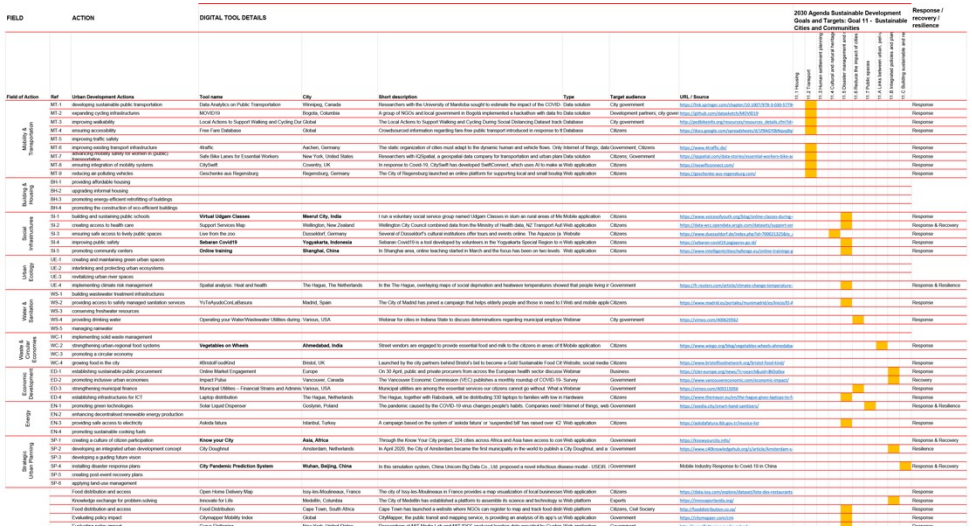
Webinar:
Lessons learnt from Covid 19 and Cities – from waste management to digital tools

14 Dezember 2021, 9:00 – 10:00 CET



Transformation - Urban Opportunities - Climate Change (TUrbOCliC)

Cross-sectoral group of the TUEWAS and SNGA network of GIZ

Programme

- **Welcome and Moderation: Vaishali Nandan,** Head of Project Climate Smart Cities and Joint Speaker of TUrbOCliC
- **Impact of Covid-19 on Waste Management system in India – Liju Mathew–** Technical Expert - Climate Smart Cities & Cities Combating Plastic Entering Marine Environment Projects
- **Covid-19 and Cities – Digital Solutions - Dr. François van Schalkwyk –** Expert, Lecturer, Consulting researcher
- **Interactive discussion with audience**

A Guide on
Waste Management in Indian Cities During & After COVID-19

15.12.2021

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Waste management and COVID19

- The COVID-19 pandemic has affected the world including India. Lockdowns allowed only essential services.
- Waste management as an essential service continued. While municipal waste management still remained operational, waste like construction and demolition (C&D) waste and bio-medical waste disposal remained a major concern.
- The crisis due to the pandemic has also altered the ways and forms of waste generation. The unexpected fluctuations in waste composition and quantity, necessitate modifications in the conventional waste management systems.
- Before the pandemic, bio-medical waste stream used to be separate and had a clear value chain, emerging from hospitals and ending at the hazardous waste disposal facilities. After the outburst of COVID-19, the value chain is scattered and there has been a significant rise in the quantity of bio-medical waste generated.
- According to a report submitted by Central Pollution Control Board (CPCB) to National Green Tribunal (NGT) in July' 20, India generated 101 TPD of bio-medical waste due to COVID-19. This is in addition to the regular generation of 609 TPD1.

Impact of COVID-19 pandemic

1. Rise in Bio-Medical Waste – Inadequate Collection and Disposal Infrastructure
   - Overall, the waste management system in Indian cities was not equipped to handle large quantities of bio-medical waste (BMW). There are approximately 200 bio-medical waste treatment facilities (BMWTF) which are currently working at 70-75% capacity, much higher than the prepandemic times.

2. Expansion in BMW Generating Sources - Increased Exposure of Sanitary Workers
   - After the outbreak of COVID-19, the sources of waste generation now also include households, quarantine homes, quarantine centers apart from hospitals, clinics and labs.
   - The collection of waste from hospitals, clinics and labs are usually done by the registered/authorized operator and their workers who are experienced in handling, collecting, and transporting the waste with optimal care so that infections are not transmitted.
   - However, for collection of waste from households, quarantine centers and homes, general sanitary workers are deployed. The sanitary workers are directly exposed to the waste, and therefore are under extreme health risk. Also, a major chunk of workers have left cities for their villages thus creating a shortage of workers in cities now.

Impact of COVID-19 pandemic

3. Lack of Safety Equipments

- As reported in many cities, workers are not provided adequate PPEs. The quarantine homes and centers are not fully aware of the waste segregation practice and there are instances of mixing of household waste with COVID-19 infectious waste.
- This makes the task of sanitary workers even more difficult and dangerous for their life. With quarantine moving to lanes and floors rather than the whole community there is uncertainty on how the waste pick-up for neighboring homes of the affected is to be handled.

4. Plastic Waste Generation on the Rise due to Increased Use of Single-use Plastics

- Over several years leading up to 2020, efforts were made to phase out single-use plastics. Slowly and steadily, the behavioral changes were observed in the consumption practices.
- Since the pandemic, there has been a significant increase in single-use plastic waste, such as medical waste from protective equipment including PP masks, gloves and gowns, and increased purchases of disposables such as plastic cutlery, cups, containers, low micron count carry bags, garbage bags and packaged drinking water as a safety measure to avoid contracting COVID-19.
- In addition to this, lockdown has also brought behavioral changes in purchasing practices, preference more towards online purchases- which also adds to the plastic waste.

Impact of COVID-19 pandemic

5. Informal Sector Struggling - Plastic Waste Recycling Sector Disrupted

- The waste-pickers provide a crucial role in the waste recycling sector and contribute to 60-70% recycling of the plastic waste in the country. When the lockdown was declared, the government did not include waste-pickers and kabadiwallas in the ‘essential services’ category. This led to workers leaving cities and thereby, impacting plastic recycling informal practices.
- On the other hand, since the lockdown, many waste management’s recycling facilities, including those working on the ground, halted their services.

Priority 1: Amendments in Waste Collection Mechanisms and Ensure Segregation of Infected Waste as a separate stream.

- With the expansion of healthcare to temporary hospitals, isolation centers, camps, quarantined homes, testing centers the health risk to sanitary workers is bigger and potential of transmission of virus from infected waste is very high. Therefore, waste segregation is important more from a health point of view
- CPCB also advises to segregate BMW at source where COVID-19 patients are staying. As per the guideline, the local authority has to provide a safety kit to the quarantine homes/centers for the same. They also should be briefed on the SOP including waste management.

Priority Interventions

Priority 1: Amendments in Waste Collection Mechanisms and Ensure Segregation of Infected Waste as a separate stream.

- Collaboration on mass-scale: Now, contaminated waste also comes as part of the general waste stream and will continue in the near future. It is important to make people aware of the additional waste streams. Collaboration at national and global level amongst interested organizations and individuals is very important to drive through this.

- Building capacities: Sanitary workers can also be instrumental in spreading awareness, as they are in direct contact with waste generator. Training can be provided to sanitary workers on educating people on potential hazards, safe waste handling procedures especially from areas of high COVID-19 risks, reporting of exposures and injuries, use of PPE, and hygiene practice at processing/recycling plants etc.

- Drivers and waste handlers who are transporting waste to the central processing and disposal sites also need training and education, informing them of the risks and handling of driving trucks with contaminated waste.

Priority Interventions

Priority 1: Amendments in Waste Collection Mechanisms and Ensure Segregation of Infected Waste as a separate stream.

- Creating a safe and healthy working environment for contaminated waste handlers/workers is also required. In the time of the COVID-19 pandemic, in addition to trainings on safe contaminated waste management, awareness raising on precautionary practices are also required, such as (i) Sick employees should stay home; (ii) Routine environmental cleaning of workplaces; (iii) Healthy employees notifying supervisors if a family member is sick; (iv) Employers notifying other employee if an employee is confirmed to have COVID-19, for possible exposure etc. Additionally, strategies to reduce human interaction and ensure distance between handlers at work should be put in place and work shifts could be revised.

- Awareness raising and communications for contaminated waste handlers and bulk generators is also required. This includes activities such as development of additional guidelines on handling,disposal and processing of waste generated (public communications); development of media (such as website, public service announcement) for hygiene practice and safe handling of contaminated waste management and so on.

Priority Interventions

Priority 2: Secure Interest of Informal Sector: Critical for Revamping Plastic Recycling Sector in the Country

- Ensuring informal workers are provided the means of living: The informal workers are crucial for the country's recycling sector. They are involved in waste picking, supporting the supply chain and conversion of plastic into resins, and also supplying into market. If we lose them now, the recycling market will not be able to revive in the current conditions. Therefore, it's important to ensure that the workers are at least provided basic means of livelihood.

- Local governments to encourage support and provide financial assistance to contractors: The contractors are currently either partially working or not working at all during lockdown. Local government should have continuous communication with contractors and waste processor to reassure them of their role and need. They can also be provided financial assistance

- Provision of PPEs: Waste pickers are usually out of sight and not provided PPEs. During this time, the local government shall provide the requisite PPEs to them.

Priority Interventions

Priority 3: Enhance Recycling Infrastructure and Encourage Recycling Efforts: Critical for Plastic Recycling Sector

- Fuel the supply chains and encouraging start-ups: It is necessary to maintain the supply of waste (input) into processing facilities through continued and optimized operations. Many cities are witnessing new projects and partnerships spurring for plastic waste specially. The ULBs should encourage and identify start-ups to avail these opportunities and provide necessary support such as permissions, quantity diversion, land, manpower, equipment & machinery etc.

- Off-take consumption: The government should plan for procuring the products made from waste such as recycled plastic and compost.

THANK YOU

COVID-19 and Cities

Information and digital solutions

to build back better

Background

- Covid-19 poses an **unprecedented emergency** across the globe.
- **Urban areas and their citizens** are under pressure to **respond rapidly and effectively** to a public health crisis that simultaneously **affects social cohesion and the economy**. The situation in densely populated communities is particularly dangerous due to **structural inequalities** and **enduring vulnerabilities.** Cities are (still) on the **frontline** of this pandemic.
- While there are **serious challenges**, the Covid-19 crisis can also be seen as an **opportunity** for cities to **rethink existing processes and paradigms**, and to reinvent themselves and start engaging in **sustainable transformation**.
- It is important to not only consider the **immediate response** to Covid-19 but also **short-, medium- and long-term social and economic consequences** of the pandemic.
- **International cooperation** for urban development will need to start to **think creatively** for the medium- and long-term recovery of cities, against the background of building back better / build better before

Objective

- The main goal of the initiative is to **promote knowledge sharing** and **peer-learning** on the topic of Covid-19 and cities through **analysis of digital solutions** that can support cities towards **response, recovery and resilience**
- The objective is to **examine existing digital solutions** and their relevance to cities facing the pandemic.
- This study builds upon the working group's 2019/2020 work on "**Compilation and analysis of digital tools for climate-resilient and low-carbon urban development**".
  - 1. Database of digital solutions
  - 2. Survey
  - 3. Some good practices

Fields of Action

- Mobility & Transportation
- Building & Housing
- Social Infrastructures
- Urban Ecology
- Water & Sanitation
- Waste & Circular Economies
- Economic Development
- Energy
- Strategic Urban Planning

https://tuewas-asia.org/wp-content/uploads/2020/09/2020_GIZ_Digital_Solutions_TUrbOCliC.pdf

1. Database of digital solutions –> show around

FIELD		ACTION	DIGITAL TOOL DETAILS						2030 Agenda Sustainable Development Goals and Targets: Goal 11 - Sustainable Cities and Communities										Response / recovery / resilience
Field of Action	Ref	Urban Development Actions	Tool name	City	Short description	Type	Target audience	URL / Source	11.1 Housing	11.2 Transport	11.3 Human settlement planning	11.4 Cultural and natural heritage	11.5 Disaster management and	11.6 Reduce the impact of cities	11.7 Public spaces	11.A Links between urban, peri-	11.B Integrated policies and plan	11.C Building sustainable and re	
Mobility & Transportation	MT-1	developing sustainable public transportation	Data Analytics on Public Transportation	Winnipeg, Canada	Researchers with the University of Manitoba sought to estimate the impact of the COVID-	Data solution	City government	https://link.springer.com/chapter/10.1007/978-3-030-5779											Response
	MT-2	expanding cycling infrastructures	MOVID19	Bogota, Columbia	A group of NGOs and local government in Bogotá implemented a hackathon with data fro	Data solution	Development partners; city gover	https://github.com/datasketch/MOVID19											Response
	MT-3	improving walkability	Local Actions to Support Walking and Cycling Dur	Global	The Local Actions to Support Walking and Cycling During Social Distancing Dataset track	Database	City government	http://pedbikeinfo.org/resources/resources_details.cfm?id=											Response
	MT-4	ensuring accessibility	Free Fare Database	Global	Crowdsourced information regarding fare-free public transport introduced in response to tl	Database	Citizens	https://docs.google.com/spreadsheets/d/1f9AGY0kNqvq9q											Response
	MT-5	improving traffic safety																	
	MT-6	improving existing transport infrastructure	4traffic	Aachen, Germany	The static organization of cities must adapt to the dynamic human and vehicle flows. Only	Internet of things; data	Government; Citizens	https://www.4traffic.de/											Response
	MT-7	advancing mobility safety for women in (public) transportation	Safe Bike Lanes for Essential Workers	New York, United States	Researchers with IQSpatial, a geospatial data company for transportation and urban plan	Data solution	Citizens; Government	https://iqspatial.com/data-stories/essential-workers-bike-a											Response
	MT-8	ensuring integration of mobility systems	CitySwift	Coventry, UK	In response to Covid-19, CitySwift has developed SwiftConnect, which uses AI to make a	Web application	Citizens	https://nxswiftconnect.com/											Response
	MT-9	reducing air-polluting vehicles	Geschenke aus Regensburg	Regensburg, Germany	The City of Regensburg launched an online platform for supporting local and small boutiq	Web application	Citizens	https://geschenke-aus-regensburg.com/											Response
Building & Housing	BH-1	providing affordable housing																	
	BH-2	upgrading informal housing																	
	BH-3	promoting energy-efficient retrofitting of buildings																	
	BH-4	promoting the construction of eco-efficient buildings																	
Social Infrastructures	SI-1	building and sustaining public schools	**Virtual Udgam Classes**	**Meerut City, India**	I run a voluntary social service group named Udgam Classes in slum an rural areas of Me	Mobile application	Citizens	https://www.voicesofyouth.org/blog/online-classes-during-											Response
	SI-2	creating access to health care	Support Services Map	Wellington, New Zealand	Wellington City Council combined data from the Ministry of Health data, NZ Transport Aut	Web application	Citizens	https://data-wcc.opendata.arcgis.com/datasets/support-ser											Response & Recovery
	SI-3	ensuring safe access to lively public spaces	Live from the zoo	Dusseldorf, Germany	Several of Düsseldorf's cultural institutions offer tours and events online. The Aquazoo (a	Website	Citizens	https://www.duesseldorf.de/index.php?id=700021325&tx_											Response
	SI-4	improving public safety	**Sebaran Covid19**	**Yogyakarta, Indonesia**	Sebaran Covid19 is a tool developed by volunteers in the Yogyakarta Special Region to re	Web application	Citizens	https://sebaran-covid19.jogjaprov.go.id/											Response
	SI-5	promoting community centers	**Online training**	**Shanghai, China**	In Shanghai area, online teaching started in March and the focus has been on two levels:	Web application	Citizens	https://www.intelligentcitieschallenge.eu/online-trainings-g											Response
Urban Ecology	UE-1	creating and maintaining green urban spaces																	
	UE-2	interlinking and protecting urban ecosystems																	
	UE-3	revitalizing urban river spaces																	
	UE-4	implementing climate risk management	Spatial analysis: Heat and health	The Hague, The Netherlands	In the The Hague, overlaying maps of social deprivation and heatwave temperatures showed that people living in	Government	https://fr.reuters.com/article/climate-change-temperature-												Response & Resilience
Water & Sanitation	WS-1	building wastewater treatment infrastructures																	
	WS-2	providing access to safely managed sanitation services	YoTeAyudoConLaBasura	Madrid, Spain	The City of Madrid has joined a campaign that helps elderly people and those in need to l	Web and mobile applic	Citizens	https://www.madrid.es/portales/munimadrid/es/Inicio/El-A											Response
	WS-3	conserving freshwater resources																	
	WS-4	providing drinking water	Operating your Water/Wastewater Utilities during	Various, USA	Webinar for cities in Indiana State to discuss determinations regarding municipal employe	Webinar	City government	https://vimeo.com/400620562											Response
	WS-5	managing rainwater																	
Waste & Circular Economies	WC-1	implementing solid waste management																	
	WC-2	strengthening urban-regional food systems	**Vegetables on Wheels**	**Ahmedabad, India**	Street vendors are engaged to provide essential food and milk to the citizens in areas of tl	Mobile application	Citizens	https://www.wiego.org/blog/vegetables-wheels-ahmedaba											Response
	WC-3	promoting a circular economy																	
	WC-4	growing food in the city	#BristolFoodKind	Bristol, UK	Launched by the city partners behind Bristol's bid to become a Gold Sustainable Food Cit	Website; social media	Citizens	https://www.bristolfoodnetwork.org/bristol-food-kind/											Response
Economic Development	ED-1	establishing sustainable public procurement	Online Market Engagement	Europe	On 30 April, public and private procurers from across the European health sector discusse	Webinar	Business	https://iclei-europe.org/news/?c=search&uid=iBiOo0ox											Response
	ED-2	promoting inclusive urban economies	Impact Pulse	Vancouver, Canada	The Vancouver Economic Commission (VEC) publishes a monthly roundup of COVID-19-	Survey	Government	https://www.vancouvereconomic.com/economic-impact/											Recovery
	ED-3	strengthening municipal finance	Municipal Utilities – Financial Strains and Adminis	Various, USA	Municipal utilities are among the essential services our citizens cannot go without. What a	Webinar	Government	https://vimeo.com/405515056											Response
	ED-4	establishing infrastructures for ICT	Laptop distribution	The Hague, Netherlands	The Hague, together with Rabobank, will be distributing 330 laptops to families with low in	Hardware	Citizens	https://www.themayor.eu/en/the-hague-gives-laptops-to-f											Response
Energy	EN-1	promoting green technologies	Solar Liquid Dispenser	Gostynin, Poland	The pandemic caused by the COVID-19 virus changes people's habits. Companies need t	Internet of things; web	Government	https://seedia.city/smart-hand-sanitizers/											Response & Resilience
	EN-2	enhancing decentralised renewable energy production																	
	EN-3	providing safe access to electricity	Askida fatura	Istanbul, Turkey	A campaign based on the system of 'askida fatura' or 'suspended bill' has raised over €2	Web application	Citizens	https://askidafatura.ibb.gov.tr/invoice-list											Response
	EN-4	promoting sustainable cooking fuels																	
Strategic Urban Planning	SP-1	creating a culture of citizen participation	**Know your City**	**Asia, Africa**	Through the Know Your City project, 224 cities across Africa and Asia have access to con	Web application	Government	https://knowyourcity.info/											Response & Recovery
	SP-2	developing an integrated urban development concept	City Doughnut	Amsterdam, Netherlands	In April 2020, the City of Amsterdam became the first municipality in the world to publish a City Doughnut, and a		Government	https://www.c40knowledgehub.org/s/article/Amsterdam-s-											Resilience
	SP-3	developing a guiding future vision																	
	SP-4	installing disaster response plans	**City Pandemic Prediction System**	**Wuhan, Beijing, China**	In this simulation system, China Unicom Big Data Co., Ltd. proposed a novel infectious disease model - USEIR. I	Government	Mobile Industry Response to Covid-19 in China												Response & Recovery
	SP-5	creating post-event recovery plans																	
	SP-6	applying land-use management																	
		Food distribution and access	Open Home Delivery Map	Issy-les-Moulineaux, France	The city of Issy-les-Moulineaux in France provides a map visualization of local businesses	Web application	Citizens	https://data.issy.com/explore/dataset/liste-des-restaurants											Response
		Knowledge exchange for problem-solving	Innovate for Life	Medellín, Columbia	The City of Medellín has established a platform to assemble its science and technology se	Web platform	Experts	https://innovaporlavida.org/											Response
		Food distribution and access	Food Distribution	Cape Town, South Africa	Cape Town has launched a website where NGOs can register to map and track food distri	Web platform	Citizens, Civil Society	http://fooddistribution.co.za/											Response
		Evaluating policy impact	Citymapper Mobility Index	Global	CityMapper, the public transit and mapping service, is providing an analysis of its app's us	Web application	Government	https://citymapper.com/cmi											Response
		Evaluating policy impact	Curve Flattening	New York, United States	Researchers at MIT Media Lab and MIT IDSS analysed location data provided by Cuebiq	Web application	Government	https://curveflattening.media.mit.edu											Response

2. Survey

- Good design and structure, aiming to capture **challenges** but also **concrete solutions** (at project and at city level)
- **Very difficult** to get feedback, even in simplified format and reaching out globally
- Sample of 10 responses

2. Survey results

Digital solutions

- Virtual meetings (Zoom; FB Messenger; WhatsApp; Mural; Miro; BrightSpace)
- Digital data collection (HARD)
- Digital payments

3. Some good practices

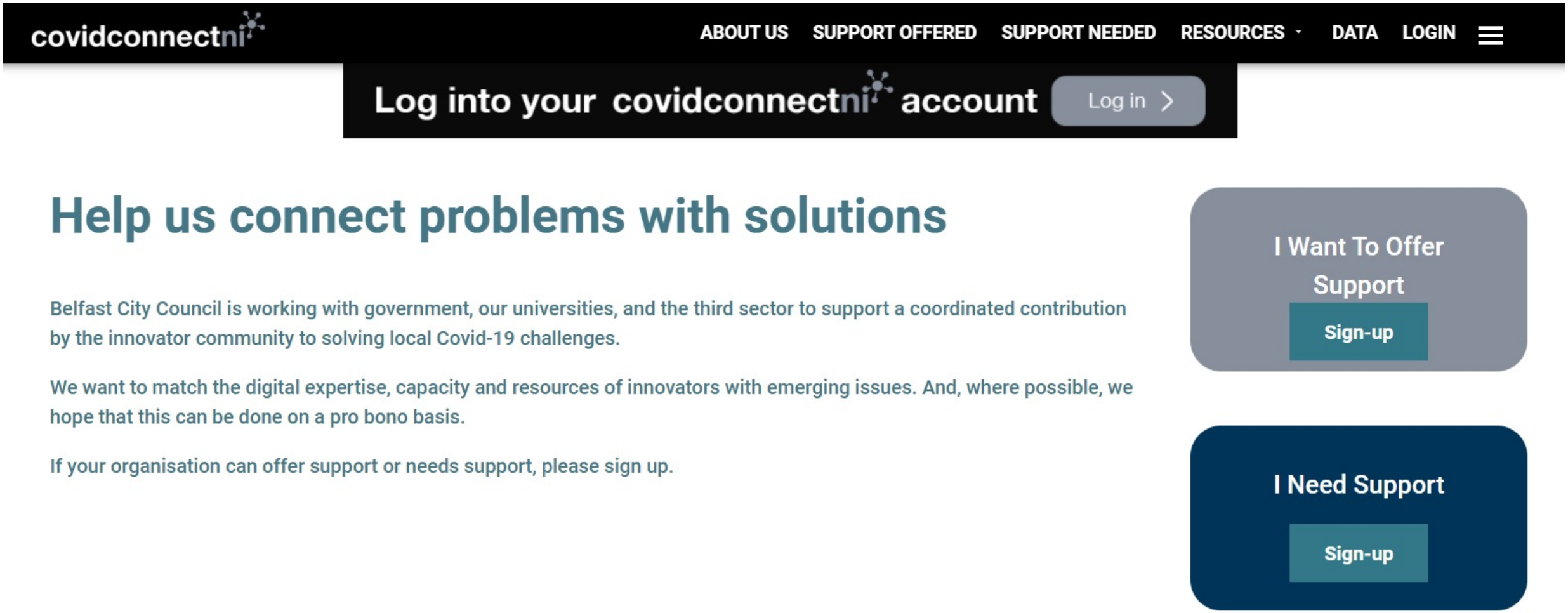
Bogota: Linking planning tools, data and events

According to a *Connective Cities* report, one of the best practices in **terms of governance**:

1. City Hall Health Department used an **artificial intelligence (AI)** tool in order to identify Covid-19 **hot-spots** within the city.
2. The **Transmissibility Index**, measuring the **severity of transmission in a given sub-district**, was developed to run **calculations for each sub-district on a daily basis**.
3. This allowed for **timely detection of emerging virus clusters,** and thus the city managed to impose new restrictions and set up new epidemiologic centres in a targeted and timely manner.
4. This has made the process faster and provided an evidence-base on which to make decisions about lockdowns.

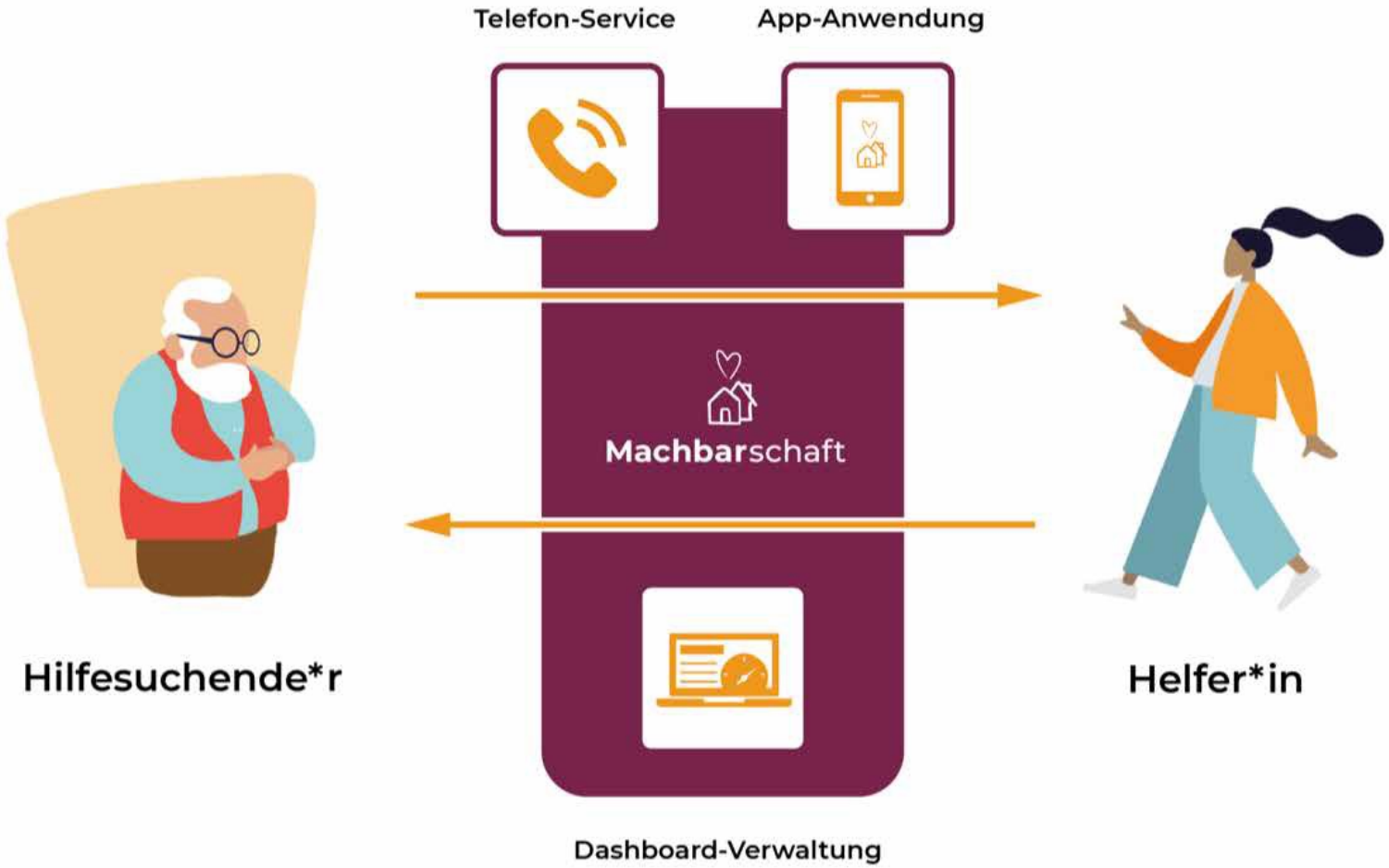
Source: interview with the District Secretary of Health of Bogota, Dr. Alejandro Gomez.

Belfast: Linking problems and digital solutions / needs and offers



https://www.covidconnectni.com/dashboard

Barsinghausen: Machbarschaft: Leaving no one behind



https://www.machbarschaft.jetzt/

Berlin: Window Flicks: Rethinking urban spaces

http://www.windowflicks.de/

Conclusions

“Most COVID-related apps have already disappeared... there is a need to reflect on these cases since a lot of resources are being spent in digital products that are likely to fail due to lack of proper technical and governance foundations.”

— Survey respondent

Theme:

Connecting people.

People solve crises.

Technology is an enabler; not a solution.

Consider the principles!

Principles *for* Digital Development

- Design with the User
- Understand the Existing Ecosystem
- Design for Scale
- Build for Sustainability
- Be Data Driven
- Use Open Standards, Open Data, Open Source, and Open Innovation
- Reuse and Improve
- Address Privacy & Security
- Be Collaborative

digitalprinciples.org | #digitalprinciples

2030 Agenda Implementation Principles

Universality GIZ programmes need to support the nationally defined goals for implementing the 2030 Agenda in its partner countries.

Shared responsibility More emphasis must be placed on the inclusion of relevant stakeholders and on the structuring of multi-stakeholder partnerships.

Integrated approach In the implementation of programmes, all dimensions of sustainability and the increased use of synergies between measures, policy fields and sectors need to be considered.

Leave no one behind Stronger focus must be placed on marginalised population groups, and there should be a push for more disaggregated data and target-group analyses to understand and address the concenrs of those who are typically left behind.

Accountability A stronger focus needs to be put on reporting the GIZ contribution to the implementation of the 2030 Agenda as well as supporting partner countries in their efforts of strengthening statistical capacities and the reporting mechanisms to inform proper review and tracking of progress.

giz

Digital government – challenges and learnings

- **Data management** and **risk communications** have been in a constant process of adaptation throughout the pandemic.
- **Digital government** is an **essential feature for public administration and disaster management and needs to be strengthened**

Lessons for digital government

• Increase the role and use of Information and Communications Technologies (ICTs) in governmental procedures and processes
• Coordinate, through those ICTs, databases across different offices and Ministries, and levels of government
• **Invest in the digitalization of society**, from schools to public offices, to investment in infrastructure and subsidies for equipment
• **Integrate society into a feedback loop of communication through digital tools,** as a measure of accountability and as a constant process of evaluation of services

Examples from Central America

• Establish "**home office**" schemes for government employees during the response and recovery of COVID-19
• Use ICTs to **centralize information about the spread of COVID-19** and the **amount of resources available** across hospitals and clinics.
• Apps could also be useful to **communicate risk** to the public and provide medical appointments through video calls
• Use communication apps (e.g. WhatsApp), to **continue online classes during the recovery phase**, or as part of hybrid, combined online and face-to-face schemes
• Make **public procedures accessible through online platforms**, so that people do not need to visit public offices during the recovery phase

Challenges to address digital governance

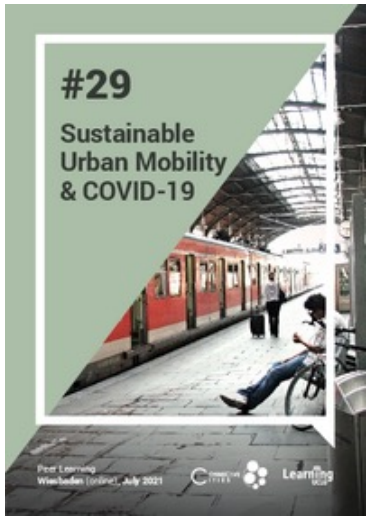
• Integrate **digitalization of public services** into the wider **public agenda**
• Identify **infrastructure/resources** that are available, identify new resources needed
• **Involve communities** in the process of digitalization and government evaluation
• Generate strategies to support inter-organizational cooperation

Source: ECLAC; Manchester Recovery Database

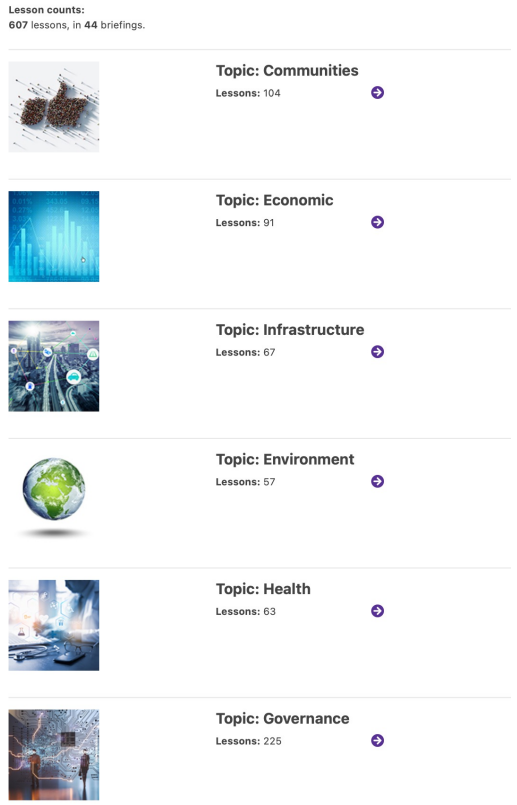
Thank you!

[Research of good practices on the subject of health, business, and governance at municipal level during the COVID-19 pandemic]

[Urban Creativity Now! The Playbook for the Post-Covid City]



[Sustainable Urban Mobility and COVID-19]



[Database of international lessons for Recovery and Renewal]

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn

Friedrich-Ebert-Allee 36 + 40
53113 Bonn, Germany
T +49 228 44 60 - 0
F +49 228 44 60 - 17 66

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79 - 0
F +49 61 96 79 - 11 15

E info@giz.de
I www.giz.de

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH