

Fourth United Nations Environment Assembly Cities Summit

Innovation for Livable and Sustainable Cities: Multi-Level and Integrated Urban Systems

The way we go about fast-growing urbanization and related investments in basic infrastructure and housing is critical to shift the tide and tackle some of the most challenging issues of our time: poverty reduction and well-being of all, climate change, dwindling resources and overuse, and pollution levels that have detrimental effects on the health of people and ecosystems.

Cities are already responsible for 70% of greenhouse gas emissions and natural resource use. This alongside the facts that we expect additional 2.5 billion urbanites with growing purchasing power and that over 70% of the city infrastructure that we will see in 2050 is yet to be built, not only instill a sense of **urgency to act but also present an immense opportunity to future-proof investments and to radically rethink the design of our cities, their support systems, and the ways we produce and consume**. To make our cities more livable, inclusive and sustainable, in line with the vision set out in the SDGs and in the New Urban Agenda.

The International Resource Panel Report, “The Weight of Cities”, highlighted the cumulative benefits of integrated approaches, finding that **up to 20-fold improvements in resource and energy efficiency are possible by optimizing systems** and identifying cross-sector synergies between efforts to efficiently shape urban form, improve energy efficiency of buildings, vehicles and appliances, invest in modern district energy systems and renewable energy, and transition to more sustainable lifestyles.

Visionary local governments, companies and communities are developing solutions that enable us to link subsystems like transport, energy, housing, water, and waste. Some cities have set high climate and / or circularity targets. And pilots of innovative neighbourhood and district-level approaches have demonstrated that it can be done, engaging communities in the co-production of the city and transforming lifestyles. **Technology is available, with many solutions being proven and cost effective already**.

To scale up existing efforts and drive socio-economic progress along the 3-Ds - Decarbonizing, Detoxifying and Decoupling, achieve equitable access to resources, and reduce vulnerability while supporting job creation and locally-focused economies, we need denser, more diverse, more decentralized and more digital cities that are more inclusive and respect human needs and rights. **We need integration at different levels: technology and innovation, across key sectors; between land use planning and sectoral policies, thinking grey, green and blue infrastructure together; and between different levels of governance:**

Integrated planning

- Integrated participatory planning includes attention to optimization of infrastructure – ensuring access to basic services for all - and interaction with local area development plans, streetscapes, public space, urban design, strategic density and connectivity, and place making. Systems planning based on inclusive approaches and life-cycle thinking helps to identify and mitigate negative impacts across infrastructure’s entire life cycle to avoid burden shifting, reduce resource consumption, and minimize harmful emissions of pollutants and greenhouse gases.
- Increasingly, mature analytical life cycle and GIS mapping tools exist at the regional and city level to capture environmental, social and economic impacts and should be used as planning tools.

Urban systems integration

- Using integrated systems allows cities to harness synergies between people’s needs, material resources (water, energy, solid waste, etc.) and urban space resources (green space, built

environment and transport infrastructure). Cities need to take a more holistic approach to sustainability challenges and avoid addressing each issue in isolation.

- Systems integration requires technical, organizational and institutional changes to cut across disciplines and create links between traditional sector silos, as well as to foster communities' involvement in the process, ensuring relevance, creating ownership and building trust.
- Proven 'integration enabling' solutions exist, providing stepping stones for wider systems integration. District energy systems are one such solution enabling synergies and sharing of resources between heating or cooling with power, waste, buildings, and industry.
- Although often overlooked, nature-based solutions represent a cost-effective way to ensure circular interventions have cumulative benefits.
- Rural-Urban systems should be planned as one entity, considering interdependency between rural and urban spaces and systems, and environment and human well-being.

Data

- Data is critical for informed decision-making as well as attracting impact financing.
- Highly detailed geo-spatial data, real time Big Data and communities' participation in data collection have recently become available and allow to monitor sustainability targets. However, there is a need to develop frameworks and measurement protocols that ensure comparability between cities and consistency with SDGs.
- There is a need to help local governments to develop analytical capabilities and data driven integrated planning while ensuring data security and privacy challenges are addressed.

Governance and multi-level coordination

- System integration often requires action at both national and sub-national government levels, as well as cooperation between local governments. Multilevel cooperation is needed to develop effective enabling policies, funding mechanisms, and incentives. This requires each actor to best use its jurisdiction – and, when appropriate, with transferal of jurisdiction and clear roles and responsibilities – while ensuring they are not exerted in isolation, but in close coordination with other spheres of government.
- National governments need to support cities for them to successfully contribute to achieving national objectives, in the respect of the principle of subsidiarity. In this respect, the contribution of local policies to national goals needs to be supported with adequate competences and resources; their implementation needs to be monitored, and their impact, quantified.
- It is important that local governments are included in nation-to-nation dialogues and to facilitate their [more direct] access to funding streams from national budgets and typically national-level funders, like MDBs and development facilities.

Public Procurement

- Public procurement is a powerful tool to develop better integrated sustainable infrastructures and more circular products, influencing respective value chains to shift away from present linear economic models and sectoral silos.
- Circularity principles can be embedded in public procurement through integrated cross-sector project delivery approach, lifecycle costing, local sourcing, encouraging low energy and water footprints and cradle-to-cradle management of resources.

Business Engagement

- Implementing integrated solutions that allow for greater efficiencies and circularity requires businesses to fundamentally change their business models, product design, production processes, and marketing. It will require business models that incorporate a range of actors from different utilities/sectors who are familiar with working together and /or for whom the integrated solution will be outside of their core business. This presents an opportunity for companies to innovate and reduce company footprints along science-based targets.
- Creating local value and employment, fostering decent jobs and the inclusion of informal workers, influencing global value chains, and fostering collaboration between different stakeholders.
- Setting up public-private partnerships to co-create and thereby overcome financial barriers and perceived risk, injecting a focus on longer-term value creation and sharing of risk.

- Optimizing urban systems to ensure efficient resource use and to realize their multiple benefits requires working with actors outside of the standard utility and end-user model. Cities pursuing such projects will benefit from identifying synergies with utilities – such as providers of water, energy, waste management or transport – and incorporating these synergies into a mutually beneficial business case. Such collaboration can go further than just joint planning of infrastructure and can mean the participation of multiple utilities in developing the business case.

Finance

- To unlock the required trillions of dollars of investment in sustainable pathways, we need to facilitate cities' access to financing: starting with capacity building allowing local governments to structure projects and develop a pipeline of bankable projects contributing to a broader vision of sustainable cities; revising the legal framework to promote responsible borrowing; and increasing investor and financial institution familiarity with innovative solutions, to involve them from the outset in the identification. Bonds and guarantees for subnational governments and, risk management arrangements to support renewed public-private partnerships are amongst the key instruments. .Furthermore, a strategic approach to the integration of local governments in the operations of international funding mechanisms such as the Green Climate Fund should be considered and addressed through adapted allocation criteria to financing from multilateral and bilateral development banks.
- Use of local government's own funds complemented by active participation of local and regional governments in the formulation of national climate investment plans with clear accountable roles of cities in identifying, preparing and structuring bankable projects in their territories.
- One of the most overlooked and underfunded costs that have enormous impact on project success is the upstream development process, including demand assessments, community-engagement, partnership-development up to pre-feasibility. Local governments often lack capacity and data – an effort to improve readiness and holistic planning is required.

Community engagement creating social equity

- Integrated planning processes must involve community and civil society participation in a meaningful way from the start – from policy design to its implementation, monitoring and evaluation. Taking on board those perspectives results in greater alignment between social inclusion, planning and environmental policies, and greater ownership and buy-in, and, in the end, higher chances of lasting behavior change.
- Circular development is an opportunity to reconnect people with resources at the local level, by changing how resources are allocated and accessed, creating circular jobs, increasing community-based stewardship, or making the impacts of unsustainable consumption more visible to the end-user.
- Circular projects must be designed so that they trigger tangible benefits for the local population, especially the most vulnerable groups. In developing economies, the well-being and empowerment of informal workers is key to the sustainability of local circular projects.

Integrated urban systems, designed to respond directly to SDG 11 – Sustainable Cities and SDG 12 – Sustainable Consumption and Production, and can help countries make good on many if not all other SDGs, and contribute to the achievement of the New Urban Agenda and the Paris Agreement.