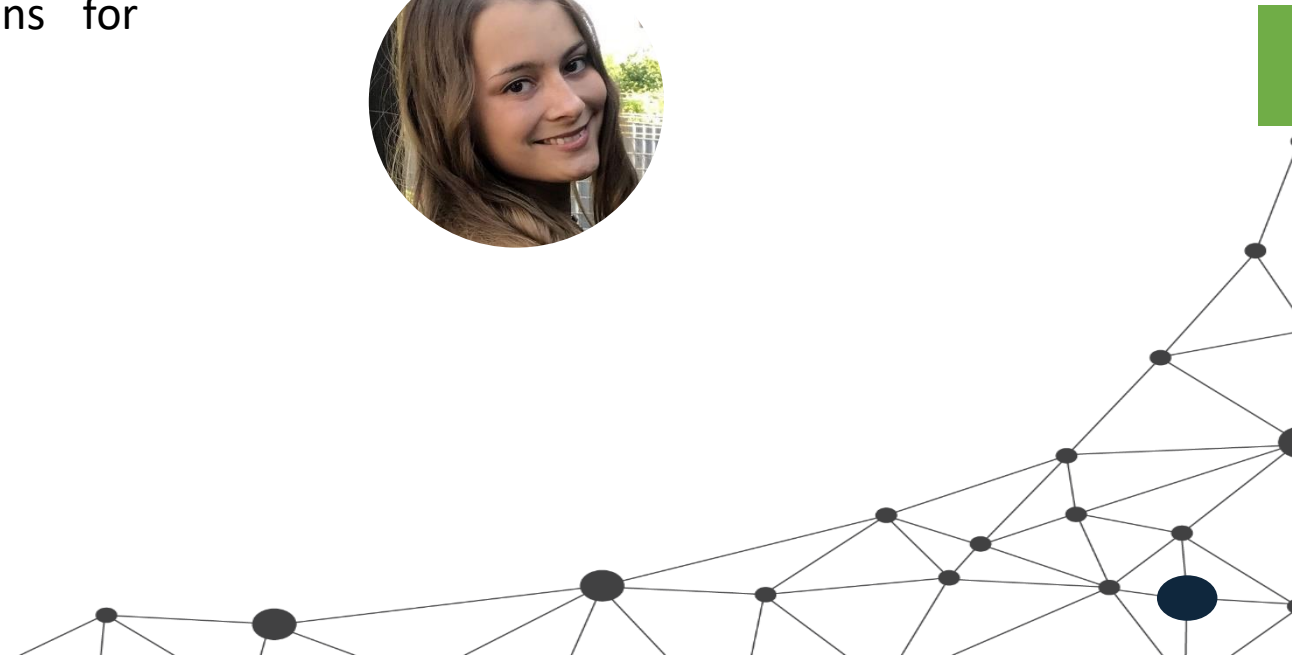


# Vanessa Bauer, Sustainable Infrastructure program at GIZ

The Solutions Lab “Scalable Solutions for Sustainable Infrastructure”



# Agenda

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- Why Sustainable Infrastructure?
- The GIZ-GSI Solutions Lab
  - Integrated Upstream Planning Workstream
- The Sustainable Infrastructure Tool Navigator

# Why Sustainable Infrastructure?

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- **Global Goals** ● ● ● Infrastructure provides us with the services that enable societies to function and economies to thrive. Sustainable infrastructure contributes to all 17 SDGs of the 2030 Agenda (72 % of sub-targets) and is key for achieving the Paris Agreement.
- **State of play** ● ● ● Inadequate transportation and energy networks, lack of basic sanitation facilities and insufficient communication infrastructure still affect billions of people.
- **Global infrastructure investment gap** ● ● ● \$15 trillion until 2040 (G20 Infrastructure Hub)
- **Challenge** ● ● ● Simply “more infrastructure” may have negative impacts on people and planet.
- **Imperative** ● ● ● Invest in “more sustainable infrastructure” (environmental, social, economic, institutional)



# The Solutions Lab

## Scaling for Sustainable Infrastructure

A joint initiative of GIZ and the Global Solutions Initiative

# The GIZ-GSI Solutions Lab

Scaling for  
Sustainable  
Infrastructure



Launched  
in October  
2019

25  
Change  
Agents

10-Months  
Process

What hinders broad  
uptake of Sustainable  
Infrastructure  
Solutions?

Policymaking,  
Business, Finance,  
Academia and  
Civil Society

Multi-Stakeholder Journey  
in Partnership With  
**Global Solutions  
Initiative**

# Workstreams

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1. Sustainability considerations at the pre-project level through integrated, upstream planning



2. Integration of meaningful sustainability considerations at project pipeline level



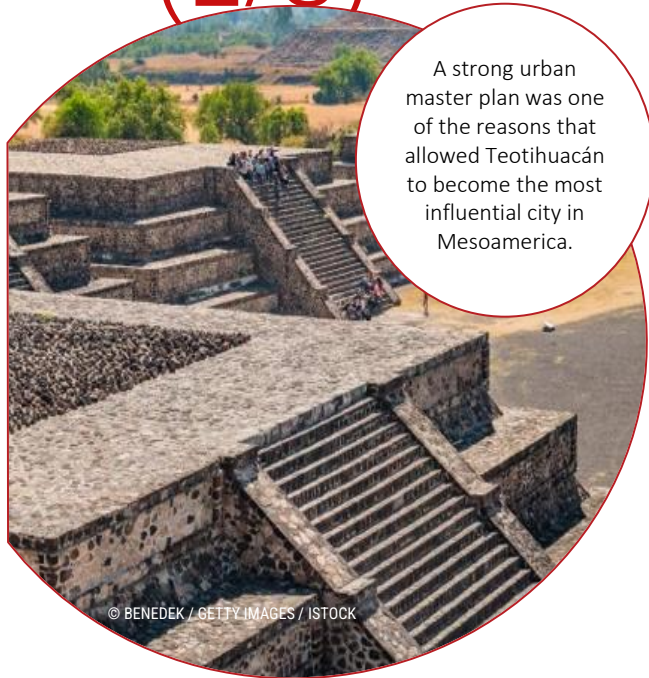
3. Gender-smart infrastructure development

**WORK CENTERED  
AROUND  
3 WORKSTREAMS**

Aim: Collecting and  
Sharing Expertise and  
Developing Scalable  
Solutions

# Integrated Upstream Planning

(1/3)



## The problem we identified...

- 2030 Agenda calls for integrated development approaches that consider interdependencies of sectors and regions
- Integrated upstream infrastructure planning offers potential savings of 40 %
- Yet, sustainability is often only addressed one infrastructure project at a time
- Result: Sustainable infrastructure development is limited to single infrastructure assets and fails to reap efficiency gains and positive spill-over effects from integrated planning approaches

## The implementation challenges we identified...

- Limited awareness and monitoring of possible efficiency gains
- Restricted funding in sector-siloed and project-driven budgets
- Lack of capacity to integrate planning of different sectors and complex technical models
- Insufficient data availability at necessary scale

# Integrated Upstream Planning (2/3)

## The solutions we identified...

- Situation of infrastructure investment decisions within broader context of long-term development strategies
- Policy reforms and adoption of integrated planning frameworks
- Employment of systems modelling tools that facilitate data-based decision making to ensure that infrastructure investments best balance sustainability considerations
- Strengthening of stakeholder engagement





# Integrated Upstream Planning (3/3)

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## Outputs and helpful resources



Guidance for public authorities to employ integrated upstream planning approaches (i.e. [Guidance Note](#) on Integrated Upstream Planning & [T20 Policy Brief](#)).



Events and experience exchange formats (i.e. [Solutions Lab Event](#) on Integrated Upstream Planning).



Systems modelling tools and data collection across sectors and regions (see [Sustainable Infrastructure Tool Navigator](#))



SUSTAINABLE  
INFRASTRUCTURE TOOL  
NAVIGATOR

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THEMES ▾

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GLOSSARY

[www.sustainable-infrastructure-tools.org](http://www.sustainable-infrastructure-tools.org)

# MAKING INFRASTRUCTURE SUSTAINABLE

Navigate 100+ rating systems, high-level principles and guidelines



## Navigate our Tool Catalogue

Please search by keyword or use the filter options below to narrow down your search results. If you filter by sector also consider selecting “Tools applicable to all sectors”, i.e. tools that are not specifically targeted at any sector, but relevant for a broad range of application contexts.



### Sectors

\* multiple selection possible

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Urban Planning         | <input type="checkbox"/> Waste                | <input type="checkbox"/> ICT/Digital                     |
| <input type="checkbox"/> Natural Infrastructure | <input type="checkbox"/> Water and Sanitation | <input type="checkbox"/> Buildings                       |
| <input type="checkbox"/> Energy                 | <input type="checkbox"/> Food Systems         | <input type="checkbox"/> Tools applicable to all sectors |
| <input type="checkbox"/> Transportation         | <input type="checkbox"/> Health               |  |



### Types of Tools

\* multiple selection possible

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Rating Systems            | <input type="checkbox"/> Principles                      | <input type="checkbox"/> Modelling Tools    |
| <input type="checkbox"/> Guidelines                | <input type="checkbox"/> Economic / Financial Valuations | <input type="checkbox"/> Impact Assessments |
| <input type="checkbox"/> Sustainability Benchmarks | <input type="checkbox"/> Project Preparation Tools       | <input type="checkbox"/> Standards          |



### Lifecycle Phases

\* multiple selection possible

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Enabling Environment | <input type="checkbox"/> Concept Design  | <input type="checkbox"/> Construction                |
| <input type="checkbox"/> Strategic Planning   | <input type="checkbox"/> Procurement     | <input type="checkbox"/> Operation and Maintenance   |
| <input type="checkbox"/> Prioritization       | <input type="checkbox"/> Finance         | <input type="checkbox"/> Decommissioning/Repurposing |
| <input type="checkbox"/> Project Planning     | <input type="checkbox"/> Detailed Design |  |



### Themes

\* multiple selection possible

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Biodiversity        | <input type="checkbox"/> Climate Change Mitigation | <input type="checkbox"/> Climate Change Adaptation |
| <input type="checkbox"/> Resource Efficiency | <input type="checkbox"/> Green Recovery            | <input type="checkbox"/> Gender                    |



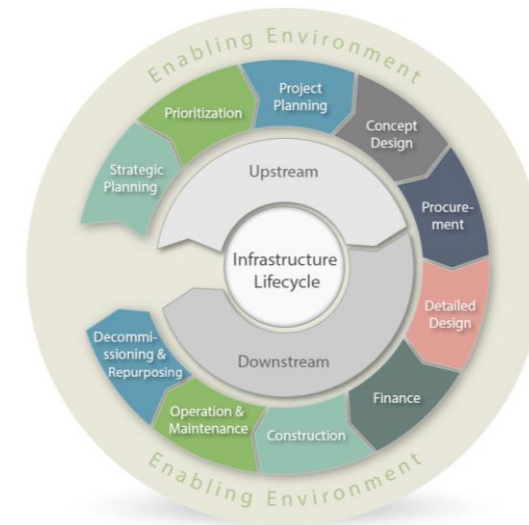
### Open Source

- ☐ Yes  
☐ No



### Language Availability

Select





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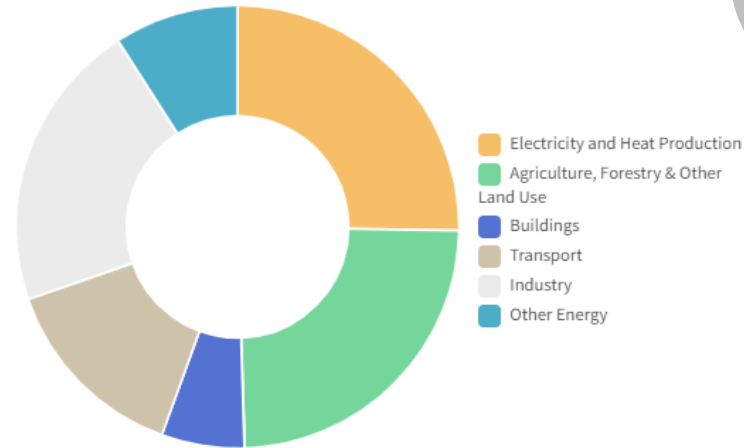


# Global decarbonization, the pathway to survival

Infrastructure worldwide and throughout history has directly contributed to the climate crisis—accounting for 60-70% of global greenhouse gas emissions through transportation, buildings, electricity production and industrial processes, such as cement production and waste treatment. The carbon-intensive sectors that account for most of the world's energy infrastructure—coal, oil, and natural gas—are both ecologically destructive and economically inefficient in today's economic landscape—especially considering unpriced negative externalities associated with extraction, greenhouse gas emissions, air pollution, and human health effects.

## Contribution of infrastructure to global greenhouse gas emissions

60-70 %



Direct GHG emission shares (in % of total anthropogenic GHG emissions) per sector in 2010. Source: [IPCC, 2018](#)

Example:  
Climate  
Change

## Roadmaps for mitigation

Sustainable infrastructure can play an enormous role in mitigating climate change and setting the world on a safe climate trajectory. Renewable energy, smart electricity grids, high-speed railway systems, electric vehicles, and inclusive

Countless examples exist of infrastructure that decarbonizes the economy:



Offshore wind farms



**The State of Cities Climate Finance**

By: CCFLA


This report examines the current state of urban climate investment, the barriers to reaching the needed investment levels, and the steps to overcoming these challenges.

 [READ FULL ARTICLE](#)

**Climate change adaptation of major infrastructure projects**

By: European Commission

This study maps existing resources for climate change adaptation in the 28 Member States of the EU that could facilitate the assessment of climate change aspects at project level.

 [READ FULL ARTICLE](#)

**Relevant sustainability tools**

**Mitigation Tools**



**Urban Adaptation Support Tool (UAST)**

 The Urban Adaptation Support Tool (UAST) assist cities, towns and other local authorities in developing, implementing and monitoring climate change adaptation plans. 

# Thank you!

## Contact Details



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# Discussion

