Digital Innovation, Climate Change and Cities at GIZ

Dr. Teresa Kerber

Head of Project „International Smart Cities Network" (ISCN)

giz
Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

German Advisory Council on Global Change:
Our common digital future (2019)

- Without digitization, the SDGs are not achievable
- In order to put the digital transformation at the service of the transformation towards sustainability, the potential and risks of digital technologies and solutions must be understood and aligned with the SDGs worldwide

Digital done right: Principles for Digital Development

Interlinking megatrends

Climate change, urbanization and digital transformation are closely interlinked and need to be addressed together. Sustainable development of cities is impossible without taking into account
I. the spatial growth, infrastructure needs and resource demands of urban areas with inefficient planning and management systems,
II. the impacts and required transformational adaptations arising from a changing climate with increasingly frequent and severe weather events, and
III. the reach and penetration of digital infrastructure, solutions and multi-stakeholder processes in physical, economic and social systems through digital transformation.

giz

Some use cases and examples from GIZ's work

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Need support in the implementation of global agendas at local level?

Approach	City WORKS
Project	Sector Project Cities, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
Countries & Cities	Brazil, Egypt, Ghana, Mauritania, Nepal, Palestinian Territories
Description	City WORKS is a digital toolkit that helps city authorities and urban planners to understand and connect global agendas with local vision and realities. It is a working aid for the implementation of global agendas at city level. The circular structure allows tools to be selected sequentially or non-linearly according to local needs. Structured in 8 steps in 3 phases, City WORKS offers multiple tools to strengthen participatory urban planning, transparent decision-making, and coordinated and collaborative strategies and actions. The online platform offers descriptions and explanations of all steps and background information, access to all tools, applications of web-based tools, good experiences as well as a community of practices. https://localising-global-agendas.org

giz

Need to set standards in comparison to the international efforts?

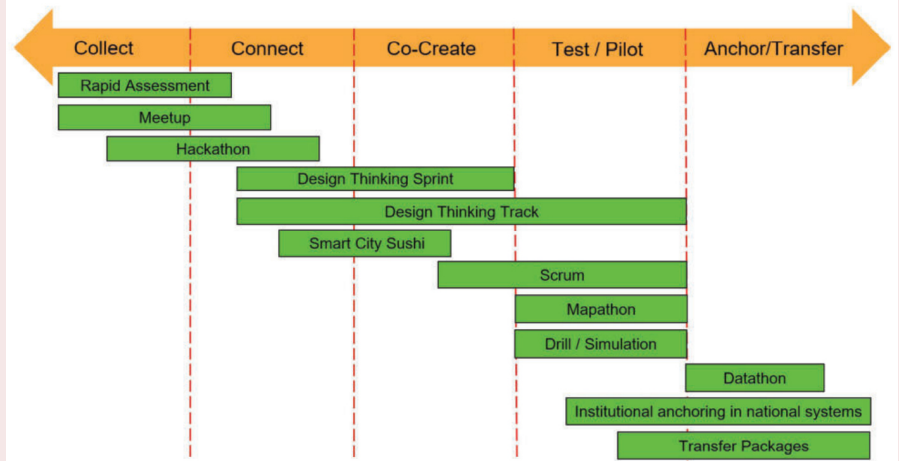|	
Approach	ClimateSmart Cities Assessment Framework 2.0
Project	Project Climate Smart Cities, implemented by GIZ on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) within the framework of the International Climate Initiative (IKI), in cooperation with the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	India
Description	The ClimateSmart Cities Assessment Framework (CSCAF) is a step towards holistic, climate responsive urban development. This is part of the Smart Cities Mission's focus on 3 pillars of performance: Liveability, Economic-ability and Sustainability. The "ClimateSmart Cities Assessment Framework" aims to adopt, implement, and disseminate the best practices adopted in Indian cities and further set standards in comparison to the international efforts towards the green, sustainable, and resilient urban habitats. https://www.niua.org/csc/

giz

Need to further define an urban challenge in your city?

Approach	Challenge Labs
Project	Advisory Project International Smart Cities Network, implemented by GIZ on behalf of the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	Brazil (Fortaleza), India (Bhubaneswar, Kochi, Coimbatore), Mexico (Guadalajara), Peru (Miraflores), Germany (Kaiserslautern, Wolfsburg, Amt Süderbrarup, Kassel, Bamberg)
Description	All you need to bring to the lab is an idea of a challenge, that you and your community is facing. In the lab we will work on that challenge. In the first part of the lab, we will collect all the users that are impacted by your challenge and select the ones, that will have the most impact in your community. On the second day of the lab, we will change the perspective and examine the challenge from the point of view from the defined user group. What are their wishes? What are their needs? What do they hope for? Then we will have a look at the current situation: What are obstacles, you have to overcome? What are constraints in place that can be an impediment in implementing the ideas? https://www.smart-city-dialog.de/solutionsforcities-digital-ideas-competition-2020

giz

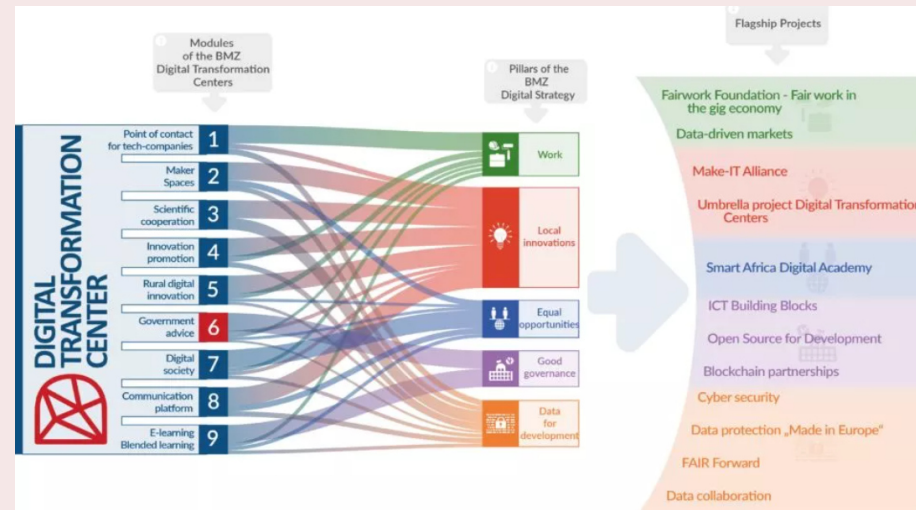# Is there already a digital solution for my urban challenge on the market?

Approach	International, digital ideas competition #SolutionsForCities
Project	Advisory Project International Smart Cities Network, implemented by GIZ on behalf of the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	Brazil (Fortaleza), India (Bhubaneswar, Kochi, Coimbatore), Mexico (Guadalajara), Peru (Miraflores), Germany (Kaiserslautern, Wolfsburg, Amt Süderbrarup, Kassel, Bamberg)
Description	The open social innovation format #SolutionsForCities was launched to support eleven partner cities in finding digital solutions for their local challenges, which became even more visible through the outbreak of the Covid-19 pandemic. The competition equipped the cities with tools and agile methods to define their current challenges along the six areas of action: Social Cohesion, Access, Vibrant Urban and Local Centres, Mobility, Resilience, and Digital Competence. With the global call for solutions all sectors of society were invited to submit digital solutions to solve the cities' challenges, tapping into the creative potential of start-ups, public administrations, research or the civil society. In a virtual Scalathon, the cities then developed concepts for the refinement and adaptation of the selected solutions together with the respective solution providers. https://www.smart-city-dialog.de/solutionsforcities-digital-ideas-competition-2020

giz

No digital solution on the market; need to create a new tailor-made, affordable one

Approach	Co-creating climate smart cities: a practical guide. Developing digital solutions for and with citizens and public sector organizations
Project	Global Project ICT-based Adaptation to Climate Change in Cities, implemented by GIZ on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) within the IKI framework, in cooperation with the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	India (Bhubaneswar, Kochi), Peru (Trujillo, Chiclayo), Mexico (Guadalajara, Metropolitan Area of Guadalajara and Zapopan)
Description	When we use what?

https://www.international-climate-initiative.com/en/news/article/co_creating_climate_smart_cities_a_practical_guide

giz

Need to foster the local innovation ecosystem for development?

Approach	Digital Transformation Centers
Project	Global Project Digital Transformation, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
Countries & Cities	Rwanda, Benin, Cameroon, Ghana, Indonesia, Iraq, Kenya, Kosovo, Morocco, Mexico, Namibia, Niger, Nigeria, Senegal, Tunisia, Vietnam
Description	Physical and virtual hubs supporting the advancement of digital ecosystems in partner countries. https://toolkit-digitalisierung.de/en/projects/digital-transformation-center/

giz

Need to support the growth of an enabling environment for start-ups to foster innovation?

Approach	Make-IT Initiative
Project	Sector Project Digital Transformation for the Make-IT Alliance in collaboration with Make-IT in Africa and Make-IT in Asia, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
Countries & Cities	Global approach
Description	The Make-IT Initiative supports the development of digital innovation ecosystems in the BMZ partner countries. The Make-IT Alliance is a network of mainly European digital actors with the aim to initiate cooperation projects on digital transformation. Make-IT Africa and Asia focus on the implementation in the respective regions.

giz

Other cities are making similar experiences. How to promote continuous learning and knowledge sharing?

Approach	Online Advisory Programme
Project	Advisory Project International Smart Cities Network (ISCN), implemented by GIZ on behalf of the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	Brazil, India, Mexico, Peru, Germany
Description	With diverse online formats, the ISCN has established a basis for exchange and knowledge transfer in the field of Smart Cities. The Online Advisory Programme facilitates online cooperation among partners and ensures digital networking in times of COVID-19. The programme sheds light on various topics in the field of urban digital transformation oriented towards the common good. In order to guarantee a practical relevance of the network discourse, the participants regularly discuss good practices worldwide. In addition, project development and implementation processes in the partner countries are accompanied in supplementary events and opportunities for peer consultation are created. https://www.smart-city-dialog.de/en/icsd#online-advisory-programme

giz

Going deeper

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Artificial Intelligence for sustainable urban development

Approach	AI-supported approaches for sustainable urban development (Study by Sector Project City-Regions 2030 in cooperation with AIT)
Project	Sector Project Cities, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
Countries & Cities	Case studies from Vietnam, Peru, France, Austria, United Kingdom and others
Description	On basis of promising, real-world use cases this study examines potentials of AI-supported approaches for sustainable urban development in six urban sectors (planning, finance, construction, water/ wastewater, waste management and mobility. The objective is to showcase what AI can already achieve in urban development today. Going deeper, for each of these pioneer projects it provides lessons learnt in terms of the technical framework employed, their approaches to data, risk and project management, followed by a discussion on transferability, cost vs. benefit and critical points that may arise. Thus, the study contributes valuable insights for development cooperation for the design and implementation of future urban AI projects. https://toolkit-digitalisierung.de/app/uploads/2021/03/GIZ-AIT-BMZ_2021_AI-supported-approaches-for-sustainable-urban-development.pdf

giz

City center is "dying" because of COVID-19 lockdowns?

Digital Solution	Mi Mercado AMG
Project	Advisory Project International Smart Cities Network, implemented by GIZ on behalf of the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	Mexico (Guadalajara)
Description	As a partner of the ISCN, the Institute for Planning and Development Management (IMEPLAN) of the Metropolitan Area of Guadalajara is implementing the digital solution „Mi Mercado AMG" with the support of GIZ. The online market solution was firstly adopted during the ideas competition #SolutionsForCities in cooperation with the Kampala Capital City Authority (KCCA), Uganda. It was awarded „Best Digital Solution for Vibrant Urban & Local Centres" The online sales platform enables local retailers to offer their products even during the pandemic. A sustainable delivery service guarantees the population to avoid physical contact and supports measures against the spread of the virus. It furthermore equips market vendors with tools and capacities to compete with online trade and digital modes of delivery. https://www.smart-city-dialog.de/solutionsforcities-digital-ideas-competition-2020#vibranturban

giz

Want suggestions on how to improve storm water management in the city to achieve the goals of the State Action Plan on Climate Change and NDCs?

Digital Solution	Mu City Savior (I am the City Savior), Winner for the category 'Best Climate Smart City Project' of the 'Smart City – Empowering India Awards 2019', Gov. of India
Project	Global Project ICT-based Adaptation to Climate Change in Cities and Project Climate Smart Cities, implemented by GIZ on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) within the IKI framework, in cooperation with the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	India (Bhubaneswar, Kochi)
Description	The "Mu City Savior" digital solution is developed using agile and co-creation methodologies to address the issue of urban flooding in Bhubaneswar, which is basically triggered by blockade in storm water drains. The system helps the city to ensure that it is does not get flooded due to blockage of storm water drainage. In addition, the digital solution also increases the efficiency of the city administration and reduces operational costs. https://www.international-climate-initiative.com/en/infotheque/publications/publication/article/mu_city_savior_preventing_urban_flooding_and_improving_public_services_with_a_co_created_digital_solution

giz

Need to preserve biodiversity and not enough staff to map and maintain green spaces and trees in the city to achieve the goals of the city's climate action plan?

Digital Solution	Árbol IoT (Internet of Trees)
Project	Global Project ICT-based Adaptation to Climate Change in Cities, implemented by GIZ on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) within the IKI framework, in cooperation with the German Federal Ministry of the Interior, Building and Community (BMI)
Countries & Cities	Mexico (Guadalajara, Metropolitan Area of Guadalajara and Zapopan)
Description	Árbol IoT, implemented in Mexico, is a cross-platform composed of a mobile and web app, and a network of low-cost sensors that allows citizens to contribute to the urban tree inventory and monitor the pollutants suspended in the environment, weather and noise on a street scale. https://www.international-climate-initiative.com/en/infotheque/publications/publication/article/arbol_iot_internet_of_trees

giz

Need support of a top expert on digitalization in cities?

Approach	Assignment of Integrated Senior Policy Advisor
Project	Project Experts for Municipal Partnerships Worldwide, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)
Countries & Cities	Jakarta (Indonesia), Berlin (Germany), Bangkok (Thailand)
Description	The city twinning between Jakarta and Berlin is strenghtened through the assignment of an Integrated Senior Policy Advisor in the Smart City Unit of Jakarta Provincial Government. Both cities are jointly working on the topics of urban innovation and digital transformation. The assigned Expert has supported Jakarta's Smart City Unit in developing its very first and holistic Smart City Action Plan as well as an Entrepreneurship policy strategy for the promotion of local tech start-ups through participatory and resident-centered design processes. Jakarta's first Future City Hackathon took place in 2020 creating prospects for local tech start-ups by directly working together with local government institutions. The winning tech start-ups will be accelerated within the planned „Future City Hub" – a municipal-led innovation center. The city-led Smart Change project is implemented in a trilateral cooperation with Bangkok in order to strengthen South-South collaboration. https://www.connective-cities.net/en/good-practice-details/gutepraktik/from-berlin-to-jakarta

giz

Thanks so much for your attention!

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH