GFA CONSULTING GROUP

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RESILIENT CITIES ARE LIVEABLE CITIES

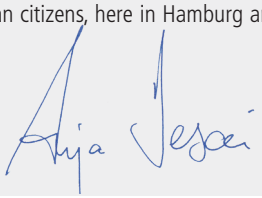
EDITORIAL

Most GFA colleagues including myself live and work within an urban environment. We rely on our cities' infrastructure to get to work, to do our shopping, to have electricity, water, and a variety of services available. The unprecedented global pandemic has now predominantly hit urban areas and reduced personal space. Covid-19 has brutally uncovered the lack of resilient responses to shock and stress. While the pandemic has put a spotlight on socio-economic inequalities and poor health systems, it also provides us with a unique opportunity to foster a green and resilient recovery.

Together with governments, civil society and businesses around the globe, GFA Consulting Group has been working towards sustainable and resilient development as set out by the Agenda 2030, the Paris Agreement and the New Urban Agenda. Cities are often regarded key to achieving these international agendas as they are both the cause of and the solution to climate change.

Through our projects worldwide, and at home in Hamburg, GFA has been contributing to these efforts. We have built extensive experience in supporting cities through the promotion of renewable energy, water and waste management, green mobility, integrated planning and digitization. We at GFA believe that no single action makes a city resilient to shock and stress. Therefore, we think and work across sector boundaries to develop and promote adequate solutions. Our technical working group on Resilient Cities combines expertise on climate-resilient urbanization from all relevant business units within the GFA Group. We embrace this subject as it is of critical importance for all of us as urban citizens, here in Hamburg and anywhere else in the world.

Anja Desai
Managing Director



We live in the century of cities. An estimated 68% of the global population will live in cities by 2050 while 70% of the needed urban infrastructure is yet to be built. Hence, urban areas face multidimensional challenges that can partly be attributed to climate change, an economic divide and social inequalities. Covid-19 has further aggravated these problems. This newsletter presents GFA's integrated approach towards urban resilience and discusses tools that support local governments in facing future shocks and stresses.

Not least because of the Paris Agreement, the term resilience has found its way into government agendas and action plans. GFA supports governments worldwide in their ambitions towards resilient cities. Urban resilience describes the capacity of cities to function so that people living and working in cities – particularly the poor and vulnerable – survive and thrive no matter what stresses or shocks they encounter.

It is crucial for local governments to address resilience from an inclusive and integrated perspective. This will safeguard a city's functioning and paves the way to achieving the Agenda 2030 and the New Urban Agenda. GFA promotes this integrated approach across all its business units by working towards a holistic understanding of resilience. Urban areas around the globe that have strategies to address people, systems and organizations tend to be more resilient to the impacts of sea level rise, air pollution, epidemics, and famines alike. Moreover, a local government that is prepared for emergencies usually has a robust system of policies and processes in place that ensures the everyday provision of services. GFA has recognized the interlinkages of industries in urban areas and breaks up silo thinking by engaging in cross-cutting clusters such as Climate & Energy or Digital Innovation. In the company-wide Resilient Cities working group, knowledge from all GFA units is pooled to foster integrated approaches, e.g. on urban energy, water and transport infrastructure. The company uses a wide variety of methods and tools to support partners in their daily efforts towards resilient, sustainable and liveable cities.

INTERNATIONAL DISCUSSIONS AT A GLANCE

AN INTERVIEW WITH KATRIN BRÜBACH FROM THE GLOBAL RESILIENT CITIES NETWORK

Urban resilience is a multi-dimensional task that requires the cooperation of a multitude of organizations and individuals. The Global Resilient Cities Network – the successor to 100 Resilient Cities pioneered by the Rockefeller Foundation – is a reference point in this respect. Katrin Brübach, a former GFA colleague, works for the Global Resilient Cities Network. GFA interviewed her on resilience in light of recent developments.

What are the biggest challenges and opportunities for the development of climate resilient cities?

When you ask our cities how climate change affects them, flooding tends to be the most common answer followed by heat-waves, storms, and droughts. Science shows that by 2050 eight times as many city dwellers than today will be exposed to heat and 800 million more people could be affected by rising seas. Cities cannot afford to underestimate any of these hazards. Many of them are seeing the impacts of climate change which, unchecked, will subject populations to risk and suffering, push struggling services to the brink and undermine city efforts to protect their citizens. Today, cities are home to more than half the global population. And they are centers of opportunity and innovation. This is our opportunity. Adaptation efforts can take advantage of this transformative energy. However, we need to put a much larger effort into building more resilient, equitable cities because climate change exacerbates existing inequities by widening the gap between people with wealth and people living in poverty. We cannot accept a world where only some can adapt, and others cannot.

What are the global pandemic effects on resilient cities movement?

I think for most resilience practitioners, this period of time feels like the start of a period of transformation. A huge number of people worldwide have suddenly become intensely aware of the urban systems we interact with and how fragile they suddenly seem. The pandemic has exposed underlying stresses that will affect our recovery work over years and decades to come as they threaten the foundation that our cities are built upon. However, we also cannot turn away from recent unrest and other tragedies. As a global citizen, I feel it is difficult to balance frustration with patience on issues that have little to do with the virus, climate change or water but everything with justice and empathy. What we are learning at the moment is: Complex problems cannot be solved with simple answers. Going forward, resilient solutions must match the scale of the problems our cities face.

What kind of factors are influencing a resilient recovery?

Covid-19 is the challenge of our generation – and how we respond and recover will either lay the foundation for a more equitable and climate-responsive future or it will reinforce old systems that leave poor and vulnerable people behind. We recently launched Cities for a Resilient Recovery (C2R). C2R is a coalition of cities and resilience practitioners committed to taking leadership, embedding resilience in recovery, and to supporting each other through the recovery planning process. Cities can exchange

knowledge and learning, take stock of the current situation, and identify key actions and initiatives to address the impacts of the crisis and further future-proof their systems. In our understanding, peer-to-peer learning, knowledge exchange and resilience leadership are critical for a resilient recovery.

Could you tell us about a city's approach that inspired you in recent months or years?

Cape Town joined our network in 2016, committed to building greater resilience in the face of climate change. I had the honor and the pleasure to work with the city during the 2018 drought, and support them during the development of their resilience strategy. We worked hard identifying measures that would allow the city to enhance the resilience of the water system it depends on. Cape Town's innovative resilience strategy and unique process of self-analysis by learning from the crisis truly earned its praise. For the city, resilience is not a narrow word but a value like justice and wisdom – a process rather than a product. I strongly believe that their resilience strategy established a solid foundation not only to respond to the pandemic but also for a resilient recovery that is grounded in an inclusive and positive culture with infinite potential for productivity, innovation and economic development.

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GFA APPROACHES TO RESILIENT CITIES

A positive transition towards a climate-resilient urban development relies on a balance of tried, adapted and new approaches. GFA has developed and tested a multitude of such approaches, snapshots of which are presented below.

SECTORAL MITIGATION STRATEGIES

GFA regularly applies a sectoral approach when striving to reduce emissions. Greenhouse gas (GHG) emissions inventories, low-carbon roadmaps and real-life pilot projects can effectively support sector transformation and low-carbon strategies. Aiming at the reduction of emissions from refrigerated transport in South Africa, GFA's subsidiary HEAT supported the Gesellschaft für Internationale Zusammenarbeit (GIZ) project Mitigating Emissions in the Transport Refrigeration Sector in South Africa in 2013-2017, funded by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU).

Impact – GFA identified measures to reduce emissions from refrigerated transport in trucks. The switch to natural refrigerant-based cooling systems and increased efficiency of those systems led to less direct emissions from the refrigerants and less indirect emissions from diesel to operate the equipment. Together with Transfrig, the leading local manufacturer, our experts developed and tested prototypes of climate-friendly refrigeration systems with 30% less energy consumption.

Contribution to climate resilience – An improved cold chain leads to better food security and less health risks associated with perishable food. Optimized logistics and more efficient refrigeration systems cause less air pollution than conventional systems. Working with local companies regarding innovative technologies enhances vocational training, job opportunities and supports local operators and technology providers in their efforts to "green" their business. Moreover, the sector strategy introduced Measuring, Reporting and Verification (MRV) system procedures that can also be applied in other sectors.

Application in additional projects – Sectoral mitigation strategies are the basis for GFA work in several HEAT projects, e.g. in the Low Carbon Mobility Plan in Bhubaneswar, India that formulates the city's vision in respect to a transition towards low-carbon transport systems until 2040, or the Nationally Appropriate Mitigation Actions (NAMA) regarding refrigeration and air conditioning in Thailand.

CLIMATE ADAPTATION NOTES

Climate Adaptation Notes create a new and innovative funding source for water- and waste-related climate adaptation infrastructure projects in both the private and public sector in Southern Africa that have struggled to attract long-term sustainable financing. GFA Climate & Infrastructure and Ashburton Investments have developed the concept as part of the Global Climate Lab supported by the Climate Policy Initiative, the Secretariat of the Lab.

Impact – The new mechanism attracts investment from institutional investors and impact investment funds, while creating a new source of credit for commercial banks that are well-suited and willing to lend short-term and take on project performance risk for early-stage water and waste-related climate adaptation-based projects. The Notes are structured to be tradeable and repayable with interest over an agreed period aligned with the project's life span and cash flows. This creates a stable and dependable cash flow stream for institutional investors. The Notes will be credited with concessional sub-ordinated funding, catalyzing larger-scale private institutional investment in the critical area of climate adaptation.

Contribution to climate resilience – The target area Southern Africa has some of the most water-scarce countries in the world, and the Notes should enable infrastructure projects on the drawing board to be implemented and contribute to much needed climate resilience in the region.

TACTICAL URBANISM

The use of space is sometimes difficult to imagine. Therefore, GFA uses visual aids for residents to experience the change in land-use in public spaces by temporarily painting new sidewalks, bicycle lanes and streets onto the existing pavement in the GIZ project Sustainable Integrated Transport Systems for Smart Cities in India in 2018-2021, funded by the Federal Ministry of Economic Cooperation and Development (BMZ).

Impact – This tool, Tactical Urbanism, lets citizens temporarily experience the change that an urban development plan suggests and that would take months if not years to be constructed. In Coimbatore, India, this tool has been used to explain a newly developed non-motorized transport plan that intends to encourage walking and cycling beyond the use of individual transport so that GHG emissions can be reduced.

Contribution to climate resilience – Citizens are able to visualize projects from a city's development plan and can prioritize their most preferred option for reconstruction through feedback session on the spot. This approach results in residents and decision-makers being more in-

Tactical urbanism activities in Coimbatore, India

Electric bus in Jakarta, Indonesia

formed on public needs, and establishes integrated planning processes in the respective institutions that target land-use and transport planning capacities while generating co-benefits on health, economic diversity and recreational spaces.

INTRODUCING E-MOBILITY

Introducing new technologies into existing urban infrastructure requires an integrated approach. While technical and financial aspects such as charging methods or revenue streams are more obvious, the social and environmental needs require thorough consideration. Capacity development at city and the local transport agency level are key to the further uptake of e-mobility. GFA has been supporting Jakarta on their pathway to electrify the whole bus fleet as part of the C40-financed C40 CFF – Zero Emission Buses in Jakarta project in 2020.

Impact – Through the preparation of a 100 e-bus trial, the city of Jakarta and the bus rapid transit network, TransJakarta, learned about the technology, operation and business model of an e-bus fleet and charging infrastructure. The preparatory studies introduced a potential way to introduce e-buses and thereby significantly reduce greenhouse gas emissions in the chronically air polluted city.

Contribution to climate resilience – Different groups in society and their needs are taken into consideration. Air quality will improve when e-buses replace diesel buses. Decision-making at the organizational level will become easier and more effective as capacity building events support and allow administrative staff to take a leading role in the advancement of vehicle electrification in the city of Jakarta.

Application in additional projects – Similarly, GFA supports governments in Costa Rica, India, and ASEAN member states in their transition ambitions towards electronic mobility, e.g. through the introduction of e-auto rickshaws.

ENERGY PERFORMANCE CONTRACTING

As a rather new mechanism in the Western Balkan region, Energy Performance Contracting has been introduced to municipalities such as Veliko Gradište in Serbia to repay investment in energy infrastructure through the cost savings of renewable energy and energy efficiency projects. Focusing on street light improvement in the Serbian city has been part of the Regional Energy Efficiency Programme of the European Bank for Reconstruction and Development (EBRD) since 2014. GFA together with ECONOLER has supported setting the baseline, preparing technical and financial (pre-)feasibility and obtaining the necessary approvals from the national Public-Private Partnership (PPP) Commission. This was followed up by support during tender preparation in line with national legislation and international best practices.

Impact – Through the Energy Performance Contracting mechanism, the municipality entered into a PPP with the investor which allowed project delivery without upfront costs. As a result, Veliko Gradište's electricity consumption went down from 950,000 kWh to 260,000 kWh per year and the electricity expenditure is cut by 4,600 EUR per month. As of 2020, street lightning projects in Serbia account for more than one quarter of all PPP projects.

Contribution to climate resilience – Initiating the sustainable financing mechanism allows municipalities to reallocate their budgets and increases the infrastructure's resilience to external shocks and stresses.

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GFA mission – to improve the livelihood of beneficiaries through our professional services.

GFA core values – to offer high performance in service delivery, technical excellence in our main sectors, innovative approaches and products, and credibility with our clients when putting projects into practice.