



The Urban Nexus Guide

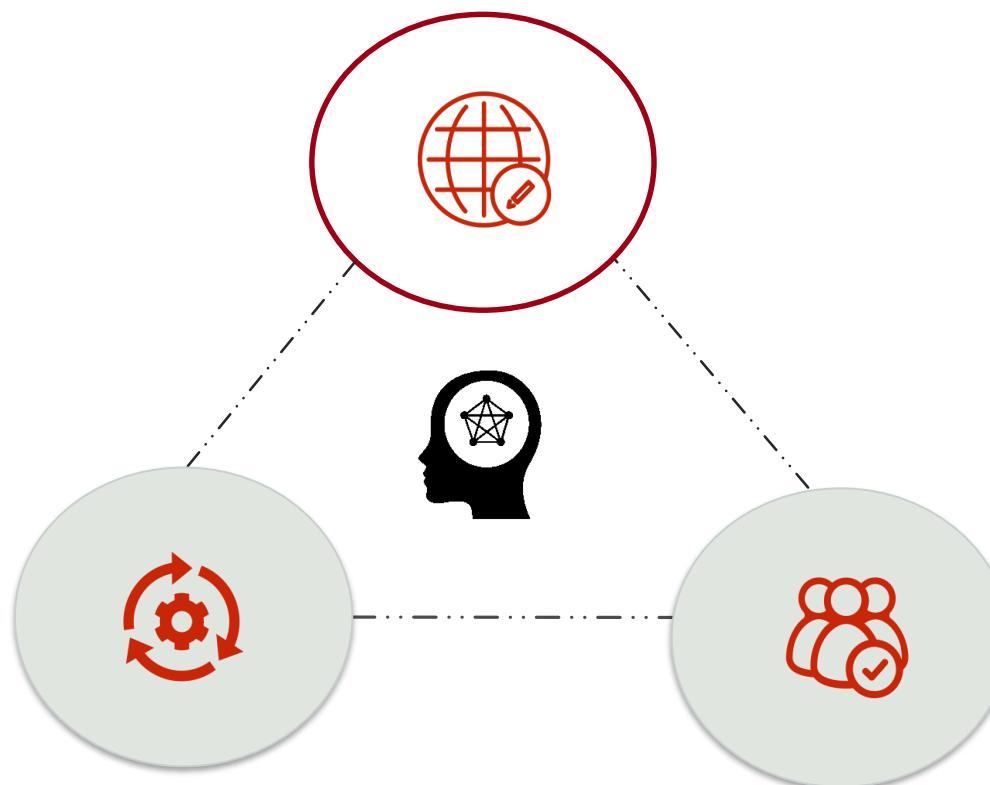
Chapter 4 (Module 1)
The Urban Nexus as
guiding tool to comply
with global agendas

The Urban Nexus Guide

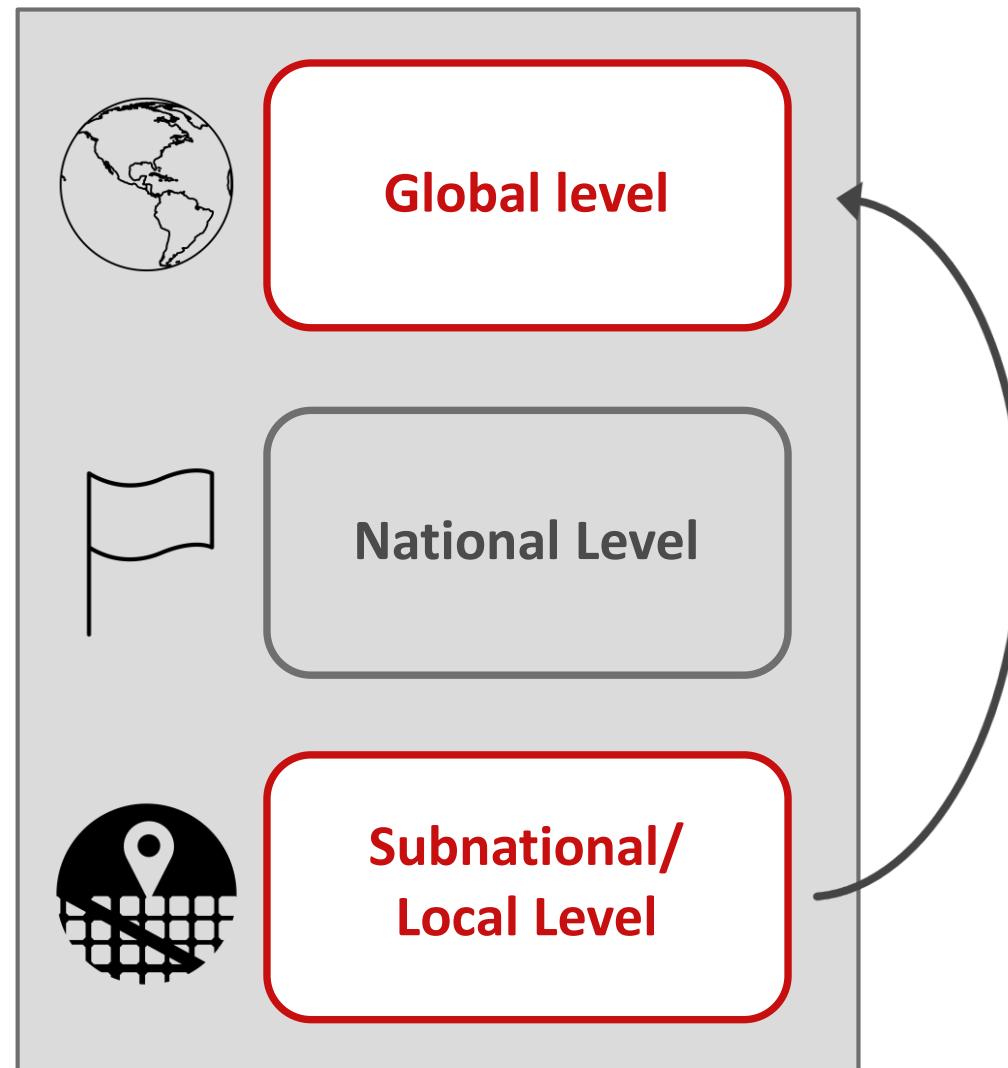
Module 1:
Linking Global Agendas
and the Urban Nexus approach

Module 2:
Planning and
implementing
the Urban Nexus

Module 3:
Governing the
Urban Nexus



1.2 Implementing global agendas: the Urban Nexus as a guiding tool



Learning Goals



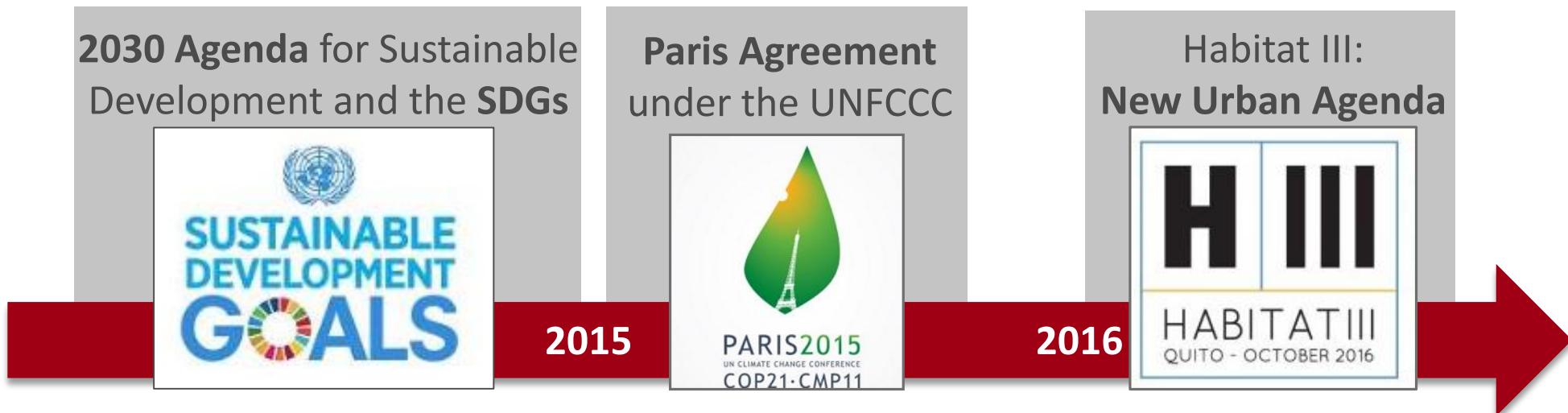
1. Know why the Urban Nexus approach can serve as a tool to comply with global agendas
2. Understand how the Urban Nexus can contribute to the implementation of the Paris Climate Agreement, the 2030 Agenda for Sustainable Development, and the New Urban Agenda
3. Learn about real case study examples illustrating the potential of the Urban Nexus as an action-oriented guiding tool



Global Agendas

Challenges posed by urbanization and development patterns

- Rising demand for/inefficient use of resources (e.g. energy, water, food, land)
 - High GHG emissions, contributing to global climate change
 - Effects of climate change put cities at risk and pressure on limited resources
- International recognition seek to address these challenges:

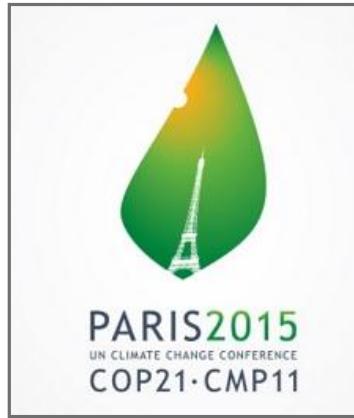


Universal targets and goals on climate change & sustainable development

→ Encourage local governments to develop **integrated approaches** to address challenges



The Urban Nexus and Global Agendas



Graph adapted from German Development Institute / Deutsches Institut für Entwicklungspolitik

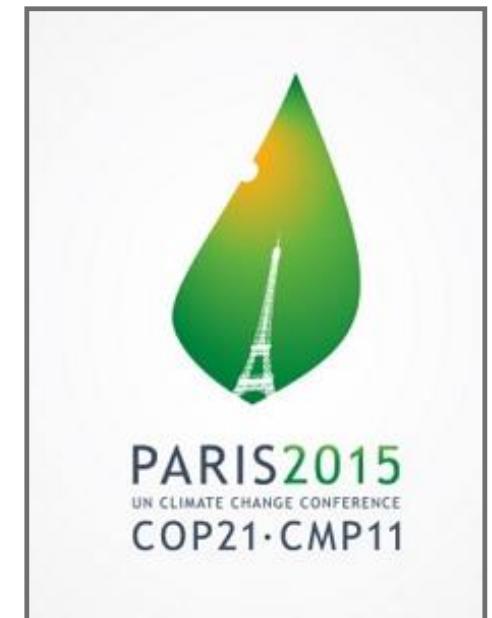


1. The Paris Climate Agreement and the Urban Nexus



The Paris Climate Agreement

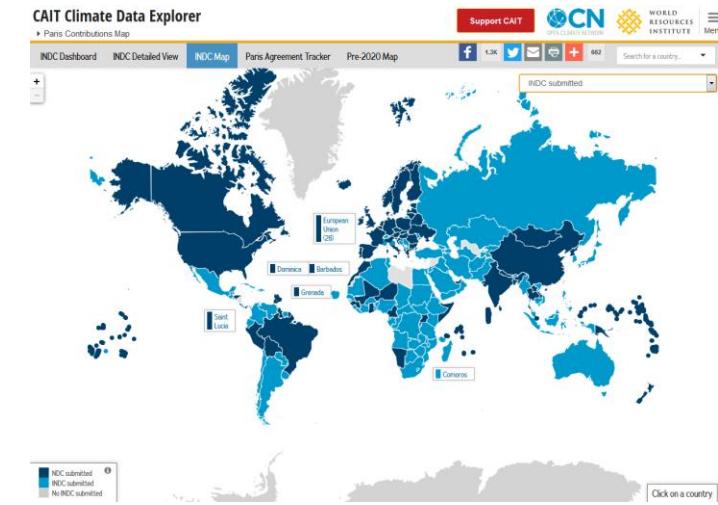
- Adopted in 2015 by 197 UN Parties : Legally binding agreement
- Goal to keep temperature rise well below 2°C on pre-industrial averages
- Establishes the main framework for cooperative action on climate change beyond 2020 and will replace the Kyoto Protocol
- **149 parties have ratified the Convention** (status as of June 2017)
- Requires all parties to submit **nationally determined contributions (NDCs)**. Efforts are to be reviewed every five years.
- Acknowledges the **role of non-party stakeholders, including cities and other subnational authorities** and encourages them to scale-up their efforts and support actions to reduce emissions, build resilience and decrease vulnerability
- Dozens of worldwide **city-led initiatives on monitoring and reporting**





Nationally Determined Contributions (NDCs)

- Paris Agreement requires all parties to submit **nationally determined contributions (NDC)**
- NDCs are the primary means for **national governments** to communicate internationally the steps to **address climate change in their own countries**
- Efforts are to be reviewed every five years
- In 2018 first stocktaking of the collective efforts



NDCs can be tracked through an **interactive map**
(<http://cait.wri.org/indc/#/map>)

- **Cities do not actually have an institutionalized role in meeting the targets of the NDCs**
- Dozens of worldwide **city-led initiatives on monitoring and reporting:**
 - NAZCA tracks non-state actor initiatives
 - carbonn® Climate Registry (cCR)

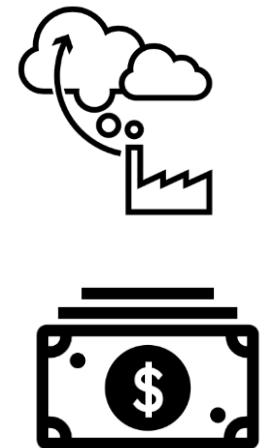
NAZCA
Tracking Climate Action

carbonn
Climate Registry ✓



The role of cities in implementing the Paris Agreement

- Cities consume over **two-thirds of the world's energy** and account for more than **70% of global CO2 emissions**
- 90% of the world's urban areas are coastal, putting **cities at high risk from the impacts of climate change** (C40 2017)
- More than **80% of annual global climate change adaptation costs** arise in cities (World Bank 2010)



Cities play a leadership role in driving global action to address climate change!

- Many cities have set more **ambitious climate change mitigation targets** than required by national law
- **Global Compact of Mayors** as common platform to capture the impact of cities' collective actions through standardized measurement of emissions and climate risk, and consistent, public reporting of their efforts





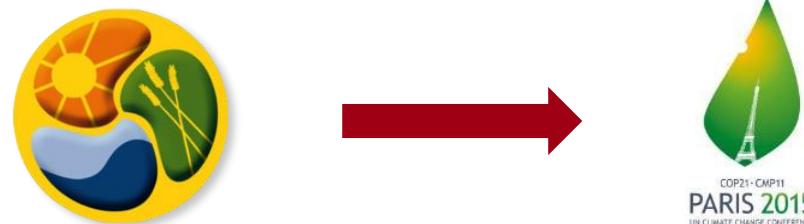
Improving Energy Efficiency in Buildings: Energy Plus House

Challenge: Environmental pollution due to coal-fired power plants and heat supply for industrial and household use



Project Description:

- Elaboration of climatically adjusted designs, thermal insulation and use of photovoltaic to **produce green energy** feeding the electricity into the local grid
- Combined with sanitation technologies the Energy Plus House would also **reduce the energy** for the sanitation devices as well as other household utensils



- The Nexus Energy Plus house will produce more energy from renewable energy than it consumes and thus contributes to clean and sustainable energy supply



2. The Sustainable Development Goals (SDGs) and the Urban Nexus



2030 Agenda for Sustainable Development

- Adopted in September 2015 by UN General Assembly
- Agenda for developed and developing countries alike
- **17 Sustainable Development Goals and 169 targets**, which are cross-cutting and indivisible
- Explicitly acknowledges the importance of cities in the pursuit of sustainability through a dedicated goal on cities (SDG11): “**Make cities and human settlements inclusive, safe, resilient and sustainable**”.
- SDGs have a strong **urban dimension**: In fact, 65 % of the SDGs targets rely on implementation at the **local level!**

- Call to move beyond sector-specific policies and planning and apply **integrated approaches**
- **Nexus approach** as important difference between the MDGs and SDGs





2030 Agenda and the Urban Nexus

SDG target 8.4: Global resource efficiency in consumption and production

SDG target 11.3: Integrated and participatory planning

SDG target 11.b: Integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change (...)



SDG Target 6.4: Water-use efficiency across all sectors

SDG Target 12.5: Reduce waste generation through prevention, reduction, recycling and reuse

Other targets supported indirectly

Interactions/ Contradictions between SDGs

GOALS SCORING

INDIVISIBLE

The strongest form of positive interaction in which one objective is inextricably linked to the achievement of another. Reduction of air pollution (12.4) is indivisible from improved health and reducing non-communicable diseases (3.4).

+3

REINFORCING

One objective directly creates conditions that lead to the achievement of another objective. Increasing economic benefits from sustainable marine resources use (14.7) reinforces the creation of decent jobs and small enterprise in e.g. tourism (8.5 and 8.9)

+2

ENABLING

The pursuit of one objective enables the achievement of another objective. Developing infrastructure for transport (9.1) enables participation of women in the work force and in political life (5.5)

+1

CONSISTENT

A neutral relationship where one objective does not significantly interact with another or where interactions are deemed to be neither positive nor negative. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution (14.1) is consistent with target 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

0

There is no significant interaction between the two targets.

CONSTRAINING

A mild form of negative interaction when the pursuit of one objective sets a condition or a constraint on the achievement of another. Conserving coastal areas (14.5) and development of safe affordable housing and basic services (11.1) may constrain each other

-1

Establishing protection areas in the coastal zone and expanding urbanization, infrastructure or transport risks spatial competition especially in densely populated areas. Integrated coastal zone management and marine spatial planning tools are readily available to mitigate spatial competition.

COUNTERACTING

The pursuit of one objective counteracts another objective. Ensuring access to safe, nutritious and sufficient food can counteract sustainable water withdrawals (6.4) and reduction of chemicals releases (12.4)

-2

Increasing productivity in agriculture is a necessary (but not sufficient) condition to improve food security. In many places, this might entail increased and/or better irrigation as well as increased use of agro-chemical inputs.

CANCELLING

The most negative interaction is where progress in one goal makes it impossible to reach another goal and possibly leads to a deteriorating state of the second. A choice has to be made between the two. Developing infrastructure (9.1) could be cancelling the reduction of degradation of natural habitats in terrestrial ecosystems (15.1)

-3

In underdeveloped regions, developing roads, dams, and power grids might be a high priority, although it will cause some unavoidable fragmentation of habitats and compromising the integrity of the natural ecosystem, leading to risks to biodiversity as well as social risks.

Source: ISCU 2017: 23



Interactions/ Contradicions between SDGs

- To overcome potential constraints and negative interactions between the SDGs, **coordinated policy interventions are crucial to manage competing demands over natural resources**

Example:

“If the Ministry of Agriculture puts food security through agricultural intensification as its key SDG2 target, while the Ministry of Water’s target is to dramatically reduce agricultural water pollution under SDG6 and SDG14, and the Ministry of Environment’s target is to reduce biodiversity loss and expand conservation zones under SDG15, then mechanisms must be put in place to negotiate how the sets of targets should be moved forward.” (ISCU 2017: 222)

- **The Urban Nexus** can help to establish such necessary mechanisms by facilitating coordinated policy approaches and interventions, focusing on interdependencies and synergies, and by fostering suitable governance structures



Sanitary Landfill: Solid Waste to Energy Project



Key Issues:

- Production of **700-750 tons of solid waste per day**. With its designed capacity, the current landfill of the city will be closed by 2020.
- **High percentage of organic matters and high moisture** cause difficulties in collection, transportation and treatment of solid waste.
- Da Nang needs **urgent solutions** for reduction, reuse and recycling measures of municipal solid waste.

Project Description:

Preliminary Feasibility Study in Da Nang:

- **Sustainable Sanitary Landfill to Energy System (SSLTES)** to produce energy or compressed biogas and to achieve sanitary landfill sustainability
- Construction of **MSW recycling complex** near the landfill



Linking the SDGs and the Urban Nexus: Case Study of Pekanbaru



Sanitary Landfill: Solid Waste to Energy Project



7.1 (7.1.2)

By 2030, ensure universal access to **affordable, reliable and modern energy services**

7.1.2 Proportion of population with primary reliance on **clean fuels and technology**

11.6 (11.6.1)

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and **municipal and other waste management**

11.6.1: Proportion of urban solid waste regularly collected and with adequate **final discharge out of total urban solid waste generated**, by cities



3. The New Urban Agenda and the Urban Nexus



The New Urban Agenda

- 20 years comprehensive vision for sustainable urban development
- Groundwork for policies and approaches that will extend, and impact, far into the future
- Habitat III process: Inclusive process, direct consultations between local authorities and member states took place in a UN context
- Covers the most relevant issues related to sustainable urban development
- Defines the legal, financial and institutional frameworks that cities need to take action and implement the urban-related SDGs
- HOWEVER, the New Urban Agenda does not provide an implementation plan and its linkages to the follow-up and review process of the 2030 Agenda still needs to be concretized



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New Urban Agenda and the Urban Nexus: Case Study of Santa Rosa



Low Cost and Green Housing in Santa Rosa, Philippines

Key Challenge: Rapid urbanization puts pressure on land and groundwater. City faces groundwater contamination due to improper wastewater disposal and solid waste management



Key Goal: Creating low-cost and inclusive housing projects which support resource efficiency and self-sustaining communities

Project Description:

- Socio-economically mixed settlement structures for informal settlers, which need to be relocated due to risks of flooding, and city employees
- Application of green building designs: energy efficiency, climate resilient housing
- Application of vacuum sewer technology for wastewater collection
- Inter-local cooperation with neighboring cities and municipalities

Result: Showcase of green building, innovative wastewater management, public private partnership and all-inclusive city, increased resource-efficiency through inter-local-cooperation



Linking the New Urban Agenda and the Urban Nexus



Low-Cost and Green Housing in Santa Rosa



- Para 33: We commit to stimulate the supply of **a variety of adequate housing options** that are safe, affordable, and accessible for members of different income groups of society (...).
- Para 75: We commit to encourage national, sub-national, and local governments, as appropriate, to develop **sustainable, renewable, and affordable energy, energy-efficient buildings and construction modes**, and to promote energy conservation and efficiency (...).
- Para 101: We will integrate disaster risk reduction, and climate change adaptation and mitigation considerations into (...) urban and territorial development and planning processes, including greenhouse gas emissions, **resilience-based and climate-effective design of spaces, buildings, and constructions**, services and infrastructure (...).
- Para 106: We will support the effective use of public resources for affordable and sustainable housing (...) and **encourage mixed-income development** to promote social inclusion and cohesion.



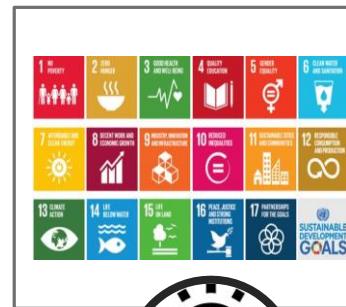
4. The Urban Nexus Approach as a Tool to Comply with Global Agendas?



The Urban Nexus as a Guiding Tool to Comply with Global Agendas

The Urban Nexus can...

- ✓ Act as action-oriented guiding principle
- ✓ Assist cities and other relevant stakeholders in realizing cross-cutting goals and targets within the vision of a circular economy approach



Urban Nexus Solutions

