in the Pacific as well as draw on wider good practice to showcase key emblematic issues that researchers from UNSW and our partner institutions are grappling with: climate behaviour, risk and stress, urban migration (both in developing and developed contexts) and wellbeing. These issues will be reflected on through the frames of:

- **How we measure progress in APAC cities**: The region will need measures that are specific to context and place given traditional measures are not encompassing and at times exclusive. This is because of the scale of climate impacts in the region, the numbers of people at risk and the spectacular financial and economic opportunities on offer in the region, in part due to demographics.
- **How we facilitate long term intergenerational equity through multiple knowledge systems:** The region can learn from multiple knowledge systems, understanding that in places with long-standing or Indigenous populations, sustainability for intergenerationality is built into the ways of knowing (ontology), being (epistemology) and doing (axiology).

AIMS AND OBJECTIVES

The Pacific is at the forefront on both the call for increased ambition to address anthropogenic climate change as well as its ultimate and irreversible impact, forced migration. By bringing together a different configuration of knowledge, both in research excellence and in the connection between research, policy and practice, the intended outcomes of the workshop are to:

- elicit priorities and indicators of change for APAC cities who face a growing climate adaptation emergency and intergenerational inequalities.
- identify questions and measures for sustainable cities and communities in our region to support city and regional governments and businesses to drive adaptive, inclusive and regenerative practice.
- ignite a community of practice for change making in our region, connecting research to policy and practice to impact.

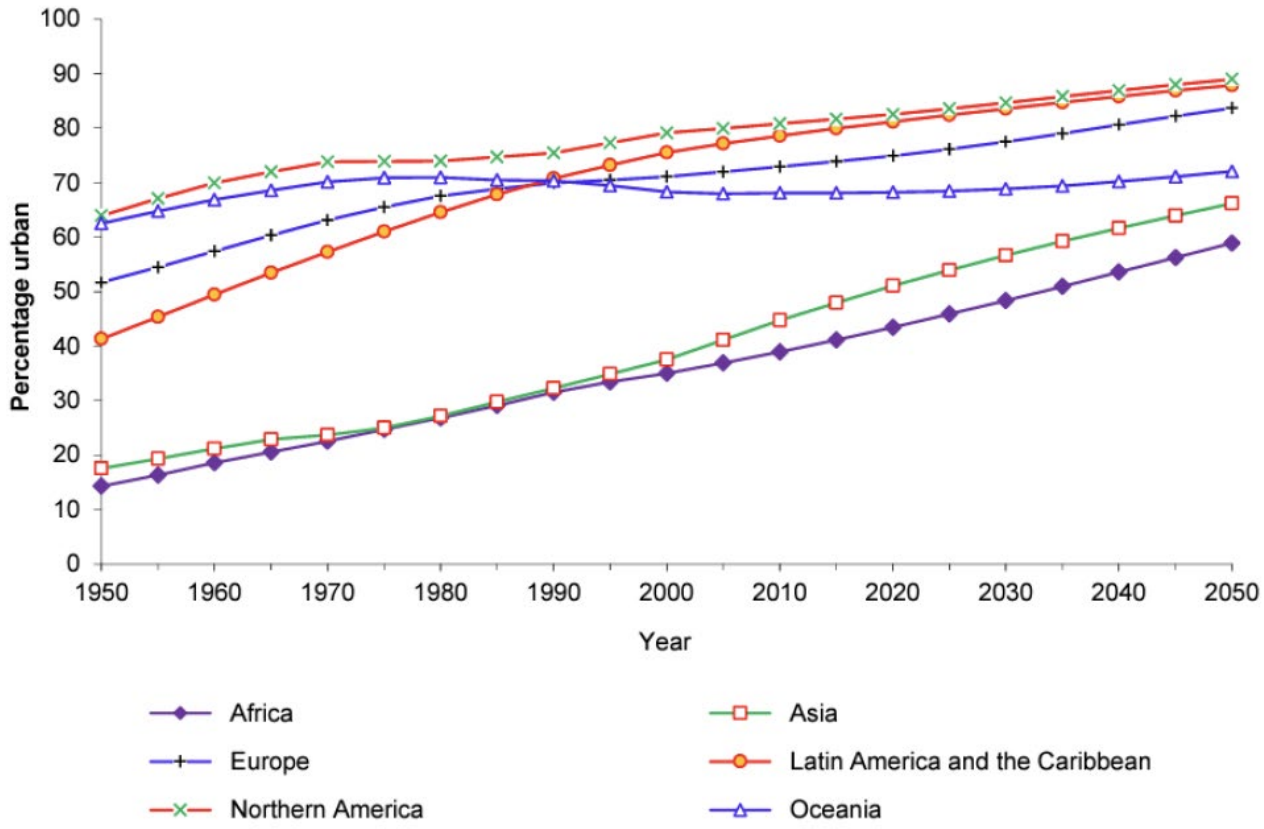

Figure 2 Percentage of population residing in urban areas by geographic region, 1950-2050 (World Urbanisation Prospects: The 2018 Revision)

FRAMING

THE LAST URBAN MIGRATION

Professor Peter Poulet, *Director UNSW Cities Institute*

Hannah Bolitho, Manager Strategy UNSW Cities Institute

For millennia, cities have been incubators of culture and civilisation. Crowded, complex and rich in humanity, they have driven prosperity, inspired innovation and are constantly being re-shaped by economic, demographic and climate stressors. It is estimated that by 2050, more than two thirds of the global population will seek to build their lives in cities, but pressing social, environmental and economic crises, headlined by the global climate emergency and political unrest, are contributing to rising inequality and increasing tensions in these urban centres.

The last urban migration is happening here and now. The APAC is the fastest growing region, with seventeen mega cities, some highly advanced and prosperous and others with significant migrations pressures from rural and remote populations driven by any number of factors: from climate change to economic opportunity.

Responding to these challenges will require collaboration between practitioners, academics, futurists, policy makers, analysts and experts who take a holistic view of the world and our urban landscapes. Critical will be those with a spatial understanding of the implications of these challenges, those grounded in practice and urban policy who approach these problems through the lens of what matters and for whom to ensure that cities of the future are both sustainable and equitable. Understanding how we make that happen is one of the most fundamental and urgent policy challenges of our time.

This paper is designed to provoke critical discussion on the role of measurement that matters and multiple knowledge systems for intergenerational, health, wellbeing and planetary equity. The remainder of this paper includes contributions from the participants that form the basis of the Workshop interaction.

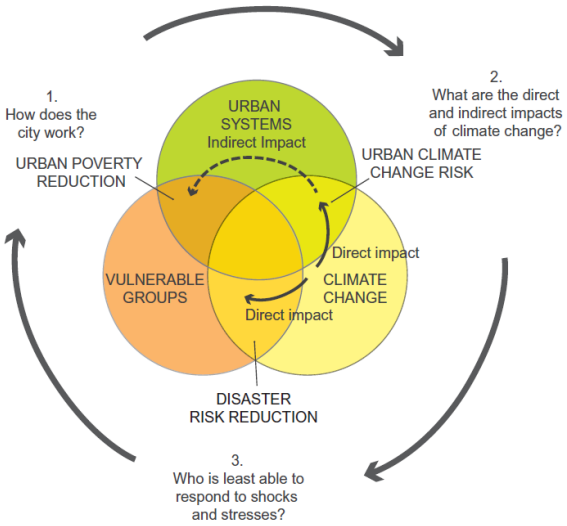

Figure 3 Climate impacts: a compound effect combining direct impacts, indirect impacts and pre-existing vulnerabilities. (International Journal of Urban Sustainable Development · November 2012)

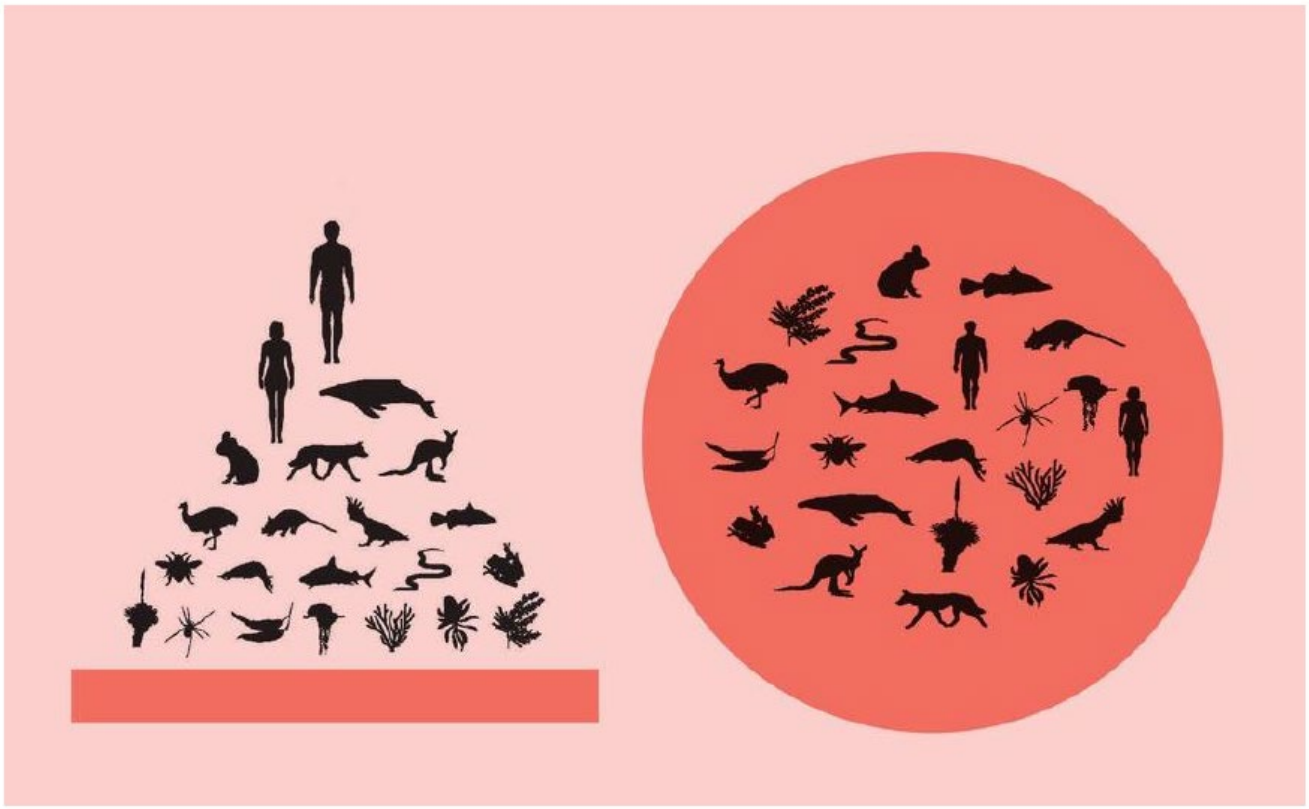

Figure 4 Shifting from human centred to Country centred (Image: adapted diagram (Eco v Ego, 2010) by Steffen Lehmann)

METRICS THAT MATTER

Associate Professor Melissa Edwards, *Centre Social Impact UNSW*

Systems level – reframing our focus on principles, meaningful metrics and new economic models.

We have long strived to achieve 'economics with a human face', with a recognition that GDP is only a measure of market activity that fails to guide progress through meaningful metrics, such as socio, cultural and environmental progress.

Global Sustainable Development Goals are an exemplar of the global efforts to progress from broad principles in the Global Compact to a comprehensive dashboard of measures. Yet almost halfway through the decade, despite progress towards some goals, others are stalled or in decline. Studies reveal limitations as goals may be incommensurate and may obfuscate new headwinds that emerge in locales at city, regional or community scales.

While goals are necessary parts of the solution, they are not sufficient as they focus on ends rather than means and in a hyper globalised economy their attainment can manifest geopolitical competition driven by sovereign political and commercial interests. For instance, despite the global agreement on climate action goals through the Paris Agreement, legislative and regulatory policies of regions and nations have not coalesced.

Global coordination is urgently needed to address existential threats and stressors such as anthropocentric climate change, breeches of planetary boundaries and persistent and widening inequalities. Policies and alternate economic models are plentiful, for instance, developmental, sociological, political and ecological economics, where energy, matter, flows and life are made visible and central. Yet resistance to these models pervades and remains. We are limited by our past in that data sets have not systematically gathered information through broader indicator sets and where this exists it is often national, making it difficult to see localised patterns and trends.

Without systemic attention to the indicators of progress that expand our collective imagination to our embeddedness in the Earth System and reliance on humanitarian virtues, and coordinated principles and mechanisms to guide sovereign decision-making, visions of thriving societies on a habitable planet are pushed aside for continued journeys on competitive trajectories that deplete the living planet and manifest humanitarian poly-crises.

Considerations and questions

- How do we escape from old ideas of unidimensional metrics and end goals, and unbound the collective imagination to reset our compass and coordinate means for orienting development through meaningful metrics?
- What data sets can inform such new models and metrics?
- What institutional forms are needed to view and gather such data?
- Over what time-periods -especially to consider intergenerational matters? For whom?

Meso level – communities and organisations

As we organise economies through global value chains and service-dominated activities in concentrated urban locales, optimising financial flows through investment and finance mechanisms dominate decision-making frameworks. Financial flows are directed through the efficient attainment of goals and targets that are developed, measured, and accounted for within various organised structures such as corporations, social economy organisations and government agencies.

In recent times assessment frameworks have departed from strictly measuring economic or financial performance, to include non-financial metrics through what has become a proliferation of sustainability (or Environmental, Social and Governance) metrics, frameworks and tools. Despite this proliferation of indicators, we remain divided over the assessment and materiality of these metrics. Are they to be assessed based on their optimisation of the organisation's performance? Or in terms of the difference, they made in enhancing positive social and ecological impacts?

Furthermore, these metrics are once again goal-oriented, structured, and bound in technical systems that further distance us from the lived experience of the impacts of those organised activities on the lives of people in urban and regional communities and the nonliving world in which they are situated. Such technical accounting and reporting systems further distance decision-makers from the consequences of their actions in places, spaces, and cultures.

Considerations and questions

- What forms of positive pursuits could guide our everyday lived experiences of the difference we make?
- What are the underlying characteristics of any form of pursuits – (1) who or what is affected or experiences the outcome of change [stakeholders], (2) scale how may or how big an area are effected? (3) depth and breadth of change - and likely spillover and ripple effects or unintended consequences on others, (4) temporality – how soon will the effect be realised? Is it lasting? Dynamic (changes itself over time), (5) significance – how important is this for those experiencing the issue or the outcome?
- How can we prioritise organising forms that value ecologies and flourishing societies and communities?

Individual level – recrafting logic models through a process lens, complexifying our tools and practices

Within all this complexity, we have at least made progress in measuring what matters and the difference we make over time. Alongside the recent turn to focus on outcomes and impacts, as opposed to optimising outputs, there is convergence on logic models as a mechanism for implementing and assessing programs on meaningful indicators of social impact. Most of us are predisposed to forms of action planning and goals as means to motivate and guide our activities towards certain outcomes. Indeed the entire fields of development studies, strategic planning and social impact are based on setting a focus on goal-oriented trajectories.

Yet the methods employed, for instance in measuring impact, are limited. Impact is about assessing the difference that a bounded activity set has made in addressing the problem context against the specific baseline. It is a linear model, bounded by assumptions about theories of change and causality. Impacts are presumed to occur through goals-oriented sets of activities that are siloed by topic, which themselves may be interdependent and have non-linear effects on one another. These silos do not account for the complex feedback loops, cascading effects (for instance when a critical threshold is transcended), and temporal delays or discontinuities that can emerge, and the effects that are irreversible or which could have knock-on effects for other 'material topics'.

Underlying assumptions and beliefs about the theory of changes are rarely articulated, nor are alternate scenarios proposed or deliberated. We do very little to question our underlying assumptions, values and guiding principles and so filter out potentialities of futures unimagined to give attention to more well-known/likely certainties while preconfiguring our systems, organisations and relationships such that eventuate a future state based on our past histories.

In striving for progress toward targets and goals, those that are obtainable are more likely prioritised over those intractable issues.

Are we missing the trees for the forest? In defining outcomes for a system of activities, might we be better equipped to value the multiplicity of values, make explicit assumptions and act through virtuous behaviours, rather than end-oriented goals?

POWER, PARADIGMS AND INDIGENOUS KNOWLEDGE

Keziah Bennett-Brook, *Program Head, Aboriginal and Torres Strait Islander Program, The George Institute for Global Health*

In places with long-standing populations, sustainability for intergenerationality is built into the ways of knowing (ontology), being (epistemology) and doing (axiology) (Martin & Mirraboopa, 2003). As we face urgent climate challenges and intergenerational inequities in the Asia Pacific region, there is a critical need to understand this interface of where Indigenous and other knowledge systems come together including power dynamics and shifting paradigms in the context of sustainability and urban migration. The integration of Indigenous perspectives and models of working is critical for a post-SDG agenda.

Case study:

The Guunu-maana model of working within global health research is a case study of working at this interface of knowledge systems. The Guunu-maana Centre is part of The George Institute for Global health which operates on a primarily western biomedical understanding of health equity. The Guunu-maana (Heal) approach to health equity and sovereignty applying uniquely Indigenous solutions and tailored approaches to supporting Aboriginal and Torres Strait Islander peoples to thrive, rather than one-size-fits all solutions.

This case study provides learnings from Indigenous models of excellence including learning from First Nations paradigm of health and wellbeing as holistic, collective and responsive to Country (lands, seas, skies) "Aboriginal health means not just the physical wellbeing of an individual but the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being thereby bringing about the total wellbeing of their Community." (National Aboriginal Community Controlled Health Organisation)

Considerations and questions

- Whose knowledge counts, and by extension, how do we perform research, design programs and policies?
- In places with long-standing or Indigenous populations, sustainability for intergenerationality is built into the ways of knowing (ontology), being (epistemology) and doing (axiology). What does this look like in practice?
- What are processes that enable trust building, fair distribution of power and agency in decision making?

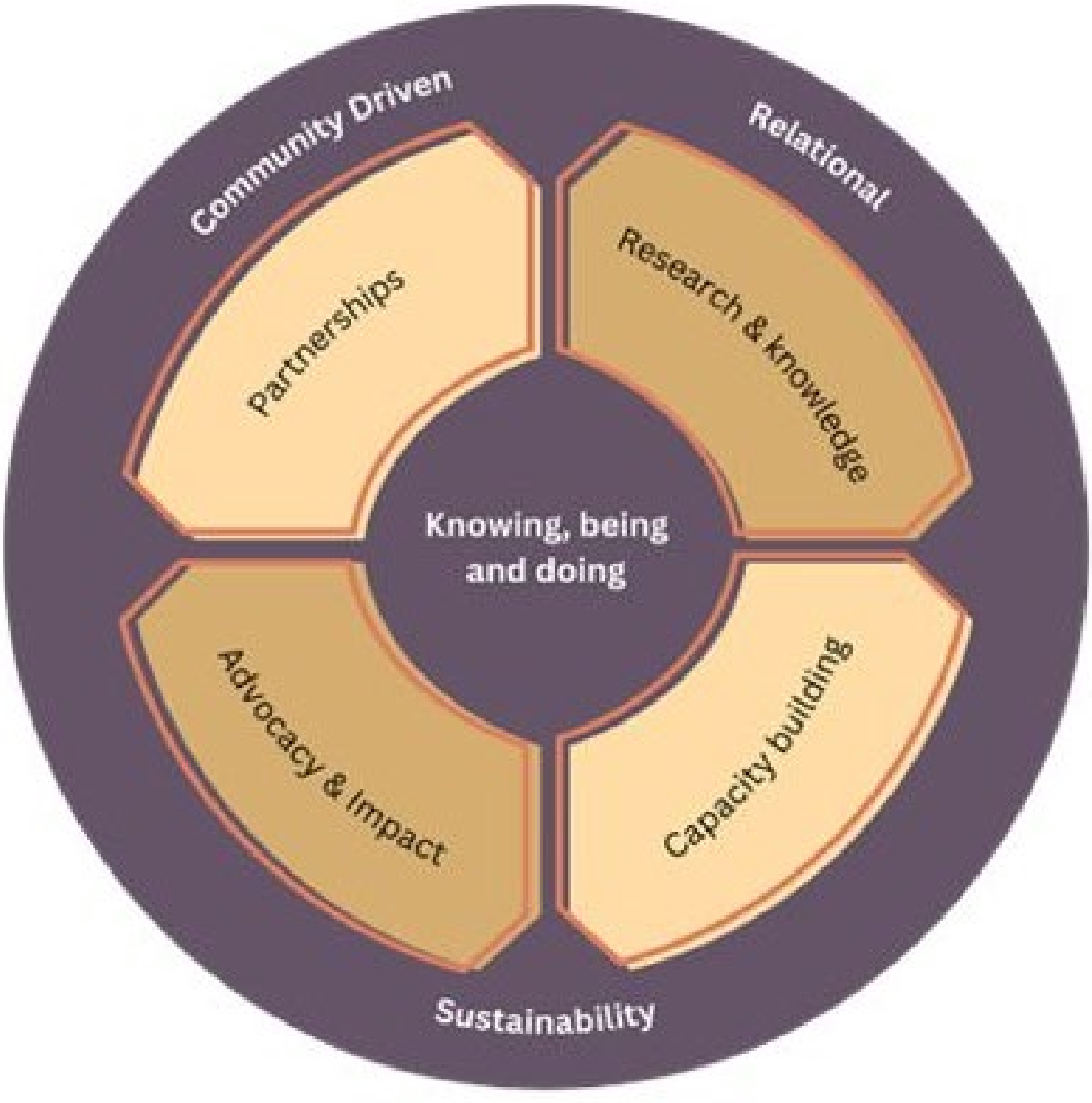

Figure 5 Guunu-maana (Heal) model of working (The George Institute for Global Health)

EMBLEMATIC ISSUES

URBANIZATION, DIVERSITY, AND INTERGENERATIONAL EQUITY

Mr Michael Rose, *Chair Committee for Sydney*

The Australian continent has a First Nations history spanning at least 60,000 years. The Australian nation on the other hand has a relatively recent history - 235 years of colonisation and mass migration. In Sydney approximately 49% of the population are migrants or the children of migrants. This is a higher percentage than most cities in the world, including high migration cities like New York and Los Angeles.

Sydney has expanded constantly over the last 80 years as successive generations of migrants have arrived. Many of these migrants have settled on the Western and South-western edges of the sprawling Greater Sydney area. This period of constant urban expansion has been characterised by poor planning and chronic underinvestment in infrastructure, especially in mass transit and social infrastructure such as schools, hospitals and community housing. As a result, there is a clear spatial dimension to inequality in Sydney.

Despite significant recent investment in new infrastructure and other planning and policy responses, much remains to be done. Significant challenges remain in relation to housing, access to employment and access to health and education services. In addition, the edges of the Sydney region have greater exposure to climate related risks and costs.

The spatial inequality in Sydney maps closely to the demography of migrant Sydney. Those areas with large migrant communities have a younger and faster growing population than the older and more affluent areas of the city. As a result, there is also a clear spatial dimension to issues of generational equity in Sydney.

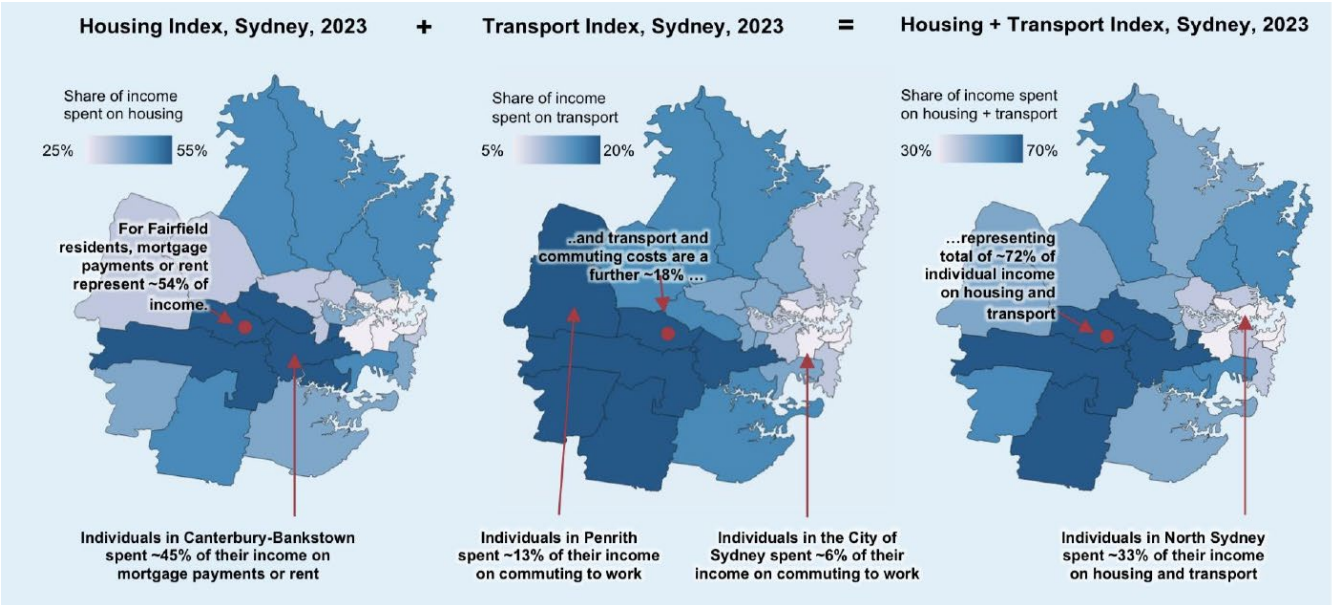

Figure 6 Intergenerational map of Sydney (Committee for Sydney 2024)

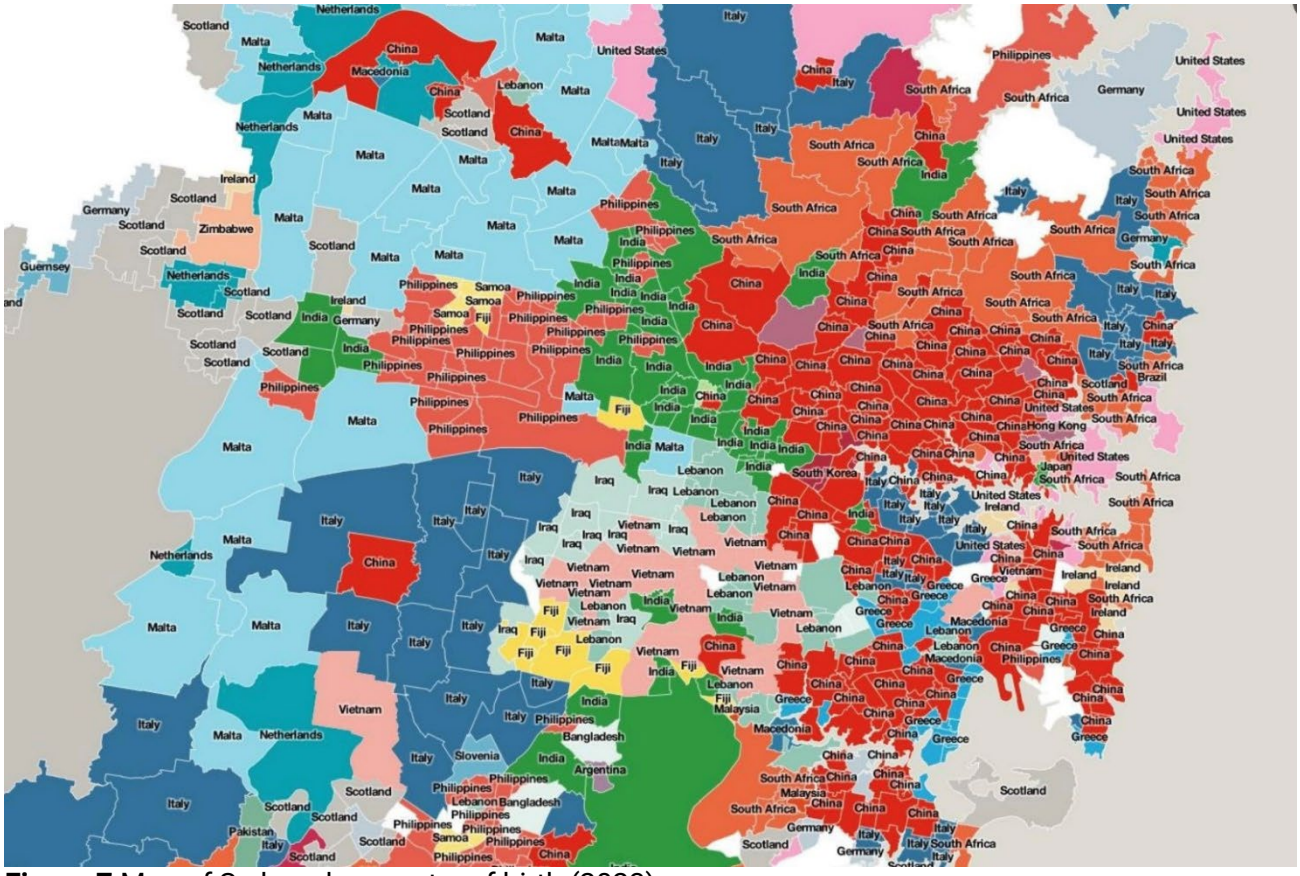

Figure 7 Map of Sydney, by country of birth (2023)

Responding to Sydney's challenges is complicated by a three-tier system of government, with Federal, State and 35 municipal governments involved in the governance of Greater Sydney. This governance structure and the political, administrative, legal and economic structures which underpin it, are often an impediment to necessary change. In responding to its current challenges, Sydney needs to strike a careful balance. It needs to respond to existing spatial inequality, and plan for a more resilient and sustainable future, without exacerbating intergenerational inequity by transferring the costs of action to future generations. Getting this balance right (or wrong) will have significant implications for Sydney's prosperity, sustainability, social cohesion and resilience.

There is a growing recognition in Sydney that First Nations communities and distinct migrant and cultural communities can bring different perspectives to the opportunities and challenges of urban life. Communities have different preferences and experiences in areas such as housing, placemaking, sustainability and intergenerational responsibility. Finding a true voice for these different perspectives will be critical to Sydney's governance and its future.

Considerations and questions

- How can policy be nimble to address unforeseen costs and trade-offs?
- How do we ensure equity, in terms of the ability to survive and thrive, is 'baked into' policy?
- How do we ensure policy is adaptive/resilient to the logic of cities' pivots?
- Whose risk is being managed and in which contexts? How can split incentives be transparent?
- How do First Nations perspectives change city planning, including objectives, priorities, design, engagement and spatial use? For cities that need healing, how do we incorporate Indigenous voices into governance structures in a long-term, sustainable and trusted way?

URBAN DEVELOPMENT POLICY AND EQUITABLE SERVICES

Mr Srinivasa Popuri, *UN-Habitat Bangkok Programme Office*

According to estimates by the World Bank, nearly 70% of the urban infrastructure in India needed by 2047 is yet to be built. At the same time, welfare gains from infrastructure-led integration may amount to at least $568 billion for South Asia and Southeast Asia. What is the role of global organisations such as UN habitat to address these issues?

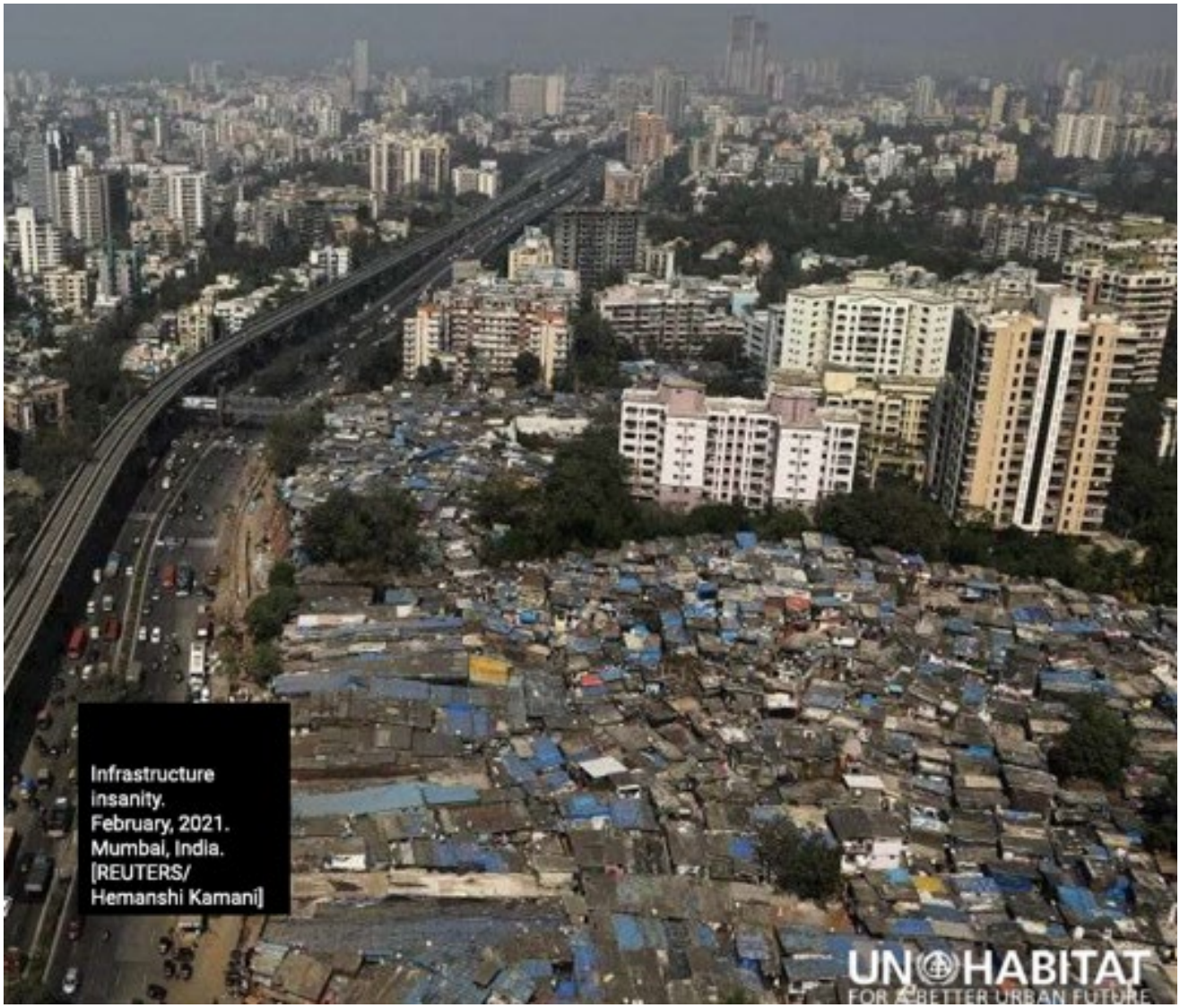

Figure 8 Infrastructure Insanity Mumbai India (UN Habitat, 2021)

Figure 9 UN Habitat, 2021

WHAT IS CITY WELLBEING?

Dr Jinhee Kim and Professor Evelyne de Leeuw, *UNSW Cities Institute*

'City wellbeing' moves beyond the mere absence of disease among urban residents. It fosters flourishing communities that are resilient; they actively contribute to the vibrancy of urban life. City wellbeing puts the complex urban (eco)system at its core and recognises the intricate and reciprocate engagement between urban morphology; climate and economy; places and spaces; and human and planetary aspiration.

Therefore, conventional human-centered health metrics such as life expectancy, mortality rates, morbidity, and health behaviours alone are insufficient indicators of city wellbeing. Similarly, data on multi-dimensional urban environments—such as access to urban green spaces, housing affordability, and environmental quality – are on their own inadequate for capturing this wellbeing dynamic.

To address the challenge of measuring progress in city wellbeing, a scoping of urbanisation trends is required.

Urbanisation in the Asia-Pacific region and its wellbeing impacts

Urbanisation in the Asia-Pacific region is characterised by its speed, scale, and diversity. Urbanisation in the Asia-Pacific happens faster than anywhere else. The proportion of Latin American urbanites grew from 10% to 50% in 210 years; in the Asia Pacific this took 90 years, and some countries took just 60 years.[1]. This unprecedented growth makes provision of infrastructure, jobs and services an ongoing challenge. And these factors are core prerequisites for wellbeing. A major consequence of this development lag is the growth of informal settlements (i.e., slums). These exacerbate the dearth of almost any wellbeing parameter, from water and sanitation to education, services (in health, social and economic realms) and mobility.

The Asia-Pacific region is also home to 17 megacities, more than half of all global megacities. The number is expected to grow to 22 by 20302. Approximately 2.5 billion people, constituting one-third of the global population, reside in Asian-Pacific cities. Policies and decisions that affect city wellbeing – including national, commercial, global have large-scale impacts for urban populations in this region. For example, inadequate public transportation planning can lead to greater car-dependencies, which subsequently have large-scale impacts on city wellbeing such as accessibility to services, air pollution and other environmental and health impacts.

The region's cities are home to great diversity. They include high-income countries, megacities, as well as very high small island population densities and pressures, each presenting distinct challenges and priorities.

Urbanisation has also disrupted traditional social and cultural norms, leading to changes in family structures, increased rates of single-person households (as seen in Japan and Korea), and heightened social and mental health issues. Other factors, both human and environment driven, add further pressure to the challenges. Such factors include rapidly ageing populations, climate change, and ecosystem disruption.

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[1] UNDP. Urbanization and Climate Change (Asia-Pacific Issue Brief Series on Urbanization and Climate Change No. 1). 2015.
[2] Habitat-III Regional Report. Asia Pacific Region Quick Facts

Addressing city wellbeing through boundary spanning

These complex problems cannot be addressed through assemblages of isolated solutions, or with a 'complicated' perspective that suggest the feasibility of series of sectoral and isolated fixes. What is needed is a transdisciplinary approach that applies multiple knowledge systems, involves academic and non-academic actors, and bridges different paradigms.

In practice, different models to promote wellbeing in cities are being utilised such as investing in medical-industrial clusters as economic drivers of urban development, analysing the association between the urban environment and wellbeing using, strengthening urban planning codes and regulations and policy tools, and promoting value-driven action for city wellbeing. City wellbeing is also addressed through the lenses of sustainability, ecosystem services, resilience, public health and urban planning. A transdisciplinary approach bridges these knowledge systems and their academic and non-academic actors with the goal of bringing transformative change. And here lies another challenge on metrics and power.

Critical to address immediately are institutional governance structures and visionary leadership to foster transdisciplinary boundary spanning that transcend knowledge systems for city wellbeing in the Asia-Pacific region. The UNSW Cities Institute will act as a catalyst in forging these interactive and transdisciplinary solutions in collaboration with key regional stakeholders such as the Alliance for Healthy Cities (AFHC), World Health Organisation Regional Office for the Western Pacific (WHO-WPRO), Association of Southeast Asian Nations (ASEAN) and others. Collectively, we need to consider those governance parameters that allow for boundary spanning and transformative actions to measure progress towards advancing city wellbeing.

Considerations and questions

- In our region, the densest populations on earth live on small independent developing islands in the Pacific. What are the challenges of density (even if overall numbers of people are not high) and the challenges when numbers and density are high (i.e.in mega cities). Which of these two should we focus on and why?
- Can we make cities better places by moving away from 'nature based solutions, to a focus on embracing indigenous cosmology that taps into the actual way things work at a local level? How can we make unforeseen costs and trade-offs transparent?

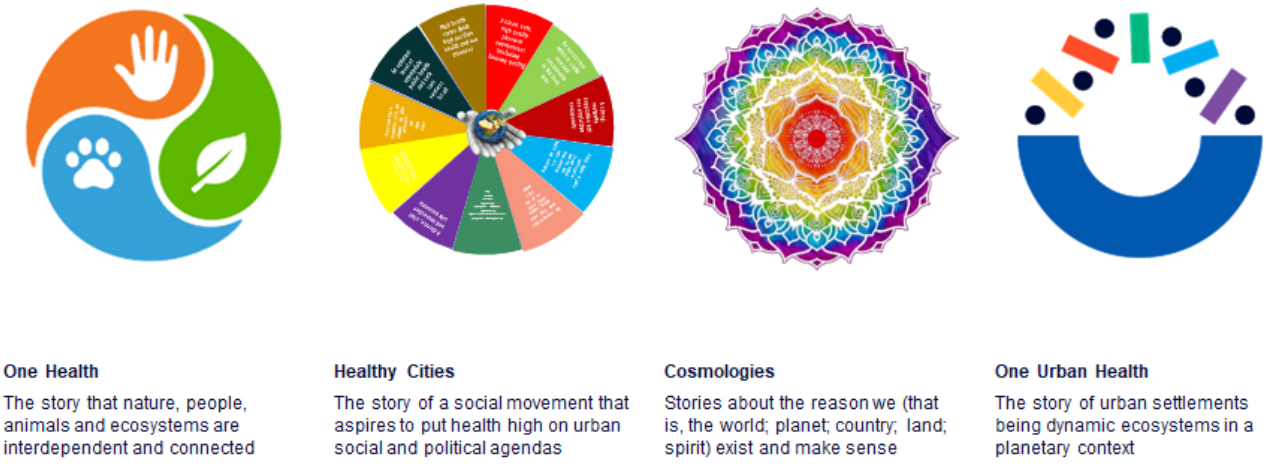

Figure 10 Health narratives of the future: One-ness (E.deLeuuw, 2024)

BEHAVIOURAL RESPONSES TO CLIMATE CHANGE STRESSORS: IS THE INDIVIDUAL OR THE SYSTEM RESPONSIBLE FOR DRIVING CLIMATE-POSITIVE BEHAVIOUR?

Professor Ben Newell, *Director UNSW Institute for Climate Risk and Response*

Psychology is the science of mind and behaviour. Its raison d'etre is to go beyond our common-sense understanding achieved via introspection. Measurement is crucial in this endeavour: without measurement we cannot assess changes in attitudes, perceptions, beliefs, and most importantly, behaviour. Measurement allows us to test our theories and build an understanding that can effect change.

The application of psychological theory is essential to drive behaviour change in response to the climate crisis. Growing awareness of the impacts of climate change is increasing the appetite for large-scale behaviour change. But how do we reach the 'social-tipping points' in behaviour required for real impact on emissions and thereby the future evolution of the climate?

Social tipping points are often compared to climate tipping points – physical changes in the Earth's systems that can precipitate cascading, non-linear impacts at a devastating and unprecedented scale, such as the melting of the West Antarctic ice sheet. We need the same unprecedented, fundamental and wholesale change in the social fabric of our world if we are to avoid the worst outcomes of climate change. We need positive social tipping points.

How will we achieve this change in our cities of the future? Just as our behaviour is affected by the surrounding physical architecture, so too our choices and decisions are influenced by the environment – or 'choice architecture' – in which those choices are made. If an option has been preselected (e.g., green power is the default on my power bill, vegetarian foods are the default on a menu) then it increases the likelihood that a person chooses (or sticks with) that option. Such choice architectures can also impart desired behaviours to people, thereby potentially perpetuating, reinforcing and spilling over into other patterns of behaviours. These impacts may be small, but when implemented at scale harbour great potential.

Can we rely on this purely 'bottom-up' approach, where individuals retain the right to choose, but are encouraged via changes in choice-architectures? Or if we are to precipitate real social tipping points, will we need top-down regulation – the system is changed (e.g., all power is generated via green sources; a meat tax is introduced)? More fundamentally, how do we ensure that these changes – individual or system – take us on an equitable journey toward social tipping points? Not only are people's preferences heterogeneous, but so too is their ability to take advantage of alternative options. Location, socio-economic status and age, are just some of the factors that must be considered if we are to ensure that everyone has the opportunity to change behaviour for the better. How can this be done optimally?

Considerations and questions

- Should individuals be allocated a personal annual carbon budget to be distributed as they choose but with penalties for exceeding a prescribed amount?
- Should cities introduce vehicle emission taxes, mandate public transport use and other forms of regulation to constrain climate-negative behaviour?
- How do we strike a balance between these individual and system-level changes?
- How do we design cities to make climate positive behaviour the default?

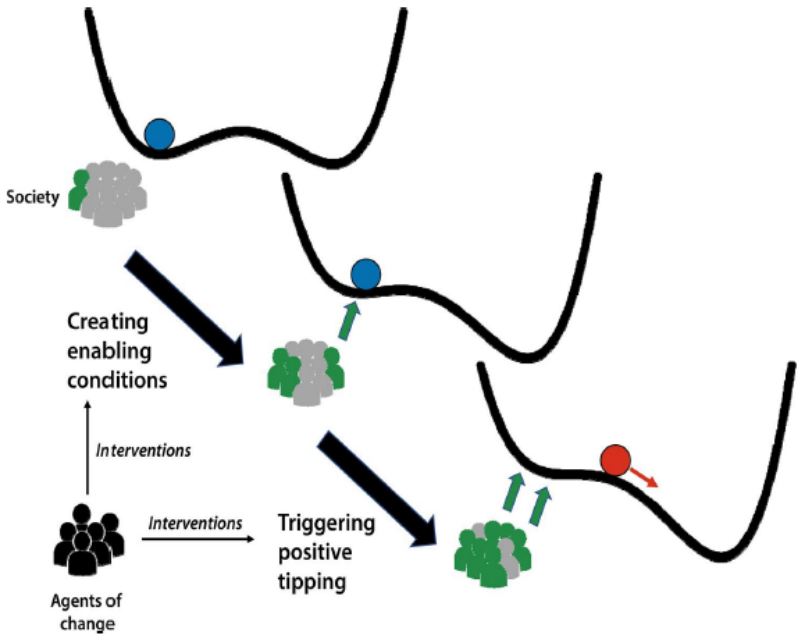

Figure 11 Creating enabling conditions (Lenton, T. Global Sustainability 2022)


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