

Getting started - Choose 3 SDG's to initiate the process

SDG Cities holistic approach – five examples how the SDG expert network can provide value for the 25+5 Cities and Communities:

CHOICE 1

Dynamic SDG Implementation Platform – Integrated measurement of 'whole-system' impacts, trade-offs and synergies

Greenwood can provide a common SDG steering platform for the 25+5 city leaders.

This city-tailored simulation capability measures long-term impacts from urban investments and policies and their integrated effects on each city's performance against the SDGs. With this platform city leaders and citizens can:



- Better understand and steer the urban dynamics determining their city's trajectory
- Value investments and other initiatives and make evidence-based prioritizations and
- Decisions
- Communicate a compelling and holistically integrated story to citizens, collaborators, and

- other stakeholders
- Help the 25+5 cities to accelerate SDG progress to 2025
- Access innovative and affordable private financing (enabled by Greenwood's technology)
- For sustainable development investments

The situation

- Our world is becoming less sustainable on multiple dimensions and in many ways and places.
- Increased development is essential to meet growing social and environmental needs.
- The UN Sustainable Development Goals (SDGs) are the most comprehensive and widely accepted structure for measuring sustainability and mobilizing development efforts globally.

Complicating factors

- SDGs are often approached as if they were vertical 'silos' isolated from each other.
- Varying local and national situations call for quite different SDG priorities and trade-offs.
- With few means of measuring SDG cross-influences, interdependencies and synergies we are unable to evaluate alternative actions and implementation options.
- With many seemingly independent variables and little reliable anticipation capability, SDG action and progress are too slow to meet sustainability or development needs.

SDG reality is systemic

- SDGs are clearly coupled in our interconnected social, environmental, economic and governance systems, both globally and locally, either with beneficial synergies or at cross-purposes.
- Education (#4) can reduce inequality (#5) especially if it promotes gender equality (#5).
- Sustainable cities (#11) depend on renewable energy (#7) as well as infrastructure (#9).
- Infrastructure (#9) is a key enabler of job creation and economic growth (#8).
- Without new infrastructure, job creation and economic growth (#8) increase income disparities and damage social mobility and balance (#10), harm the environment (#13, #14, #15), and make our cities less sustainable (#11).
- Every day, growing cities around the world are living the conflicts between SDGs that are described in the concluding item on that list. Systemic conflicts like these are a leading cause of slow progress.

from SDG action, and they are mostly immune to piecemeal action. But for the first time in human history such conflicts can be systemically anticipated and turned into beneficial synergies.

Integrated measurement and reliable anticipation of 'whole-system' SDG impacts

Technology

Greenwood has pioneered technology for dynamically simulating the systems that underlie and connect the SDGs. They are being successfully simulated in cities (London) and national and supranational economies (the Eurozone). The basic methodology was developed at MIT and is taught in universities around the world; it has been extensively employed and its reliability proven in many different applications and with stringent validation testing.

Application in cities

In partnership with the Greater London Authority (GLA) and Transport for London (TfL), Greenwood has been simulating the whole of London's dynamic system of systems –its social, environmental, economic and public fiscal trajectories, both in the past and out to 2050.

These holistic London simulations explicitly measure performance for core SDGs (#8, #9, #10, #11, #13) in systemically integrated fashion, including powerful cross-influences. The London simulator includes dynamic effects from other SDGs, and there are no technical barriers to explicitly simulating all of them. This standard simulator can be rapidly set up and tailored to reflect the unique characteristics of any city as demonstrated in cities of quite different sizes (e.g. London, Boston, Frankfurt, Coburg).

A force multiplier for measuring trade-offs and leveraging full SDG value

This rigorous capability is a breakthrough in measuring and anticipating the social, environmental and economic and fiscal 'cost of not' acting on the SDGs, or of SDG actions that are likely to be systemically ineffective. It reveals ways of harnessing the dynamics of our socioeconomic systems to power change faster and more reliably, producing transformative differences over surprisingly short timeframes.

Many such changes will be self-funding, as demonstrated in dynamic analyses of London and other cities; this will support new large-scale private financing for requisite public investments.

SDGs in urban systems

The diagram below is a high-level view of the dynamic system operating in every city around the world. It is overlaid with the 17 SDGs, illustrating their locations and influence in the urban system and how they affect each other through systemic relationships.



Sustainability and un-sustainability are systemic phenomena, manifested within common and recurring urban/national/ supranational system structures. Each occurrence of these structures has its own unique mix of system elements and relationship strengths, resulting in an equally unique mix of sustainability issues, priorities and trajectories. Because the underlying systemic dynamics are powerful and naturally self-reinforcing (for better or worse), there is a huge difference between merely plausible and optimal SDG implementations.

There is great potential for increasing the breadth and effectiveness of SDG actions. This can be achieved by anticipating consequences and designing implementation strategies around system-specific priorities. Intuition and knowledge guiding the application of 'whole-system' simulation technology, and informed by it, can make a world of difference.