城市，让生活更美好
Better City, Better Life

Shanghai Manual

2022 Annual Report

A Guide for Sustainable Urban Development in the 21st Century

UN-Habitat
Bureau International des Expositions
Shanghai Municipal People's Government

Supported by
Ministry of Housing and Urban-Rural Development of the People's Republic of China

UN-HABITAT
FOR A BETTER URBAN FUTURE

Shanghai Scientific & Technical Publishers

Localizing the Sustainable Development Goals

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Preface 1

The *Shanghai Manual: A Guide for Sustainable Urban Development in the 21st Century* reflects the longstanding contribution of multilateral cooperation between UN-Habitat, the Bureau of International Expositions and the Shanghai Municipality. This year, under the theme of localizing the Sustainable Development Goals (SDGs) in line with World Cities Day 2022 'Act Local to Go Global', the *Shanghai Manual 2022 Annual Report* presents case studies focusing on the implementation of the SDGs at the local level. The cases selected globally reflect the experience of cities in different parts of the world across various domains of sustainable urban development such as society, economy, and environment, etc. This year's report also includes a special chapter on the global programmes, processes and networks concerning the Sustainable Development Goals (SDGs) localization to provide more practical information for city leaders and urban practitioners. Launched on 31st October 2022 as part of the Global Observance of World Cities Day, the *Shanghai Manual 2022 Annual Report* aspires to be an important point of reference for urban professionals around the world to advance sustainable urbanization.

Capitalizing on their innate potential as drivers of sustainable development, cities now lead the way in localizing the SDGs whereby bold, innovative, and strategic action can steer city development pathways to create an urban future that works for everyone. However, urban practitioners are still faced with many questions in how to advance this process. How can cities forge equitable and inclusive urban communities and redistribute opportunities to ensure prosperity for all urban inhabitants? How can cities transition and scale sustainable economic development models? How can cities bring people and nature into harmony, protect the environment, and build in climate resilience for their most vulnerable communities? What is the role of culture in sustainable urbanization and how can it be leveraged to accelerate the process? How can we transition to more participatory and transparent urban governance models that foster collective development of the city? How can cities capitalize upon global networks and initiatives dedicated to SDG localization to accelerate implementation of the Goals? The report explores these questions and analyses inspiring actions undertaken by cities, demonstrating innovative solutions to key challenges across these areas of inquiry.

Across the five thematic chapters, the *Shanghai Manual 2022 Annual Report* presents 21 case studies from 15 different countries. Case studies are dissected into three core areas of focus including their contextual background, their implementation process, and the

tangible lessons we can draw from them. In addition, 19 policy recommendations are extracted as an essential reference to mayors and local government officials, urban planners, and other key stakeholders in urban development to help formulate new solutions to advance sustainable urbanization.

I would like to extend my warmest congratulations for the publication of the 2022 edition of the *Shanghai Manual* and recommend it to all our partners. I am confident that this report will provide urban leaders and practitioners with practical guidance and inspiration to help unlock the potential of cities in achieving the SDGs and further the process of building inclusive, safe, resilient, and sustainable cities and communities.

Maimunah Mohd Sharif
Under-Secretary-General
and Executive Director of UN-Habitat

Preface 2

Fostering the development of sustainable, inclusive and innovative cities was the underlying goal of World Expo 2010 Shanghai, which gathered hundreds of countries from around the world around the theme of 'Better City, Better Life'. It provided the international community with a unique opportunity to showcase innovative solutions for improving urban life, showcasing and proposing suggestions, innovations and best practices to champion sustainable urban living,

At its conclusion, the Shanghai Declaration directly led to the adoption of World Cities Day, celebrated every year on 31 October, and the creation of the *Shanghai Manual*, which builds on the ideas shared at the Expo while constantly searching for the latest lessons and best practices for sustainable urban development.

As a joint endeavour of the Bureau International des Expositions (BIE), UN-Habitat and the Shanghai Municipal People's Government with the support of the Ministry of Housing and Urban-Rural Development of the People's Republic of China, the *Shanghai Manual* has, since its first edition in 2011, highlighted effective policies, techniques and frameworks for real-world change. Nurturing the creative spirit of Expo 2010 Shanghai, the *Shanghai Manual* continues to be updated with concern for the development of each city, providing a guide in the form of case studies for urban planners and managers seeking innovative development models for greener and more equitable human habitat.

Since the UN Sustainable Development Goals Decade of Action plan kicked off in 2020, it has only become increasingly important that the global community drive bold urban change towards more sustainable cities. This 2022 edition of the *Shanghai Manual*, entitled 'Localizing the Sustainable Development Goals', shines a light on the close-to-home solutions that can work towards the achievement of these goals by making human settlements greener, more inclusive, and more liveable.

In the pursuit of the SDGs, it is essential to tackle the challenges all too common in cities – pollution, inequalities, social exclusion – by ramping up initiatives to spearhead community initiatives, social mobilisation, and green growth. Similarly, the opportunities afforded by urban areas – innovation, cultural vibrance and local organisation – must be leveraged to make cities more smart, inclusive and dynamic than ever before.

Drawing on enlightening examples of tried and tested policies and practices from around the world, this

year's edition of the *Shanghai Manual* showcases the potential and the application of positive urban development. With policy and governance recommendations and actionable approaches at the local level, the *2022 Shanghai Manual* continues the legacy of Expo 2010 Shanghai by sharing valuable lessons on sustainable urbanisation. If steered and deployed correctly, these lessons can help cities around the world overcome some of the major global challenges, which are all critical elements of the *2030 Agenda*, and support the achievements of the SDGs.

Dimitri S. Kerkentzes
Secretary General of the Bureau International des Expositions (BIE)

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This annual report represents a collaborative effort, made possible by the contributions of many people.

We wish to express our deep appreciation to Ms. Maimunah Mohd Sharif, Executive Director of UN-Habitat. Thanks to her help and support, the *Shanghai Manual* can come to fruition and be updated and released annually to provide reference experiences for implementing the urban dimensions in the *2030 Agenda for Sustainable Development* and the *New Urban Agenda*. We wish also to thank all those UN-Habitat experts who contributed by reviewing the *Shanghai Manual* and providing valuable advice, namely: Rong Yang, Sam Gillatt and Xuesai Ma from UN-Habitat Regional Programmes Division; Martino Miraglia, Francine Melchioretto, Claudia Garcia, Claudia Scheufler, Angela Mwai, Lennart Fleck, Isabel Shirin Enyonam Wetzel, Dyfed Aubrey, Xiaoqing Wang, Remy Sietchiping, Matthijs van Oostrum and Anindya Panda from the Global Solutions Division; Bruno Dercon, Afshin Kalantari, Pragya Pradhan, Srinivasa Popuri from the Regional Office for Asia Pacific; Erfan Ali, Shahira Elbokhary, Nada Al Hassan, Rahma Gheriany, Ahmad Elatrash and Amjad Taweel from the Regional Office for Arab States; Oumar Sylla, Claude Ngomsi and Joel Balagizi from the Regional Office for Africa; Elkin Velasquez Monsalve, Roi Chiti and Alain Grimard from the Regional Office for Latin America and the Caribbean; Stephanie Greenberg as the English copy editor; and Peter Cheseret as the graphic designer.

We also thank Mr. Dimitri Kerkentzes, Secretary General at the Bureau International des Expositions, Mr Antoine Bourdeix and their team who provided consistent support and help for the compilation of the *Shanghai Manual* 2022 *Annual Report*. Thanks to them, we can continue to carry forward the spirit of 'Better City, Better Life' of the Shanghai World Expo by releasing the *Shanghai Manual* 2022 *Annual Report*.

We also wish to thank leaders and colleagues from the Ministry of Housing and Urban-Rural Development of the People's Republic of China who provided positive support and valuable advice for the compilation and review of the *2022 Annual Report*.

We would also like to express our deep appreciation to Li Qiang, Then-Secretary of the CPC Shanghai Municipal Committee; Gong Zheng, Mayor of Shanghai; Peng Chenlei, Vice Mayor of Shanghai and Wang Weiren, Deputy Secretary-General of the Shanghai Municipal People's Government, for their attention and support for the compilation of the annual report. Thanks are also due to all those who assisted in compilation and coordination tasks, and in particular to: Hu Guangjie, Party Secretary of the Urban-Rural Development and Transport Working Committee of the CPC Shanghai Municipal Committe; Director Yao Kai, Vice Director Jin Chen, Chief Engineer Liu Qianwei and Ms. Peng Bo and Mr. Gao Hongyu from Shanghai Municipal Commission of Housing, Urban-Rural Development and Management, as well as Director Cheng Jian, Ms. Wang Chanya, Ms. Rong Yu, Ms. Mao Yingjuan from the Shanghai Coordination Center of World Cities Day.

Shanghai Coordination Center of World Cities Day organized multiple teams of experts to help compile and modify every chapter of the annual report. The leading experts of each team are: Professor Yu Hai from the School of Social Development and Public Policy at Fudan University; Professor and Director Zeng Gang and Dr. Zhu Yiwen from the Institute of Urban Development at East China Normal University; Professor Zhu Dajian and Dr. Chen Haiyun from the School of Economics & Management of Tongji University; Director Yang Rongbin and Associate Researcher Shi Wen from the Shanghai Library (Institute of Scientific & Technical Information of Shanghai), Professor Peng Zhenwei, Professor Huang Yi, Associate Professor Chen Chen, Associate Professor Li Lingyue and Assistant Professor Tang Weicheng from the School of Architecture & Urban Planning of Tongji University; Director Yu Hongyuan, Dr. Zhu Yunjie from the Shanghai Institutes for International Studies and Professor Li Guangming from College of Environmental Science and Engineering of Tongji University, etc. (Names are listed in the order of chapters.) Among them, Director Yang Rongbin and Associate Researcher Shi Wen were responsible for the theme development of the annual report and framework design in their capacity as the chief experts. Meanwhile, we wish to express sincere thanks to: Guo Weilu, Secretary of CPC Committee; Ye Qing, President; Zhou Lizhi, Vice President and the landscape upgrading work team for Changning Campus at East China University of Political Science and Law, and all the other members of the teams who participated in the compilation of each chapter of the *Shanghai Manual*.

We wish to commend in particular the significant contributions to people who helped review the annual report including Deputy Director Zhou Guoping, Ms Shi Xiaochen, Ms Peng Ying and Ms Chai Hui from the Development Research Center of Shanghai Municipal Government, Mr Li Jie from the Research Office of Shanghai Municipal Government and Mr Tu Qiyu from the Institute of Urban and Demographic Studies at Shanghai Academy of Social Sciences.

Last but not least, we wish to thank the press Shanghai Scientific & Technical Publishers and our translation service provider Lan-bridge (Shanghai) Information Technology Co., Ltd. for all the thorough and meticulous work!

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Chapter 1

Introduction

Introduction[1]

In our increasingly urbanized world, delivering the Sustainable Development Goals (SDGs) is now more critical than ever, yet cities are today faced with new emerging challenges and uncertainties that threaten their systems and communities. Issues such as growing inequalities, climate change, rising pollution and declining biodiversity, natural disasters, conflict and violence, exclusion and migration, as well as the ongoing COVID-19 pandemic have sought cities to rethink their fundamental systems and modalities. Intrinsically linked to the SDGs, cities are key to realizing the *2030 Agenda for Sustainable Development* at the local level whereby smart, innovative and bold urban action will be pivotal to fully realize their potential as facilitators of sustainable development. With a central theme of Localizing the Sustainable Development Goals, the *Shanghai Manual: A Guide for Sustainable Urban Development in the 21st Century 2022 Annual Report* reflects upon the existing challenges faced by cities globally, the opportunities they are afforded and the experiences they have gained in the process of sustainable urbanization over the last five years. Accordingly, 21 cutting-edge case studies from different parts of the world are presented across these dimensions: society, economy, environment, etc. - presenting 19 transferable policy suggestions for urban practitioners globally to help cities unlock SDG values.

Background and Significance

Global urban development has unquestionably led to invaluable breakthroughs and achievements around the world; however, such advances have not been without staggering detriment to people and the planet. Clearly, there have been winners and losers in the process of globalization and modernization with enormous disproportions in global wealth distributions and access to opportunities whilst unprecedented environmental change has threatened the way of life for future generations. Where significant development deficits remain and the poorest are left furthest behind, world leaders are now pushed to converge to foster a sustainable and equitable path forward to secure prosperity for all. Here, cities and urbanization lie at the forefront as core agents of change: community-orientated, connected and primed to transform the urban agenda.

The *2030 Agenda for Sustainable Development*

Marking a landmark agreement, the *2030 Agenda for Sustainable Development* was officially ratified by global leaders at the United Nations Summit in New York from 25 to 27 September 2015. As a global framework for sustainability, the agenda established a universal plan of action for people, the planet, prosperity, peace and partnership with a focus on eradicating poverty in all its forms and dimensions while protecting the earth, securing a prosperous future for all, fostering peaceful and inclusive societies, and mobilizing global partnerships on sustainable development. Accordingly, it called upon all countries and stakeholders to serve in collaboration, working towards established SDGs.

The 17 SDGs are comprised of 169 targets and 231 unique indicators. The goals are:

Goal 1: End poverty in all its forms everywhere.
Goal 2: End hunger, achieve food security and improved

1 This chapter was written by UN-Habitat experts.

nutrition, and promote sustainable agriculture.
Goal 3: Ensure healthy lives and promote well-being for all at all ages.
Goal 4: Ensure inclusive and equitable quality education, and promote lifelong learning opportunities for all.
Goal 5: Achieve gender equality and empower all women and girls.
Goal 6: Ensure availability and sustainable management of water and sanitation for all.
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all.
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all.
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
Goal 10: Reduce inequality within and among countries.
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
Goal 12: Ensure sustainable consumption and production patterns.
Goal 13: Take urgent action to combat climate change and its impact.
Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.
Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
Goal 17: Strengthen the means of implementation and revitalize the global partnership for Sustainable development.

Since 2015, progress has been made on achieving the SDGs notably in reducing poverty, improving maternal and child health, increasing access to electricity and increasing gender equality. However, considerable shortfalls remain with the COVID-19 pandemic throwing action on the SDGs further off tangent. Since the COVID-19 pandemic began, global extreme poverty rose for the first time in more than 20 years with 93 million people pushed back into extreme poverty in 2020 alone.[2]

The COVID-19 pandemic has further entrenched and extended disadvantages and inequalities, not only in cities but across the wider urban-rural divide.[3] It is important to note that whilst the emergence of COVID-19 has led to major set-backs in regard to SDG advancement, progress on the Goals was already off-track prior to its arrival. The *Sustainable Development Goal Report 2022* issued by the United National Department of Economic and Social Affairs highlighted that the COVID-19 pandemic has wiped out more than four years of progress on poverty eradication, whilst aggravated climate change and global conflict put the 2030 Agenda in grave jeopardy due to the multiplicity of cascading and intersecting crises. Critically it urges the need for immediate action to rescue the SDGs and deliver meaningful progress for people and the planet by 2030.

Facing these severe realities, cities around the world must work to mainstream the SDGs into their development agendas, addressing longstanding operational challenges in development, building the capacities of institutions and communities, and facilitating international cooperation on the 2030 Agenda. Set out as a 15-year plan, time is now of the essence as we are in the Decade of Action (2020—2030) where bold and transformative actions hold the key to forging a sustainable, inclusive and green pathway into the future. Upon launching the Decade of Action, United Nations Secretary General António Guterres recognized local action to be one of the key factors to achieve the SDGs by 2030. All stakeholders are called upon to drive collective efforts to deliver on the SDGs, pushing for sustainable solutions to the most pressing global challenges of our time.

2 United Nations Department for Economic and Social Affairs. URL: https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf (2021) (Access: 08/08/2022).

3 United Nations. Progress in the implantation of the New Urban Agenda: Report to the Secretary General. A/76/639 (2022).

Localizing the Sustainable Development Goals

Localizing the SDGs is the process of transforming the Goals into reality at the local level in coherence with national frameworks and in line with community priorities. It means placing territories and communities at the centre of sustainable development; a two-way process where the local meets the national and the global, and vice-versa. Although the SDGs explicitly recognize the transformative power of urbanization through SDG 11 Sustainable Cities and Communities, the role of cities and human settlements extends across all 17 of the interlinked Goals whereby urban action contributes to the SDG framework more comprehensively in reality. It is estimated that 65 percent of the 169 SDG targets will not be reached without the engagement of local governments.[4] The process of SDG localization considers sub-national contexts in achieving the 2030 Agenda, relating to how the SDGs can establish a framework for local development policy and how LRGs can support the implementation of the SDGs via bottom-up action: SDG localization helps stakeholders to take ownership of the agenda at the local level. As a complex process with the potential for divergent outcomes across different urban contexts, SDG localization is key to realizing the Goals on the ground, with cities ideally placed to find pragmatic solutions to SDG targets within their own contexts.

Dedicated to progressing sustainable urbanization – a multi-faceted and complex process – SDG 11 targets are strongly linked to a range of aspects across the

Source: Osman, T., et al. Voluntary local review framework to monitor and evaluate the progress towards achieving sustainable Development Goals at a city level: Buraidah City, KSA and SDG 11 as a case study

Figure 1.1 Interlinkages between SDG 11 and the other SDGs

4 Organisation for Economic Co-operation and Development. URL: https://www.oecd.org/about/impact/achieving-sdgs-in-cities-and-regions.htm (Accessed: 09/06/2022).

Goals. Elements such as poverty alleviation, access to basic services, housing, mobility, health and education, gender equality, resilient infrastructure, climate change, migration, sustainable industrialization and sustainable consumption and production patterns, financing, food security, good governance and the creation of partnerships to implement the SDGs are all highly relevant (see Figure 1.1). Accordingly, where appropriate linkages between Goals and targets are established, policies must be aligned to reinforce and further strengthen these connections. Where negative trade-offs occur through these linkages, policy should work towards alleviating detrimental impacts. Cities and local governments must therefore carefully balance policy and strategy, understanding the complexities and interlinkages between development areas, and understanding the SDGs as a holistic framework in which individual actions at the city level will have widespread impact across their entirety.

On a positive note, with six years since the establishment of the 2030 Agenda, governments, multilateral bodies, international organizations, the private sector, non-governmental organizations (NGOs), academic institutions, civil society organizations (CSOs), philanthropic organizations and other important stakeholders have all acquired a wealth of knowledge and expertise on how to better achieve implementation of their ambitious global framework. As cities recognize their growing roles as leaders, new breakthroughs emerge in realizing the Goals through inspiring urban initiatives; however, important questions remain on how cities can leverage urban development to optimize and accelerate SDG implementation. Critically, cities and their leaders must find answers to the following questions: ① How can cities create more inclusive and equitable cities and communities? ② How can cities transition to sustainable, innovation-driven urban economies? ③ How can cities generate ecologically sensitive cities and communities? ④ How can cities leverage culture and creativity to advance sustainable urbanization? ⑤ How can cities integrate SDG focused governance models? and ⑥ How can we engage a diverse range of stakeholders to participate in the SDG localization process?

The *New Urban Agenda*

Adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat Ⅲ) in Quito, Ecuador on 20 October 2017, the *New Urban Agenda* understands the power of urbanization as a tool for sustainable development, serving as a common vision for a more sustainable future. Presenting a paradigm shift for urban development, it builds upon the relatively limited means of implementing SDG 11, providing a roadmap from which we can rethink how to plan, construct, manage and live in cities, interrogating the core processes and actions required to create more prosperous urban settlements for all.

Setting out a spatial framework in which to achieve a number of the SDGs and their targets, the *New Urban Agenda* is thus closely intertwined with the *2030 Agenda*, understanding it as an overarching set of Goals which require more detailed approaches. As such, *the New Urban Agenda* can be seen as the delivery vehicle for SDG implementation in urban settlements. Critically, it has pledged the commitment from global leaders in ensuring that cities provide basic services for all; offer equal access to opportunities; eliminate all forms of discrimination and build inclusion for marginalized groups; recognize the rights of migrants, refugees and internally displaced persons (IDPs); reduce pollution and GHG emissions; incorporate disaster resilience measures; integrate safe, high-quality, green public spaces; improve mobility and connectivity; and establish partnerships for sustainable urban development.

Whilst progress on the *New Urban Agenda* has been achieved, there is still a long way to go. Findings from the *United Nations 2022 Quadrennial Report* on progress in the implementation of the *New Urban Agenda*[5] highlight the setbacks induced by the COVID-19 pandemic in alleviating poverty and in advancing women's employment and safety. It also

5 United Nations. General Assembly Economic and Social Council. Progress in the implementation of the New Urban Agenda. Report of the Secretary-General (2022).

stated that an estimated 70 percent of households globally are living under precarious tenure, and pointed to a reversal in the trend of the proportion of the urban population living in informal settlements which has increased from 23 percent to 23.5 percent since 2018. In addition, issues of displacement and land and housing rights have persisted globally during the COVID-19 pandemic, while increasing migration rates have highlighted the need for inclusive urban responses. Many cities have promoted slum upgrading initiatives as well as focused housing programmes for vulnerable groups since the onset of the COVID-19 pandemic, whilst an approved draft resolution by the Third Committee of the General Assembly on inclusive programmes and policies aims to tackle issues of homelessness and promote affordable housing. Further insights suggest that many countries are still challenged to balance urban economic productivity with job creation for all, whereby even in growing economies, social inequalities are increasing. Where unemployment increased drastically during the COVID-19 pandemic, job-loss rates were seen to be significantly higher for women than for men.[6]

Regarding environmental sustainability and resilience, the report also notes that air pollution, waste and other forms of pollutions continue to put the health of cities and their inhabitants at risk with open waste dumping and private vehicle use both major contributors. However, many cities globally are now integrating renewable energy systems and more sustainable mobility systems, and with the support of the Global Covenant of Mayors for Climate and Energy, over 10,000 cities have committed to reducing carbon dioxide emissions by 24 billion tons by 2030. The increasing frequency and severity of disaster events has increased emphasis on the need for nature-based solutions (NbS) and the dissemination of knowledge and best practices on disaster risk reduction (DRR) measures, given that only 30 percent of countries have adopted a tailored DRR strategy.

The state of Urbanization

Globally, urban populations continue to experience significant transitions with diverse trends apparent across regions. Where rural-urban migration is directing large swathes of people to cities, a significant portion of urban growth is occurring through natural population growth. As a trend that is predicted to continue, cities will accommodate around 55 percent of the global population by 2050, whilst 25 percent will live in towns and 20 percent in rural areas.[7] It should be acknowledged that urban growth rates can be seen to be slowing. Although a temporary phenomenon, the COVID-19 pandemic somewhat curbed urban growth rates in many major cities with people leaving larger urban cores for suburban peripheries, diminishing their relative pulling power. Accordingly, where flexible working modalities and lifestyle changes led to alarmist exoduses from city centres, cities were challenged to re-evaluate and adapt to new modes of operation, whilst escalating housing prices have since led to an affordability crisis. Moving forward, many cities will face increasing aging populations, particularly in middle-income and high-income nations. In contrast, cities in low-income countries will experience the highest urban growth rates and are projected to grow nearly two and a half times by 2070, with their combined population expected to exceed 700 million people.[7] By 2030, the world will accommodate 43 megacities (cities with more than 10 million inhabitants); however, where some of the fastest growing urban agglomerations are those with fewer than 1 million people,[8] small and intermediate cities will capture the bulk of urban population growth across regions thus reinforcing their critical role in achieving the SDGs. Marking a turning point, these changing demographic compositions create new, dynamic contexts for urban functionality, strongly interlinked with economic, social and political trends.

6 International Labour Organization. Policy brief: building forward fairer: women's rights to work and at work at the core of the COVID-19 recovery (2021).

7 United Nations Human Settlements Programme. URL: https://unhabitat.org/sites/default/files/2022/06/wcr_2022.pdf (2022) (Accessed: 03/08/2022).

8 United Nations Department for Economic and Social Affairs. URL: https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html (Accessed: 14/06/2022).

As a global phenomenon, urban sprawl has swept across cities in all regions of the globe, occurring through both horizontal spreading, dispersed urbanization and peri-urbanization. Cities are today growing faster than their populations with long-term projections suggesting that the world will continue to urbanize from 56 percent in 2021 to 68 percent in 2050.[6] Cities, towns and metropolitan areas are consequently consuming new land at an unprecedented rate, which in tandem with population growth and a spiking demand for natural resources, continues to deteriorate natural ecosystems, reduce land supply and increase GHG emissions. Where 90 percent of urban expansion will be in the developing world,[9] urbanization is likely to result in even greater sprawl in the coming decades, exacerbating issues of poverty and the marginalization of communities. Cities are now hard-pressed to balance population growth with a dwindling land supply through effective land use policy, sensitively managing their layout, form and built density to ensure sustainable expansion, preventing unsustainable sprawl on the one hand and overcrowding on the other.

Challenges and Opportunities

Well-managed urbanization holds the key in unlocking the value of the SDGs; however, it is enmeshed with several existential global challenges. Cities, municipalities and metropolitan regions are already faced with substantial challenges but also an abundance of opportunities to drive sustainable development. This Manual will analyse these components from perspectives of society, economy, environment, etc.

Equitable development can drive prosperity and reduce inequalities in cities

Inequalities are a growing phenomenon in cities with a widening gap between rich and poor, social exclusion and the alienation and marginalization of vulnerable groups, declining community cohesion and unequal access to jobs, services and technology. Unfortunately, historically socially excluded groups such as women and girls, the elderly, children and youth, disabled persons, migrants, IDP's and refugees continue to face the same challenges with minimal access to opportunities, increased exposure to risk and multiple, intersecting forms of discrimination. The global housing affordability crisis is making informal settlements and inadequate housing the only option for millions of low-income households. Equitable development is pivotal to reducing socio-economic inequalities and social polarization in the city, promoting spatial equity in regard to the fair access to adequate housing, basic services, public space, jobs and opportunities, education, healthcare and security for all. Evidently, urban social inequalities have been seen to undermine civil society, reducing the ability for many to participate in the formal economy and capitalize on opportunities offered in the city. By cultivating cohesive and inclusive environments, and providing more widespread access to opportunities, cities will strengthen the resilience of neglected communities and improve the livelihoods and prosperity of their inhabitants. Focus should therefore be placed on better integrating these individuals into the fabric of the city whilst ensuring their physical and mental health and well-being, and preventing dilution of their individual social and cultural identities. Cities must work to protect the most vulnerable whereby targeted social policy affords local governments the capacity to create spatially equitable cities in which all citizens are provided the same rights and equal access to urban services and infrastructure to improve socio-economic conditions.

Through inclusive governance, cities can turn the tide to unlock shared economic value

Cities are agglomerations of trade and commerce accounting for around 70 percent of the world's economic activity.[10] They are therefore a powerful force for addressing sustainable economic growth, driving

9 United Nations. URL: https://www.un.org/sustainabledevelopment/cities/ (Accessed: 14/06/2022).

10 ICLEI – Local Governments for Sustainability. URL: https://www.local2030.org/library/232/ICLEI-Briefing-Sheets-02-Cities-and-the-Sustainable-Development-Goals.pdf (Accessed: 15/07/2022).

innovation, investment and employment. However, the advancement of urban economies has not been without detriment to the environmental health of the planet whereby rapid growth has been coupled with intensive resource use and waste generation. Increasing the proportion of jobs centred around the green economy will be key for cities in their pursuit of more sustainable economies. Urban economic models still disproportionately favour the affluent whilst the urban poor are largely excluded from economic equity including formal employment and higher income-generating opportunities. Exacerbating this, the COVID-19 pandemic has exposed the susceptibility of existing urban economic structures where cities have experienced extensive business closures, wider wealth gaps and higher unemployment with the greatest impact felt by the most marginalized. Underfunded and inaccessible education and job training, and the rise of 'mega-employers' who are able to circumvent labour laws, also remain as major challenges. However, through post-COVID-19 pandemic recoveries, cities are now presented with the unique opportunity to transition to sustainable economies, steering economic innovation, fostering equitable and competitive economic ecosystems and scaling the circular economy. Upgrading to equity centred economic models in which local growth and sustainable models of municipal finance are prioritized thus presenting cities with the opportunity to enhance socio-economic resilience, better preparing them for the increasing frequency of shocks and disruptions.

Urban activity continues to accelerate climate change, yet sustainable urbanization can secure a green, resilient future

Driven largely through unsustainable modes of construction and transportation, urban areas remain the largest contributors to climate change accounting for between 71 percent and 76 percent of carbon emissions from total global energy use.[11] As unsustainable urbanization gains pace, the growing intensity of economic activity, construction, transport and industry is increasing pollution and further pressurizing the demand for natural resources, advancing ecological deterioration and depleting vital ecosystems. Cities are now forced to act to curb pollution and protect natural systems, transitioning to environmentally sensitive, low-carbon development models. As dense clusters of infrastructure, financial and human capital, cities and municipalities are some of the areas most vulnerable to climate change impact whereby the increasing frequency and intensity of natural disasters presents enormous challenges, especially as 90 percent of urban areas are coastal.[11] Where the impact of climate change is becoming increasingly frequent and severe, natural disasters have extensive potential to devastate cities, damaging urban infrastructure and housing, disrupting urban economies and supply chains, and reducing access to basic and critical services, jeopardizing the livelihoods of urban dwellers with the poorest and most marginalized hit the hardest. Where slow responses and a lack of adequate climate policy have so far failed cities in this arena, targeted action that promotes NbS, renewable energy, ecological protection and rehabilitation, sustainable resource management and DRR measures can help build green, resilient and environmentally equitable cities that operate in harmony with nature. Through a reflexive, ecosystem-based approach to urban development, cities are therefore equipped with the capacity to serve as frontiers against climate change.

Cities can leverage culture to enhance the vitality, prosperity and resilience of communities

As a dynamic component that helps to compose the fabric of the city, urban cultural practices have the potential to either drive or impede pathways towards sustainable urbanization. Culture serves as the sphere that shape ideas, behaviours and practices whereby cultural heritage, creativity and diversity can all play substantial roles in forging more inclusive societies when integrated appropriately. However, as key elements for long-term development, these are often not fully acknowledged in local government policies and plans. Issues such as war and conflict, climate change and natural disaster events pose significant threats to tangible cultural heritage

11 United Nations Human Settlements Programme. URL: https://unhabitat.org/topic/climate-change (Accessed: 08/06/2022).

whilst the modernization of societies continues to dilute intangible cultural heritage such as traditional knowledge and skills that have been passed down for generations. As the glue that binds people together as a community, cultural heritage has direct relevance to the resilience of local communities, with culture and creativity helping to generate supportive networks and open up opportunities to those who are often socially and economically excluded in the city. Cities therefore have the chance to create value from positive cultural aspects, leveraging it as a transformative tool to foster more humanistic and resilient societies, and stimulate local economic development. By facilitating enabling environments, local governments can protect and promote culture, ensuring cultural diversity, access to culture and cultural rights for everyone.

The SDGs allow cities to strengthen governance models based on equity and innovation

Effective models of urban governance remain central to localizing the SDGs, yet weak urban management still predominates in many cities globally in which traditional siloed approaches and outdated systems inhibit the advancement of sustainable urbanization. Poor governance can be seen to further exacerbate inequality and poverty, economic stagnation, vulnerability to disaster risk, cultural deterioration and poor urban planning, preventing prosperity in the city. With the myriad of challenges that cities face today, the necessity for effective decentralization, local fiscal autonomy and accountability within local governments has arguably never been so important. Essential in realizing the SDGs, the adoption of multilevel, inclusive and adaptive governance mechanisms will allow cities and territories to facilitate the accelerated transitions required to drive sustainable urban development models. The growing trend in e-governance, the rise of digitalization and smart-city technologies affords local governments prime opportunities to facilitate more inclusive urban development whereby ICT-enabled participation can increase the efficiency of municipal services and transform the interaction between governments and the public. This is especially significant given that globally the space for civil society and participation in governance is shrinking. Greater public engagement in urban development can facilitate more democratic, and thus legitimate, decision-making. Cross-cooperation and the expansion of partnerships and networks can also help build capacity in achieving sustainable urbanization through which local governments, the private sector, NGOs and other major urban stakeholders can harness and direct the transformative potential of cities. Building more accountable, participatory and cooperative governance models will help to steer equitable, inclusive and transparent urban development.

Delivering Urban Solutions

In response to the emerging challenges that urban areas are faced with today, cities globally are implementing inspiring initiatives to counteract and overcome key issues in regard to social, economic, environmental and cultural development, and city governance. Across these initiatives, the principles of equity, inclusion, sustainability and resilience that underline the 2030 Agenda, are all integrated into development processes highlighting their key role in the SDG localization process and in helping develop prosperous cities and communities. Several important policy measures and suggestions can be drawn from the case studies throughout this Manual to be used as inspiration and guidance for urban actors and decision-makers.

To foster more inclusive and participatory cities it is crucial that policy emphasizes the role of people as participants in urban society, protecting social dynamics, supporting vulnerable social groups and replenishing social vitality through supportive institutional spaces. The involvement of local communities in urban governance can be seen as key to stimulate more diverse and deep-rooted partnerships between social groups and communities in which the promotion of 'local community and social' governance can enable social groups to become agents of change in urban development. To effectively reinforce these processes, appropriate legalization is important whereby mechanisms must be in place at the institutional level that empower urban residents across all sections of society. Robust urban policy

should encourage flexible governance which balances top-down and bottom-up approaches to social development in the city, recognizing all individuals to be urban actors, uniting local communities and increasing participation in urban development processes.

As engines of economic growth, cities must develop sustainable economic models to ensure the health and success of their long-term development. Enhancing the long-term economic prosperity and vitality of cities requires the development of favourable urban business environments which encourage new enterprise and capital flows. Innovative city initiatives have highlighted benefits of capitalizing on knowledge-based facilities such as universities and other innovative education-based campuses, better connecting them with local industrial spaces to bridge communities and industry. Such action can help unlock the untapped potential of these urban environments, attracting research and development (R&D) investment, entrepreneurs and local industrial innovation. In addition, where knowledge innovation is the driving force for regional industrial development, cities should leverage both their foundational industry, cultural heritage and technical knowledge pools to build thriving industrial clusters which are contextually unique, driving regional industrial development. Building on this, the development of cross-regional innovation cooperation will better enable the infiltration of knowledge resources and knowledge networks into the city, increasing sustainable economic development.

The value of urban greening has long been discussed by urban practitioners; however, the clear need for green space integration in the city remains. With urban health and environmental sustainability now firmly at the core of urbanization, the prioritization of green urban development such as pocket parks and community gardens can be seen to afford cities a wealth of benefits, improving urban quality and forging a closer relationship between urban citizens and nature. Urban greening can also be seen to play an integral role in enhancing refugee communities, particularly in instances where environmental deterioration in settlements has left communities void of livelihood opportunities. Cities must also advance the integration of DRR measures such as early warning systems and mitigation actions, engaging local communities in the development of resilience strategies, especially in the global south where increased hazard exposure and a lack of public knowledge makes poorer, marginalized communities highly vulnerable. Underpinning the transition to environmentally orientated urban development, such development should be supported through robust urban policy and legal regulations.

Cities undeniably possess strong cultural value. To utilize this, they should curate and implement culturally sensitive urban development plans that resonate with local cultural heritage, building upon local customs, values and traditions, and protecting local knowledge and assets. In this respect, cities can harness culture as a tool to drive sustainable development. The employment opportunities offered by cultural heritage can be tapped to help increase community prosperity and livelihoods. The creation of dedicated channels to open up culture driven employment has the potential to deliver significant value for cities, advancing local economies through cultural heritage promotion. Cities must situate citizens as the participators and beneficiaries of cultural heritage protection, understanding the key role of communities and local people in cultural heritage. Culture can be used to bind communities together, build partnerships, stimulate social cohesion and foster dialogue between different community groups.

City governance ultimately dictates the management and direction of urban development. Cities must therefore ensure their governance mechanisms demonstrate participation and transparency in decision-making to promote trust and accountability in local governments. The integration of digital technologies into city governance systems (e-governance) can help to bridge the gap between citizens and local government, enabling more inclusive and collaborative decision-making, empowering citizens. It is also important that urban decision-makers seek localized solutions to address urban and community challenges, tackling them through focused community plans in line with the SDGs. The promotion of integrated regional governance which facilitates cross-regional coordination will strengthen urban governance mechanisms and local development, whilst the promotion of public-private partnerships and strengthened municipal finance can help local

governments enhance public policy, foster innovation and better address issues in the public interest. The shift to smart city governance, therefore, presents enormous opportunities to local governments and urban actors to govern the city through the principles of equity, inclusivity and sustainability.

Systematizing the Manual

In response to the increasing prominent role that cities are playing in driving sustainable development and realizing the SDGs, the *Shanghai Manual 2022 Annual Report* builds upon the holistic collection of previous editions, introducing updated cases across a range of sustainable urbanization issues which reflect new urban realities. It aims to showcase the potential for cities to spearhead the *2030 Agenda*, drawing attention to the enabling and facilitatory role of cities in pursuit of the SDGs. Accordingly, through cutting-edge case studies, it lays out innovative solutions to the leading urban development challenges of our time, offering practical guidelines and inspiration for the global community to take action. Urban best practices from different cities and municipalities are presented providing an in-depth assessment into how local governments and urban stakeholders globally are approaching and overcoming hurdles to drive sustainable urbanization in line with the SDGs.

Following this introduction, Chapter 2 to 6 each introduces the key concepts under one thematic area of sustainable urbanization and the SDGs, and presents several case studies which reflect best practice examples of sustainable urban development under their associated connotation. The case studies are compartmentalized into three sections: ① A contextual background which introduces the setting and analyses the problem; ② The implementation process which outlines the complete practice process; and ③ Reference experiences which act as the key practical knowledge building components by presenting transferable lessons learnt for urban practitioners. Each thematic chapter also puts forward a set of concrete policy suggestions, drawing upon a comprehensive assessment of the lessons learnt from their individual case studies. A final specialized chapter on international platforms on SDG localization then presents the global processes involved along with the key platforms and networks which cities and local governments can work with to advance the SDG implementation process.

1. Society – cultivating prosperous and inclusive urban communities

As integral elements to the city, communities play a large role in shaping their resilience and sustainability with direct involvement in the implementation of the SDGs. Enhancing life in communities requires social participation and mobilization whereby the principles of social inclusion and equity, equal rights, access to basic services, healthcare, decent work and quality education all remain at the forefront to ensure the vitality, health and prosperity of their inhabitants. This chapter therefore presents outstanding urban initiatives that have advanced social development and community prosperity. The case of Chengdu's 'Aiyouxi' community development centre in China showcases the potential of volunteer associations in building social connections, enabling self-governance at the grass-roots level of community development and increasing resilience among vulnerable groups. Public housing delivery in Baiziwan, Beijing provides insight into a unique housing project that offers residents affordable, high-quality living, empowering them through autonomy and social management. This chapter therefore reinforces the need for local governments to implement socially progressive urban policy centred around access, equality, inclusion and empowerment to build stronger, more thriving communities. Where there is a more pronounced focus on public health in cities, the value of community-based healthcare is exemplified through inter-generational self-help clubs across several municipalities in Vietnam which are improving well-being for individuals of all ages and backgrounds. Odisha's Urban Employment Wage Initiative demonstrates the value of leveraging labour-intensive public works to afford income-generating opportunities to low-income urban residents, co-facilitating urban infrastructure improvement with livelihood development. And the case of Barrio Mugica in Buenos Aires highlights the value of spatially equitable development to amend issues of social

exclusion in marginalized communities through pro-poor policy and planning.

2. Economy – driving innovative urban economies

Cities are engines of economic activity and therefore play a substantial role in driving sustainable economic growth. This chapter conducts a detailed discussion into how cities can grow sustainable economies in line with the SDGs, and enhance their productivity through technology and innovation, diverse creative and heritage industry, and entrepreneurship. The Pinhão Valley Innovative ecosystem marks a pioneering movement for economic development in Curitiba, Brazil in which aligning city actions to the SDGs is promoting a vibrant start-up culture as part of a creative economy model. The case of Monterrey in north-eastern Mexico, demonstrates how cities can capitalize on universities and other knowledge-based institutions in coexistence with industry and communities to stimulate local economies, attracting R&D investment and hi-tech, innovative businesses. The third case in Heidelberg, Germany highlights how industrial diversification has aided local economy recovery, focusing on the introduction of new creative industry, and science and technology as emerging industrial clusters. And the case of Huangpu district in Shanghai, China demonstrates how revitalization of traditional industries and business can regenerate local economies, intertwining cultural heritage protection with economic development. Combined, the cases highlight the powerful role of creative industries and entrepreneurship in job creation and urban regeneration whereby knowledge-based and culture-led economic transformation can help inject stimulus into local economies to drive sustainable urbanization.

3. Environment – building green, resilient cities

Where urbanization has placed major stress on the natural environment and left certain communities at greater risk to environmental catastrophes, a green, environmentally sensitive and spatially equitable approach to urban environmental management is now vital. This chapter analyses how cities and human settlements can incorporate sustainable city models, build resilient cities that are prepared for disasters and promote ecologically conscious development using NbS to ensure the protection and integrity of natural systems, and livelihoods of urban inhabitants. The four cases presented in this chapter highlight the intrinsic value of maintaining natural ecosystems to ensure the health and vitality of cities, the promotion of low-carbon city models, and the importance of DRR measures and capacity building to create resilient urban communities. An ecologically oriented development in Weihai, China focuses on the protection and enhancement of natural ecosystems, incorporating urban greening, sponge city principles and coastal restoration, generating a model for environmentally sustainable cities. The greening of Minawao's refugee camp in northern Cameroon draws critical attention to the importance of the protection of natural resources and ecology in order to ensure sustainable livelihoods among refugee populations, a rapidly growing demographic. Yokohama's innovative Blue Carbon project in Japan draws light to the importance of leveraging natural resources which focus on carbon offsetting and carbon credits to create sustainable, low-carbon cities. And the Ramani Huria project in Dar es Salaam, Tanzania reflects how community-driven mapping has enhanced adaptive capacity to flooding in the city's most at-risk informal settlements.

4. Culture – promoting culturally vibrant cities

As eclectic hubs of people, traditions, jobs and industry, architecture and design, gastronomy, art and music, cities and their communities are living embodiments of cultural exchange and diversity. This chapter draws light to the importance of protecting urban cultural heritage, and promoting cultural and creative industry. It also aims to raise awareness on the importance of culture as a catalytic tool for sustainable urban development. The case of Belo-Horizonte in Brazil highlights the value of culture in urban regeneration through the Creative Horizon project which illustrates the transformation of the city's Centro-Lagoinha neighbourhood through a creative economy activity. Two cases focusing on the physical restoration and rehabilitation of urban cultural heritage are also presented. The rehabilitation of the Dar Al Consul complex in east Jerusalem which has helped to replenish local cultural identity, stimulate civic exchange and enhance community cohesion. And the UNESCO-led Cash for Work project in Yemen's historic cities of Aden, Sana'a, Shibam and Zabid demonstrate the potential for urban cultural heritage to sustain and enhance livelihoods whereby heritage safeguarding

has created income-generating opportunities for marginalized urban youth. In addition, the case of Shanghai, China showcases how the city is promoting Readable Architecture to enable its citizens to gain a better appreciation of historic heritage through a culture-led approach. The chapter offers unique, solution-orientated practices which reflect the role of cultural heritage in strengthening community resilience by empowering marginalized citizens, reinvigorating social connections, creating jobs and catalyzing new innovative, creative economies.

5. Governance – towards smart, inclusive urban management

Serving as the overarching component in localizing the SDGs, good governance models will ultimately dictate the fate of cities in their path towards sustainable urbanization. This final thematic chapter highlights four innovative practices in sustainable and inclusive, urban and community governance. In Canada's Grandview Woodland Community, Vancouver – one of the city's oldest settlements – local government cooperation with the First Nations and indigenous population shows how collaborative governance is key to building equity in the city, promoting affordable housing provision, sustainable transport schemes, green building development and local economic policy to cultivate new and diverse markets. The Yangtze River Delta Eco-Green Integrated Demonstration Zone illustrates how coordinated, cross-regional development has enhanced the local industrial economy, ecological culture and quality of human settlements using governance concepts of co-construction, joint responsibility and win-win cooperation. The Smart Tehran project showcases the potential of smart city functionality in reformulating city management leveraging e-governance and digital applications to increase municipal service delivery and citizen participation in decision-making, bridging the common dialogue gap between citizens and government officials. And in the United States of America, the use of open-data tools in Los Angeles highlights the value of online, SDG data-driven platforms enabling cities and local governments to directly align their city strategies to the SDGs. This chapter, therefore, draws upon pioneering examples of sustainable urban governance in recent years, expounding how digitalization and open data can align urban action with the SDGs, enhance efficiency in urban management and more closely engage citizens in urban development processes. It also reveals the value of strengthening government relationships with local communities, and the benefits of integrated, cooperative local and regional governance.

6. Global programmes, processes and networks on SDG localization

The success of the *2030 Agenda* and SDG localization hinges on effective collaboration between all relevant actors whereby knowledge, skills, resources and partnerships can be enhanced if they are shared at an international scale, allowing cities to increase their capacities, foster knowledge, exchange experiences, forge partnerships, raise funds and gain commitment on the SDGs. Illuminating the role of cities from a higher strategic lens, this chapter lays out the core elements involved in the SDG localization process by highlighting some of the key global SDG localization programmes, networks and platforms that are available to support urban stakeholders. Critically, it conveys the importance of advocacy and awareness-raising on the SDGs, the development of a contextually sensitive strategy for SDG action, as well as the key role of Voluntary Local Reviews (VLRs) as monitoring tools to assess SDG progress and inform urban policy. Regarding global SDG programmes, processes and networks, it outlines the Local2030 Coalition, SDG Cities programme, United Cities and Local Governments (UCLG) SDG Localization Learning Forum and GTF, World Cities Day (WCD) and the Shanghai Declaration as well as dedicated United Nations level activities. As diverse SDG related delivery resources, relevant toolkits are also showcased providing stakeholders with best practices and experiences as well as practical, flexible instruments that help drive locally contextualized SDG actions throughout the entire life cycle from development and implementation to monitoring and review.

Case Selection and Related Principles

Cases highlighted within this Manual present examples of sustainable urban development across their respective themes whereby each directly contributes to the local implementation of a number of different SDG targets. As such, they present urban actors with

practical initiatives which are helping to drive the SDG localization process. To ensure the inclusion of high-quality examples, case studies were selected based upon six core criteria: ① Formal recognition as a best practice; ② Demonstration of innovation; ③ Ability to be replicated in various urban contexts; ④ Contribution to building more inclusive cities; ⑤ Integration of sustainability principles with regard to sustainable urban development; and ⑥ Up-to-date context in regard to their impact on the city and its inhabitants.

Recognizable: Cases are recognized as best practices by the international community, for example, through formal award nomination from authoritative organizations or prestigious awards programmes, through recommendation by official websites, or through their inclusion in international journals and publications. Accordingly, these case studies can be seen to have made outstanding contributions to sustainable urban development.

Innovative: To implement the SDGs, new, innovative modalities of urban development are required, especially where certain SDG targets remain abstract when translated into reality on the ground. Selected cases hence demonstrate innovation within their practice processes, for example, in regard to urban planning and design, science and technology, policy, governance and partnership building.

Replicable: The ability for case study practice processes to be replicated in different urban contexts is considered, such as the ability to be adopted and facilitated across urban areas of different physical proximities, populations, geographic environments, cultures and municipal capacities. Case studies were therefore chosen based on their ability to be appropriately scaled and their applicability to different urban contexts.

Inclusive: Case studies demonstrate their contribution to creating more inclusive cities and communities specifically through the lens of social inclusion in respect to people living in vulnerable situations. The selected cases present equity-driven urban initiatives that have helped to promote the better integration of socio-economically disadvantaged communities, women and girls, children and youth, the elderly, disabled individuals, refugees and other vulnerable groups into urban life.

Sustainable: As a basic principle, case studies ultimately address urbanization issues across the core pillars of development through a sustainable approach. In this respect, each case study contributes to the global knowledge repository of model city practices that help drive sustainable urbanization.

Up-to-date: In order to reflect current realities in global urban development, selected cases have demonstrated impact within the past five years. This ensures that their practical application can be transferred to issues that are significant to our time.

Chapter 2

Society

Introduction[1]

Creating societies that work for all is essential to advance sustainable urban development. Inclusive cities are built upon the collective visions of all stakeholders in which planning and decision-making processes are participatory, encompassing principles of universal design, integrated planning, transparent and accountable institutions, and governance mechanisms. Knowledge and information sharing, public participation and contribution to urban and community development, and social mobility and protection are all integral components for the creation of prosperous human settlements. All individuals must be afforded equal rights to the city – a common good to be shared and benefitted by everyone. It is therefore the unequivocal responsibility of cities to afford every inhabitant access to basic urban services, quality public spaces, adequate housing and livelihood opportunities such as education and employment. Urban societies free of discrimination and which promote gender equality and inclusive citizenship are critical to ensure inclusivity and equity. In light of these factors and to maximize impact on social issues in local communities, urban policies require authenticity, participation and scalability.

It is clear that sustainable urbanization will require greater participation among local people and communities to ensure that cities truly benefit those who live and work there. Bottom-up approaches to urban development are therefore essential, mainstreaming public participation into the planning, design and management of cities, and empowering social groups to ensure their influence in local development in accordance with their own needs and interests. To increase public participation, the self-mobilization of diverse social groups and strengthened social mechanisms must be supported by governments and institutions, enabling local people to develop urban solutions across a spectrum of development matters from the design of public space to spatial development and the management of community affairs. Despite the distinct contexts of each city and community, the experiences of local development practices can be extended by connecting with public policies, providing a frame of reference for other urban communities around the world. Where the development experience of local communities is individual and diverse, public policy is systematic and operable hence discovering the connection between community actions and public policies can help to scale efforts towards the SDGs localization. In urban societies that are facing new challenges, sustainable approaches to local development can enable urban residents to master tools and methods in their daily lives, and enhance their capacity to deal with challenges on the local level. From a social perspective, ensuring authenticity in the SDGs localization process is also key. In other words, the temporal and spatial continuity of the urban community is fully leveraged and respected. Cities are composed of a diversity of social groups of which the spatial attribute is the community and the temporal attribute the community tradition. With respect to the spatial dimension, authenticity means protecting the existing architectural composition of the community and retaining existing spatial symbols even if cities are in the process of renewal. Concerning the temporal dimension, authenticity understands the organic continuation of community traditions.

This chapter presents five cases focused on the principles of authenticity, participation and extension. Firstly, the case in Chengdu, China. Aiyouxi, an organization seeking to build social connections and community autonomy, highlights the impact active community work has had in strengthening participation in social life among community members at the community level. Secondly, Beijing's Baiwan social housing development project showcases a

1 This chapter was contributed by the team led by Yu Hai from School of Social Development and Public Policy of Fudan University. The authors include: Sun Zhe (Shanghai University of Finance and Economics); Liu Zhaoyin (Jimei University); Yang Ling (Chengdu Aiyouxi Community Development Center); Zhu Yi (NPO Development Center, Shanghai); Liu Zhen (The UNESCO World Heritage Training and Research Institute for the Asia and the Pacific Region); Si Zhu (Shanghai Clover Nature School Teenager Nature Experience Service Center); Zou Huahua (Shanghai University of Medicine & Health Sciences). A special thanks goes to Liu Fei from Chengdu Aiyouxi Community Development Center for his involvment in the discussion and writing process.

pioneering approach to social housing delivery in the city centre – novel housing for low-income residents, typified by people-centred, inclusive and open design concepts which enhance social connection and urban integration. Hanoi's use of the ISHC developed by HelpAge International highlights the success of community-based health care models to enhance the well-being of the elderly and vulnerable members within local communities. The project has helped to create synergies to help the community tackle social challenges through a holistic, intergenerational approach in which people are treated as assets and partners in the development process. Odisha, India's Urban Wage Employment Initiative demonstrates how a proactive social welfare initiative led by the Odisha state government in response to the COVID-19 pandemic helped empower marginalized individuals through employment provision in the form of labour-intensive public works, co-facilitating community upgrading to increase community prosperity and resilience. And the final case reflects the Barrio Mugica social urban integration project in Buenos Aires, a successful example of the social re-integration of a historically excluded community in the heart of the city where urban infrastructural upgrading and formal services delivery has catalysed a remarkable transformation to improve the lives of local residents.

Case Studies

Chengdu, China: Chengdu's Aiyouxi – Creating Connected Communities and Community Autonomy[2]

Case background

The Chengdu Aiyouxi Community Development Centre is one of the top 100 social work organizations in China. The centre's associated Yicang Neighbourhood Mutual Assistance Programme is recognized on the United Nations Volunteers programme's Knowledge Portal on Volunteerism for its contribution to SDG 1: No Poverty. From 2009 to 2018, Aiyouxi has fostered 739 volunteer groups of 15,748 volunteers and encouraged 2,719 residents to become active volunteers for their neighbourhoods. Working in various fields including social relief, residents mutual assistance, volunteer organizations, community culture and environmental safety, among others, Aiyouxi is more cross-disciplinary, active and influential than regular social work organizations in China. Aiyouxi has been involved in localization of SDGs in two main aspects. Firstly, it has helped develop social resilience in vulnerable groups, and secondly it has promoted participatory self-governance at the community level.

Implementation process

1. Leveraging experience in volunteering to establish a social work organization

As the founder and core representative of Aiyouxi, Liu Fei was a volunteer for many years before she established the organization. Based on the premise of the 'involvement of all', Aiyouxi[3] focuses particularly on individuals who are in disadvantaged situations.

Fei has a lot of experience initiating, organizing and leading volunteering activities. She started by promoting voluntary blood donations in 2009 working with around 300 volunteers script writing, acting, filming, editing and producing promotional videos (see Figure 2.1). The group subsequently established the Aiyouxi Drama Club aimed at promoting volunteerism especially on welfare issues of blind children and children living in rural areas who were being left behind.

It soon became apparent that more tangible interventions were needed working directly with individuals in challenging contexts, a vision that

2 Many thanks to Liu Chaoyin (Professor at the College of Arts & Design, Jimei University) and Yang Ling (Director of Cultural Project at Aiyouxi) for the development of this case study.

3 Aiyouxi translates as 'I-YOU-SHE' meaning the 'involvement of all'.

Source: Image authorized by Aiyouxi

Figure 2.1 Volunteers filming the voluntary blood donation public welfare drama *Journey to the West: Seeking Blood*

transformed into the social work organization, leveraging their wealth of experience in volunteering.

2. Undertaking social work in line with the local context through the principle of mutual assistance

Aiyouxi's transformation was accelerated through local government support from the Jinjiang district in Chengdu who provided free office space, training and project opportunities. The Aiyouxi Community Culture Development Centre was subsequently established in 2011. Most social work organizations in China have a close relationship with the government, acting as agents to deliver assistance and services to disadvantaged persons and communities via a top-down approach while avoiding addressing deeper questions of structural issues within society. This conventional means of social work plays the role of a service provider as opposed to social activists. Without professional constraint and because of their experience in volunteerism, Aiyouxi confronts complex social challenges via a different approach, looking for structural strategies that tackle root causes.

The first community survey conducted by Aiyouxi was in the Shuijingfang sub-district in 2011. Shuijingfang is a downtown area steeped in heritage, a centre of urban renewal in Chengdu. However, there are complicated social problems hidden behind the newfound prosperous urbanization. The old, original neighbourhoods generally lacked any form of property management, and with most of the residents being older and on a low income, they gained only a little support from the government or their relatives. In general, the more disadvantaged the residents were, the less they understood how to enable and leverage mutual help within the community; and even when they did, their capabilities were very limited. Surrounding urban renewal then brought tenants into the old neighbourhoods, causing a disturbance to the original population structure. This in turn created friction between old and new residents, where the young and middle-aged were largely indifferent to public affairs whilst older residents typically sought to listen to the government.

While these social problems were seen to be systematic and not in isolation, it was understood that monetary donations as a temporary measure would not solve the underlying structural issues. Aiyouxi did not want to facilitate one-way relations through a means of giving and receiving, but instead sought to blur the boundary between donors and recipients, building mutual assistance between them. To establish a mechanism to ensure the roles of donors and receivers were interchangeable, Aiyouxi acknowledged the importance of events and face-to-face communication to create a more tangible and impactful system – promoting the notion that community challenges must be solved within communities via mutual help amongst community members themselves.

3. Developing the Yicang Neighbourhood Mutual Assistance Programme

Aiyouxi introduced the Yicang Neighbourhood Mutual Assistance Programme to Chengdu,[4] seeking to build vibrant, resilient communities with strong foundations and a culture of volunteerism. Yicang consists of four aspects: ① The store, managed by Aiyouxi, in which each item carries an independent code so that it can be traced using tracking software and the internet; ② Donors, whom Aiyouxi refers to as 'compassion

4 Yicang originally refers to the traditional public granary in the rural area which the imperial authority failed to effectively reach – a grassroots communal assistance mechanism managed by people in local villages.

families' typically community opinion leaders which then extended to ordinary residents. While some people were hesitant about volunteering, Aiyouxi persuaded opinion leaders to take voluntary action first, which attracted other people to participate through a snowball effect; ③ Recipients such as disadvantaged families; and ④ Neighbourhood mutual assistance centres – a type of community volunteer organization overseen by Aiyouxi who are in charge of delivering supplies.

To enhance resident participation and the sense of community, Aiyouxi extended Yicang to a series of sub-projects including:

- A Spoon of Rice: children and parents in the community are invited to contact 10 neighbours and receive a spoon of rice from each resident, to initiate the sharing of a community meal, as shown in Figure 2.2
- One-Audience Theatre: community volunteers perform theatre plays – even if there is only one person in the audience. This form of entertainment reduces social isolation (particularly for those who are living alone, aging and/or disabled), helping to build bridges between them and the wider society
- Yicang Stop: this operates to receive small non-cash donations including used materials, food and laundry products, and personal time, among others. Beneficiaries can subsequently become service deliverers by donating their time
- Charitable Market: to balance the gap between the donations of used materials and the demand for food and washing detergent, the charitable market was opened where residents can sell used items with the proceeds donated to Yicang to help support the needs of the disadvantaged. Free health clinics, charitable performances and

Source: Image authorized by Aiyouxi

Figure 2.2 Community members participating in A Spoon of Rice

NGO exhibitions are also provided in the charitable market. Resource exchanges and face-to-face communication make it a very popular community occasion, and it marks a unique opportunity for the development of community volunteer organizations

- Charitable Lattice: while Yicang and the charitable market can relieve difficulties in some areas, they cannot completely solve all livelihoods problems. The Charitable Lattice cooperative therefore emerged where, through the use of public space on the street, lattice shops could be built with small grants (CNY 1,000 or approximately USD 150) offered by individuals or enterprises. Donors can then become shareholders of the fund, and disadvantaged individuals can establish their own businesses or join a cooperative with a small lattice shop (see Figure 2.3)

Source: Image authorized by Aiyouxi

Figure 2.3 Participants gather in a meeting of the Charitable Lattice cooperative sub-project

Since 2013, Aiyouxi has been promoting Yicang nationwide. Currently, Yicang has extended to 32 provinces (municipalities), 98 cities, 2,600 communities, 300,000 families and 3,000 organizations, with over 5 million people having participated in related activities. Through a mix of formal and informal volunteering, and mutual assistance vulnerable and marginalized community members are encouraged to become active volunteers reducing their social isolation. This has allowed for more resilient, collective responses, highlighting the importance of participation to build confidence and empower local people and communities.

4. Fostering a collective approach to social consensus building to strengthen community autonomy

Following the success of preliminary project work, Aiyouxi were invited to take part in a specialized project to promote community autonomy by the local government. In the context of China's community governance, community autonomy is by law, the goal; however, in reality the administrative authority penetrates almost every aspect of daily life. Following the catastrophic earthquake on 12 May 2008, Chengdu government called for societal solidarity during post-disaster reconstruction and generated policy to boost the development of social organizations and empower self-governance at the community level. To this end, Shuijingfang sub-district government assigned Aiyouxi to work actively on enhancing community autonomy.

Chengdu's municipal government has attempted to construct community autonomy at the neighbourhood level and institutionalize neighbourhoods through three major organizations: ① the party group; ② the neighbourhood management committee; and ③ the local council. However, following unsuccessful attempts in institutionalization and neighbourhood committees' self-management, Aiyouxi recognized that the real obstruction to community autonomy was the defect of social connection, i.e., that when people do not know each other, it is challenging to persuade them to work together. Aiyouxi therefore, amended the strategy to address social connection and community demands, enhancing links between residents by encouraging them to assist disadvantaged individuals and encouraging them to solve common neighbourhood issues by building acquaintances with neighbours. When residents become accustomed to solving common issues in public negotiation, self-governance is initiated.

The first step Aiyouxi took to encourage public discussion was to initiate resident forums to make common issues explicit in order to help tackle issues through open discussion and collective action. To highlight this, where there were complaints about poor urban environmental quality, Aiyouxi encouraged those interested in environmental protection and who were willing to reduce waste, to build farmable

gardens using common community land, as shown in Figure 2.4. Where issues of safety arose due to illegal construction, Aiyouxi provided support in applying for the community security council to conduct a safety inspection, guided residents to discuss demolition plans and helped applications to the governmental maintenance fund. In addition, where some residents complained about a lack of public facilities, Aiyouxi identified and encouraged individuals to become active volunteer leaders and helped them implement their community improvement proposals for the public good. In combination, these actions built confidence among residents to discuss, negotiate, propose and work together on public affairs towards a common good. It also transformed the mentality of older residents who were used to relying on governmental intervention (a lengthy process which, historically, did not lead to fast results) and instead empowered them to take matters into their own hands.

It was recognized that common neighbourhood issues are not necessarily concerned with common interests, but more often a conflict of interests. To address this, Aiyouxi devised strategies to encourage mutual assistance as part of a greater collective moving away from the notion of an individualistic society. In instances where there was conflict among residents, Aiyouxi encouraged these matters to be expressed and provided rules, methods and platforms to help them negotiate and constructively address the issues. In these situations, the subsequent resident forum would not be initiated until the proposed common issues

Source: Image authorized by Aiyouxi

Figure 2.4 Community members take part in the co-production of food via shared urban gardens, bridging social gaps and promoting a greater sense of community

from the previous forum were solved. Via this method, residents became open to discussing public affairs and learned to balance their own interests with public interests to reach consensus through negotiation and mutual understanding – a key step for effective self-governance.

5. Enriching community identity to strengthen social solidarity

To fully embed community self-governance, a sense of community and identity is key. Aiyouxi initiated cultural activities to create a deeper and richer sense of community, promoting 'action research' to collaboratively build local knowledge with residents, covering elements such as oral history, community video and theatre, and food culture, among other topics. Art interventions such as the Lab of Artistic and Social Innovation; Fanjian Community Public Art Festival; Community Miniature Art Museum; Community Curator Training; and the Love Museum were set up in which associated dialogic artists co-created public art with residents, playing an effective role in activating reflection among residents in regard to their own communities and strengthened community identity (see Figures 2.5 and 2.6).

Source: Image authorized by Aiyouxi

Figure 2.5 Volunteers and social workers film the documentary *Relocation*

Source: Image authorized by Aiyouxi

Figure 2.6 The Fangjian Community Public Art Festival

In addition to stimulating diverse social groups, Aiyouxi also promoted social reconnection and reorganization. Firstly, for the community level at the stage of self-governance, the need for leading community activists was evident whereby Aiyouxi's role was to provide opportunities for community members to initiate mutual cooperation and assistance. Interest clubs and community demands simplify this process with the establishment of various groups catering for night-runs, parent-child reading and patients with ill-health within communities. These groups automatically overlap to form networks in which active members operate as individual network nodes connecting inter-group relations from which networks of mutual assistance grow and strengthen community resilience. Secondly, Aiyouxi provides certain curriculums and small grants programmes to enhance the capacity of volunteers, bolstering reputations due to their enhanced capabilities in public affairs. In accordance, volunteers naturally gain the position of central organizers and when more volunteers transition to organizers, this promotes evolution and growth within communities from preliminary phases of self-governance to more mature, autonomous and democratic forms of self-governance at the community level.

Based on the abovementioned progress, this allows the process of reorganization to proceed involving the development of an institutionalized hierarchy of organizations. For instance, neighbourhood organizations can be reorganized to operate as associations at the community level. And within the associations, neighbourhood organizations can negotiate the allocation of resources. Community associations with various issues can also be reorganized to form a union which cooperates and negotiates with community committees as part of a community governance process. In this way, although the nature of the community committee in China is administratively driven, it will not fall into totalitarianism as unions are generated from the bottom-up.

To further deepen their work in certain communities and increase independency, Aiyouxi transformed their community work from project-oriented to site-oriented in 2019. Regarding the project-oriented modality, the quality of the project is greatly influenced by preferences and government support and policy. As for the site-oriented mode, the government is needed to provide public spaces in exchange for the community services provided by Aiyouxi for a specific time. The site-oriented mode liberates Aiyouxi from the stated contracted goals, enabling Aiyouxi to focus solely on the dynamics of communities and thus identify the actions necessary, including the introduction of community commerce to empower local communities. Where Aiyouxi defines their work as 'developmental social work', they accumulate experiences regarding the management of common properties so they can support community assets in a more sustainable manner (by setting up community funds for the revitalization of idle assets in public services, for example).

Reference experiences

1. Understand the value of 'developmental social work' as established by Aiyouxi

Similarly to conventional social work organizations in China, Aiyouxi facilitates service delivery; however, it uses a unique and novel approach. The extension of social work across China began in 2013, typified by the top-down delivery of services which avoided direct involvement and engagement on a personal level. Aiyouxi aims to create networks of social connections in which donors, recipients, social workers, volunteers, organizers, participants and the government all mutually benefit – what Aiyouxi terms 'developmental social work'. This includes a number of aspects: ① Through the spirit of volunteerism, Aiyouxi attempts to manage service delivery within the community itself and enable neighbours to mutually help each other, transitioning from the reliance on external resources; ② Through the enthusiasm of volunteering and the recognition that identity serves as a driving force, Aiyouxi encourages its staff members to allow connections between service recipients to occur naturally. With their assistance, helpers and recipients are encouraged to share life stories in the form of a growing group to enhance mutual understanding, empathy and identity; ③ By understanding and accepting the nature of human selfishness, Aiyouxi creates opportunities to allow people to benefit from helping others. Under this notion of 'helping

themselves via helping others', Aiyouxi organizes mutual helpers into various social groups which are further interlinked into a matrix of social networks. Individuals belonging to a certain group can find others through this matrix to help others or gain help from others, reducing their isolation and presenting them with the opportunity to become potential volunteers; and ④ Once volunteers emerge it is essential that they are organized to maximize their potential in leading community actions. Bringing individuals together does not necessarily lead to them working together unless a certain degree of organization is managed. Through good organization, communities of mutual benefit, public welfare and commercial cooperatives are constructed step by step.

2. Build community autonomy based on strong social connections

When developmental social work expands to community autonomy, the social connections with some degree of organization can promote social solidarity. The top-down model of administration may be more efficient for forming legitimate bodies of neighbourhood autonomy; however, these bodies tend to collapse quickly due to the absence of a social foundation based on organized connections. For neighbourhoods lacking self-governing habits and capabilities, it is fundamental to unfold a bottom-up procedure. The following principles are key:

- Establish neighbourhood groups based on daily life and activities including hobbies, interests, preferences, value orientation, devotion, charity or mutual assistance. By activating these neighborhood groups, potential volunteers will naturally emerge
- Initiate resident forums to allow residents to raise any issues and complaints or concerns, suggestions and wishes, and highlight the common issues which need to be solved by collective actions
- Provide methods and rules of public discussion to help residents resolve issues through their own solutions and avoid engaging in the conflicts of interest
- Provide small resource allocations and support residents to implement their solutions, and ensure they maintain practice in co-planning, co-building and co-management
- In order to gain the trust of people, do not call the next resident forum until the previous common issues are successfully resolved
- Based on the above, through commendation and training, increase the capability, recognition and appeal of active volunteers emerging from the residents. Build a network of social groups to consolidate and strengthen social resilience. Cooperate with the government to establish formal institutions of neighbourhood autonomy including local councils and neighbourhood management committees.

3. Create communities that value and apply the principle of helping others

It is a common phenomenon for participant motivation to weaken over the course of public welfare projects. To counteract this issue and to ensure pragmatism, Aiyouxi has acknowledged and adapted to this reality, encouraging resident participation in line with the principle of 'benefiting yourself from serving others'. In order to transform the roles of isolated residents into mutual helpers and active volunteers in the public domain, a transparent, open and traceable institution is necessary – in particular for urban communities where there may be little trust amongst the population. This is exemplified through Yicang in which a clear system of management, warehouse manager responsibilities and donor information is required for material warehousing. For material delivery, it contains delivery plans, material receipt publicizing, materials registration records, recipient information and real-time information on delivery. For the query and supervision of Yicang, there are regular inventory checks, real-time updates and statistical analysis whilst Yicang's management software provides traceable bar codes for each item so that donor requests for information can be promptly responded to. In addition, five databases about volunteers, donor families, recipient families, assistant enterprises and the media have been created so that all actions are open to the public. Through performing tangible actions, the public credibility that is generated

from this system of transparency and openness leads to a qualitative change in the participators.

4. Leverage the Chengdu model for community autonomy

The success of Aiyouxi as an exemplar of social work organization promoting social connection and community autonomy owes to the fact that Chengdu has been committed to promoting community co-governance and resident autonomy :

- From 2003 to 2008, Chengdu promoted the institution of community council, firstly in rural villages and then extending into urban communities. Community empowerment and resident participation were here determined to be the key governance objectives
- From 2009 to 2012, the institution of community public finance was constructed from rural villages to urban communities. The institutions of community council and community public finance founded a base for participatory governance which facilitated organizations, regulations, activities and the financial disclosure of neighbourhood autonomy
- Since 2010, Chengdu has emphasized the policy of 'delegating power, empowerment and restoration' for community governance. Delegating power means to guarantee the capabilities and behaviours of resident self-governance; empowerment refers to guaranteeing resources that support community autonomy; and restoration relates to the normalization of sub-district governments and community committees
- Starting from 2014, Chengdu initiated the 'three socials' programme in which community committees are responsible for identifying resident needs. Based on these needs, social work organizations develop service projects and social workers deliver professional services, whilst financial support is provided by the government
- Since 2016, Chengdu has promoted a programme of community empowerment emphasizing resident subjectivity, democracy by discussion, bottom-up procedure, participation, rights-responsibility consistence, process orientation and sustainability
- Since 2018, trust governance has been in operation which requires introducing a trust system into neighbourhood management strategies using a transparent and participatory mechanism

Beijing, China: Baiwan Jiayuan Social Housing

Case background

Baiwan Jiayuan is located in the city centre to help promote social integration among low-income groups through more dignified living. The project aims to build high-quality social housing on a large scale via the joint efforts of government, enterprise and society based on the concepts of open neighbourhoods, three-dimensional communities and access to adequate sunlight. This enables people who would be challenged to find affordable housing to rent property in decent living conditions and dignity, whilst facilitating their contribution to sustainable development in the city and society on the basis of community integration. Ma Yansong, the main designer of the social housing and an internationally renowned architect, focuses on 'people' in the course of her design, attaching importance to efficiency and functionality. Interviews were conducted with local communities to understand their needs, and the overall aesthetics of the buildings were also taking into account when planning for public activity spaces so as to increase the connection between the community and the city.

The social housing project is managed by the Beijing Municipal Affordable Housing Construction Investment Centre, a state-owned enterprise established by the Beijing State Government in 2011. It is a representative and exemplary project among more than 100 social housing projects in operation across Beijing. Unlike other social housing which is located in remote areas where transportation is inconvenient, Baiwan Jiayuan is just outside the East Fourth Ring Road – a controlled-access expressway – and is also situated close to a metro station. The project covers an area of 93,900 m^2 with a total floor area of 473,300 m^2

and a capacity of 4,000 tenants.[5] In 2014, the Beijing Municipal Affordable Housing Construction Investment Centre invited MAD Architects to be involved in the design process. The construction of the housing was completed by the end of 2019, and the first allocation of rental places were initiated in the second half of 2020. By the end of 2021, the occupancy rate had reached 70 percent with approximately 3,000 tenants.

To strengthen urban connections, MAD Architects promoted integration of the Baiwan Jiayuan community to the rest of the city using strategic design, with roads passing by the six internal blocks ensuring connection with external urban roads. This has enabled cars to pass through the community and strengthened communication and connection between people inside and outside the social housing area. In terms of community building, MAD Architects has made Baiwan Jiayuan three-dimensional, integrated a raised second floor above ground to increase the green area and provided valuable community space for tenants to interact and for recreation. In regard to architectural appearance, Baiwan Jiayuan is composed of 6 small blocks surrounded by 12 residential buildings, each of which contains a Y-shaped structure with between 6 to 27 stories to maximize sunlight into residential units, as shown in Figure 2.7.

Social housing has operated as a global welfare practice since World War Ⅱ, and cities such as Paris and London have pioneered social housing concepts and projects. However, there have been unexpected side effects as a result. Confronting these lessons, the social housing in Beijing aims to solve the key challenges in order to increase success in the delivery of innovative social housing. Isolation in remote areas

Source: World Architecture Community. URL: https://worldarchitecture.org/article-lins/enhcg/mad-built-its-first-social-housing-project-in-beijing.html (2022) (Accessed: 18/08/2022)

Figure 2.7 The spatial composition of Baiwan Jiayuan, characterized by six core blocks and distinct Y-shaped building footprints

5 World Architecture Community. URL: https://worldarchitecture.org/article-lins/enhcg/mad-built-its-first-social-housing-project-in-beijing.html (2022) (Accessed: 18/08/2022).

is a chronic problem for social housing, and tends to lead to informal settlement development. Extensive social housing built in France during the second wave of nationalization in the 20th century is a typical example. In 1958, with the surge in demand for short-term housing caused by the post-war baby boom and the influx of immigrants, the French government was urgently needed to create a balance between residents and urban space, and relieve the pressure caused by traffic and crowding in urban centres. Large numbers of social houses were built on the fringes of the city in the 1980s, envisioned to accommodate new arrivals and effectively integrate them into the urban economy. Residents in downtown Paris today know little about these densely distributed houses on the city fringes, with a large number of them having fallen into disrepair due to a lack of attention from the government. The entire social housing area appears desolate externally, hosting communities with a number of aggravated social problems.

Where residential segregation often sparks social segregation, it is frequently associated with the operation of social housing. Social housing has not yet been able to effectively promote the communication and integration of different social groups in respect to design and operation, and hence social welfare policy has become an accelerator for social disintegration to a certain extent. The apartment complex in Marseille designed by Le Corbusier is a programmatic example among the mass-built social housing projects in France in the last century. The designer hoped to provide housing for more people from the working class and diversify public spaces through modern construction technology. However, settlements in remote areas failed to operate as successful places for people to connect to the urban economic system, and thus became desolate. This led to a split in the population with some individuals moving closer to Paris's city centre and others further away. Some residents also chose to stay as they were unable to leave or were nostalgic for the community. With poorly lit spaces in the building complex and an insufficient police force on the outskirts of the city, these factors constituted favourable conditions for crime, and with an increasingly complex and dangerous environment, residents became reluctant to use any of the public spaces. Typically, over time, communication between the residents in the community and the wider city has become more fragmented, exacerbating issues of exclusion and segregation on the fringes of the city.

Poor infrastructure quality is also a recurring problem in social housing development. The Grenfell Tower catastrophe on 14 June 2017 is a marked example of this. A 24-story block of flats built for social housing in the 1970's in west London, Grenfell Tower caught fire killing 72 of its residents and leaving the block largely uninhabitable. In recent years, an increasing proportion of old social housing estates have been dispensed into the private property market for sale under Right to Buy schemes, and non-profit organizations responsible for their maintenance lack the motivation to keep the buildings safe due to fragmented property transfers. Surface renovations are often prioritized to make the building look cleaner to attract potential buyers. Grenfell Tower underwent redecoration to its outer wall shortly before the tragic accident, with the materials used appearing to be inflammable. The commercialization of social housing and the inability to maintain public services are thus major challenges facing social housing today.

Implementation process

In the development of the social housing in Baiwan Jiayuan, attempts have been made to address the key problems as highlighted. Efforts have sought to optimize the project site selection, residential design, community planning and operations management, among others.

1. Optimizing the location of social housing

Houses should be built in core urban areas instead of suburban areas; Baiwan Jiayuan is located in the east of Beijing's central urban area. Baiwan Jiayuan is well equipped for the various groups with difficult housing conditions, and social integration has been addressed through its strategic location in the city centre. Tenants are comprised of migrant workers, senior citizens and individuals without local home ownership. Migrant workers are mostly engaged in basic services work where the close proximity to the centre affords them reduced commuting costs and more increased job opportunities. Whilst most of the senior citizens are retired and have no commuting needs, many of them

have an interpersonal circle close to the city centre and if they move too far away it will be difficult for them to maintain their social relations. The delivery of a fixed and formal residence therefore helps the seniors maintain tighter-knit social circles. The Baiwan Jiayuan project has therefore made key breakthroughs compared to previous social housing project model, because of its strategic site selection (see Figure 2.8).

Source: MAD Architects. URL: http://www.i-mad.com/. Accessed: 23/08/2022)

Figure 2.8 Residents of Baiwan Jiayuan

2. Maximizing project technical capacity to ensure high-quality social housing development

To ensure high-quality design in the development of Baiwan Jiayuan's social housing, Ma Yansong provided innovative spatial and architectural solutions in the housing design process and in the establishment of social rental housing standards, addressing specific social challenges. The project manager has stated said that Ma Yansong was invited to design the social rental housing not for the design itself but for setting the benchmark in this regard. Social challenges were addressed through bold and innovative means, and were targeted through architectural design as opposed to solely tackling issues of spatial relationships.

The project has also targeted the issue of housing exclusion caused by inflated housing prices. In 2014, Ma Yansong's team initiated a research project on the 'sociality of social housing', investigating the development history and design concepts of social housing in various countries (see Figure 2.9). During the design of Baiwan Jiayuan, designers aimed to reconfigure the impression of social housing among the general population, challenging the common notion that social housing offers no further benefit than simply just living (conclusions that were drawn from focused studies and social dialogue). Where many interviews were conducted with local residents to understand their needs and hopes regarding living space during the design process, this helped create a participatory and inclusive design process. Crucial to informing the design process, many key design concepts were drawn. It was highlighted that the happiness and contentment of local people in social housing communities is largely generated from a strong sense of community, the openness and integration of the community with the rest of the city, and the availability of space available for human interaction and connection.

Source: URL: https://www.nfpeople.com/article/11087 (Accessed: 23/08/2022)

Figure 2.9 Ma Yansong in discussion with colleagues on public housing

The principle of living with dignity has been emphasized and the experience of decent living popularized (see Table 2.1). Where the project has sought to ensure all residential units are afforded adequate levels of light it could have been difficult for individual apartments to access sunlight evenly from different orientations. The design team aimed that all housing would be oriented toward the south to receive maximum levels of daylight it is particularly important for residents in small social houses (see Figure 2.10).

Source: Arch Daily. URL: https://www.archdaily.com/984014/baiziwan-social-housing-mad-architects/62b1b8be3e4b3134d8000015-baiziwan-social-housing-mad-architects-photo (Accessed: 22/08/2022)

Figure 2.10 Ensuring adequate daylight was an essential principle in the project

Table 2.1 MAD Architect's advocacy principles for social housing

MAD Architects New Housing Principles	Simple aesthetics
	Space greening rate
	Understanding sociality with individuality
	Reserved space for flexible development
	Abundant space and pleasant size
	Open community integrated into a city
	Staying close to nature

Source: MAD Architects:URL: http://www.i-mad.com/ (Accessed: 23/08/2022).

Covering issues of accessibility, design quality and spatial functionality to social empowerment, Baiwan Jiayuan promotes self-governance among tenants as well as awareness on rights in reserved public spaces. To foster strengthened connections and increased integration from the community to the wider urban area, Baiwan Jiayuan was designed to be open, with greater routes into and out of the development, and more public spaces. A 3D design approach was applied to the community with park space and landscaped areas allocated to an elevated tier (functionally the second floor), whilst individual units within the community are inter-connected by open streets and bridges in the elevated space as shown in Figure 2.11. These measures have helped to reduce the issues of segregation and isolation between the open block and the internal public space.

Source: Arch Daily. URL: https://www.archdaily.com/984014/baiziwan-social-housing-mad-architects/62b1b8be3e4b3134d8000015-baiziwan-social-housing-mad-architects-photo (Accessed: 22/08/2022)

Figure 2.11 Elevated spaces containing natural ecology and greenery maintain connections between blocks via pedestrian walkways and offer space for leisure and interaction

Preserving open space has encouraged more diverse community participation, whilst features such as the integration of a sunken plaza provides an activity space for children and youth, as well as older residents (see Figure 2.12). Informal public space has also been appropriated by residents, for example, a dance group has converted an unused road into a dance square, spatial transformation that has stemmed from the participation of women in the community (see Figure 2.13).

Source: Dezeen. URL: https://www.dezeen.com/2022/06/20/mad-social-housing-project-china-baiziwan/ (Accessed: 27/08/2022)

Figure 2.12 The sunken plaza serves as a multifunctional component for local residents to enjoy

Source: Photo authorized by the *Breaking the Wall* documentary film crew

Figure 2.13 A dance class is held on an unused road

Reference experiences

1. Ensure that public policy affords tenants with the right to adequate housing, and ensure social housing developments promote social vibrancy and respond to the needs of local residents

As a fundamental right in the city, it is essential that all tenants are afforded the right to adequate housing. Social housing reflects this by serving for the collective good, and constitutes a core part of the social welfare system. Cities must ensure that both rental properties and those for sale are promoted through an equal rights approach, providing equal opportunity for both tenants and homeowners. The design and functionality of social housing development must be of a high-quality and work for those residents. Through the project design process, field research and consultations should be conducted with local residents to ensure their needs are understood. The production of space in urban areas has long been characterized by commercial properties based on land rent with the centres of cities typically occupied by expensive houses. Only in terms of social attributes can public housing be located in the city centre, whereby people not only want a lower cost of living but also higher-quality living conditions and convenient transportation. The social housing delivered in Baiwan Jiayuan has achieved a balance among various needs such as site selection, cost and living quality, and has crucially realized the sociality of public housing.

2. Connect and integrate social housing developments into the wider city, transitioning from the notion of 'community' to 'society'

In pursuit of security, privacy and private claims to public space, most residential buildings in China are situated within gated communities. When discussing the value of open communities, Ma Yansong says that gated communities create 'black holes' within cities where walled barriers create areas void of social interaction and instead produce enclosed spaces that are socially isolated from the rest of the city. Eliminating the barriers between housing and individual urban communities, and promoting connection and integration between different communities thus generates significant social value to create more cohesive and inter-connected urban societies. It is important that cities facilitate housing developments that maintain compatibility and ensure fluid transitions between inter-linked communities so as to encourage social stability, connectivity and prosperity.

3. Promote self-organization among tenants and build their capacity for self-governance and mutual support to create more sustainable and resilient communities

Promoting self-organization among tenants is important within shared living environments built upon common interests or through voluntary organizations formed for mutual support. Regardless of the motivation for its formation, self-organization can enhance the connection and trust among community members and become an important part of the social

support network for individuals in the community. In addition, well-developed mobilization-action patterns created by various self-organizations in daily operation can enable self-organizations to respond quickly to external shocks. As a result, tenants' self-organizations can help enhance the resilience and stability of their communities against crises.

Hanoi, Vietnam: Hanoi's Intergenerational Self-Help Clubs

Case background

As a country in transition, Vietnam is on the brink of having a dramatic aging population that is occurring faster and at an earlier stage of development than most other countries globally. In 2015, the country became an aging society with projections indicating it will become an aged society by 2035.[6] Coupled with the fact that the per capita income of Vietnam is just 40 percent of the global average, this has presented the country with significant challenges in regard to achieving socio-economic prosperity. It is lagging behind in the region in regard to achieving an upper middle-income status by 2035. Critically, such changing demographic compositions have placed a burden on health-care systems, reinforcing the need to expand the nation's social welfare system and develop a vibrant long-term care system throughout the country.

In 2019, the General Statistics Office of Vietnam conducted the fifth demographic census and housing census with the assistance of the United Nations Population Fund. Presenting the main characteristics of the current population over 60 years old in Vietnam, the report highlighted that at the time of its conduction, women accounted for approximately 60 percent of Vietnam's older population with nearly 70 percent of the older population living in rural areas, specifically in the north of the country. The report presented recommendations that the national government should prioritize the elderly in rural areas, especially women, when planning for and providing long-term care services for senior citizens.[7]

HelpAge Vietnam, registered in 2011, is the only international organization in the country that focuses on aging and supporting the elderly. It was initiated and established by HelpAge International, a non-profit organization headquartered in London, and has worked with the Vietnam Women's Union since 1997. The traditional model of the Older People's Association marks the initial exploration by HelpAge Vietnam to establish project-based associations for older persons to respond to their specific social needs, such as the protection of their rights and interests, healthcare, livelihoods, social security and empowerment. However, this model soon encountered bottlenecks, including the limited social function of each project, lack of motivation among local partners, high project costs, over-reliance on external funding and the need for long-term support.

In late 2005, in partnership with the Vietnamese Senior Association and the Vietnam Women's Union, HelpAge Vietnam launched an innovative pilot project called the Intergenerational Self-Help Club (ISHC), a development model focused on a community-based approach to achieving active aging, inclusive development and increasing access to home care services. Proven to be very effective in practice, ISHC has been approved by the Prime Minister for the second time and officially replicated and promoted at the national level – it has also been recognized by the United Nations as an excellent model to help achieve nine SDGs at the local level.[8] In 2020, the Japan Centre for International Exchange and the Economic Research Institute for ASEAN and East Asia jointly awarded HelpAge Vietnam with the Healthy Aging Prize for Asia Innovation. According to the official website of HelpAge Vietnam, there were 3,842 ISHCs by the end of 2021, distributed in 61 of 63 provinces and cities across Vietnam,

6 The World Bank. Vietnam: URL: https://www.worldbank.org/en/country/vietnam/publication/vietnam-adapting-to-an-aging-society#:~:text=In%202015%2C%20Vietnam%20became%20an,getting%20old%20before%20getting%20rich (2021) (Accessed: 09/07/2022).

7 General Statistics Office of Vietnam. URL: https://vietnam.unfpa.org/sites/default/files/pub-pdf/ageing_report_from_census_2019_eng_final27082021.pdf (2021) (Accessed: 10/07/2022).

8 The SDGs in focus include SDG 1, 2, 3, 4, 5, 8, 10, 11 and 13.

with over 210,000 club members, 12,000 home care volunteers and 4 million direct beneficiaries.[9]

Implementation process

Hanoi, the capital of Vietnam, accommodates a greater number and higher proportion of individuals aged 60 and over compared to any other province or city in the country. In 2017, with funding from the Korea International Cooperation Agency and HelpAge Korea, HelpAge Vietnam launched a project code-named VIE70. The project aims to support older persons in communities such as those in Hanoi by replicating the model of ISHC. Following completion of the project in 2020, a total of 94 clubs had been established, almost 6 times the original target. With 78 clubs more than expected, Hanoi has proved to be the most successful city in replicating the club model. The clubs have raised around VND 420 million (approximately USD 17,600) within three years to maintain their operation. The 16 clubs in the project plan have a total of 868 active members, of which 390 applied for clubs' microcredit loans and all made the repayment. The clubs have become model examples among others in local areas by helping 97 people obtain home care services and 125 people policy benefits.

As completion of the project coincided with the COVID-19 outbreak, the clubs helped communities and health departments publicize COVID-19 pandemic prevention, promoting control measures, testing and community medical assistance. A retired civil servant, Dao Thi Hoa joined and chaired the ISHC in Hanoi's Khuong Din district at the age of 67, and found that many households were unemployed with no income during the COVID-19 pandemic in 2020. Accordingly, she called for 60 club members to jointly collect 1,000 pounds of rice, 85 boxes of noodles and cash for 30 of the most in need members to help improve their financial security, reflecting the Vietnamese principle of mutual helping (see Figure 2.14).

ISHC operates as a cost-controllable, replicable, multi-functional and inclusive project designed to address the social challenges in Vietnam in respect to rapid aging.

Source: National Public Radio.URL: https://www.npr.org/sections/goatsandsoda/2020/09/23/904604257/older-people-got-a-pandemic-problem-a-club-to-help-you-figure-it-out-yourself (2020) (Accessed: 10/07/2022)

Figure 2.14 The chairwoman of ISHC checking the club account book with other members in Hanoi's Khuong Din district

It aims to tackle this via five core premises: ① The process of social development, resource allocation and decision-making requires the participation of local governments and members; ② Older persons are assets and partners of the community; ③ Community residents can best measure out to what extent their lives can be improved; ④ People are more motivated to create positive changes when they trust each other; and ⑤ Responding to local needs through the community is a more inclusive and cost-controlled approach. The ISHC development model includes the following key elements:[9]

1. Identifying the right members

ISHCs are membership-based community self-organizations, each of which contains 50 to 70 members of various ages and backgrounds, most of whom are older persons, women and residents facing social or economic challenges.

Any local resident who meets the following conditions can join the club:

- Willingness to support oneself and others
- Ability to participate in club activities
- Voluntariness and passion

9 Help Age International. URL: https://helpagevietnam.org/ (Accessed: 11/07/2022).

- Agreement to abide by the rules of the club
- Agreement to pay membership dues on time (VND 2,000 ~ 5,000 per month, approximately USD 0.1 ~ 0.2 per month)
- Other members may be accepted

In line with the principle of mutual helping to improve the quality of life, the club also needs to follow three basic principles in its composition of members: ① Seventy percent of its members should be over 60 years old; ② Seventy percent must be women; and ③ Seventy percent should be people in challenged socio-economic circumstances such as those living alone, people with disabilities or chronic illness, people who are financially struggling or survivors of domestic violence. However, where 70 percent is only a proposed rate, 65 ~ 75 percent is also acceptable for each group according to local conditions . Most clubs have only 50 ~ 55 members in their first year of operation; however, the number increases as they continue.

2. Establishing diversified activities around the core club components

The purpose of the club is to improve the quality of lives of senior people, their families, individuals in need and also the quality of life in local communities. As a comprehensive development model promoting access to healthcare and social participation for older members of society, ISHC predominantly conducts activities around eight components: ① Income security; ② Medical care; ③ Lifelong learning; ④ Social care; ⑤ Community support; ⑥ Family care; ⑦ Resource mobilization; and ⑧ Rights and interests. These components aim to satisfy the different requirements of community members, especially older individuals and those in need (see Table 2.2).

Table 2.2 Core activities of ISHC

Core functions	Details activities
Food and income security	• A fund for generating income is set up to provide members with microcredit loans (up to VND 5 million or approximately USD 205 per person) • Communication concerning fundraising models and techniques as applicable to the elderly, poor and climate change is carried out quarterly on average • Economic development and industry teams with over five members are set up to support each other
Medical insurance	• Medical examinations are conducted for club members annually, including blood sugar testing • Blood pressure and weight are checked monthly • A lecture on healthcare and self-care is provided quarterly • Regular physical activity (including health maintenance, fitness and exercise) is encouraged • Health insurance is purchased for members and vulnerable members of the community
Lifelong learning	• Meetings to transfer new knowledge and skills for club members and community residents are organized every month (using village/community meetings and club events, etc.) • Information and documents are shared • Interest groups are established to share experiences and encourage learning from one another • Publicity through community-based radio stations or other loudspeaker devices is encouraged
Social care and connection	• At least one culture and artist team is built within each club • Clubs are encouraged to communicate and perform at local events • Home visits and condolences are made to members when they are sick
Self-help and social support	• Support is provided for at least one person in need in the community every month (in the form of labour, financial assistance, etc.) • Participation is encouraged in community-supporting joint work (e.g. cleaning, disaster prevention, etc.)

(Continue)

Core functions	Details activities
Home care relies on volunteers	• Older persons in need in the community are attended to with the support of local health centres • Each club takes care of five people, with each member serving at least twice a week

Resource mobilization	• The club earns income to maintain its operation by:
	  • Collecting membership dues
	  • Obtaining interest in the fund development
	  • Encouraging donations from the society
	  • Obtaining profits from the fund growing activities

Rights and defending rights	• Communication campaigns are carried out at least twice a year on relevant laws and policies including those on gender equality and combating elder maltreatment • A monitoring system is established to support the rights of older persons • Opinions are solicited from members on issues of mutual interest and submitted to local governments, departments and service providers
Monthly meetings for the club	• Opinions are collected and solutions discussed at regular meetings every month • Local officials are invited to the meetings for direct connection with residents • A meeting usually lasts about two hours, covering introductions, welcoming new members, reporting on events of the previous month, financial situation, questions & answers, mini-games, plans for the next month, etc.
Local cooperation	Cooperation is encouraged with local government departments for better implementation of local policies and projects, and members are mobilized to participate and provide support in disaster relief and mitigation, pandemic prevention and control, etc.

The principles of voluntariness, self-governance, democracy, equality, solidarity and cooperation are key for the successful development of a club, and all members can join or leave the club as they wish. The activities of the club are planned, implemented and supervised by the members themselves, whilst the club resorts to collective decision-making and voting if necessary. All members have the right to participate in and provide opinions on club activities and decisions. Club members should be always united, friendly, willing to share their ups and downs, and to help one another.

3. Developing an effective council

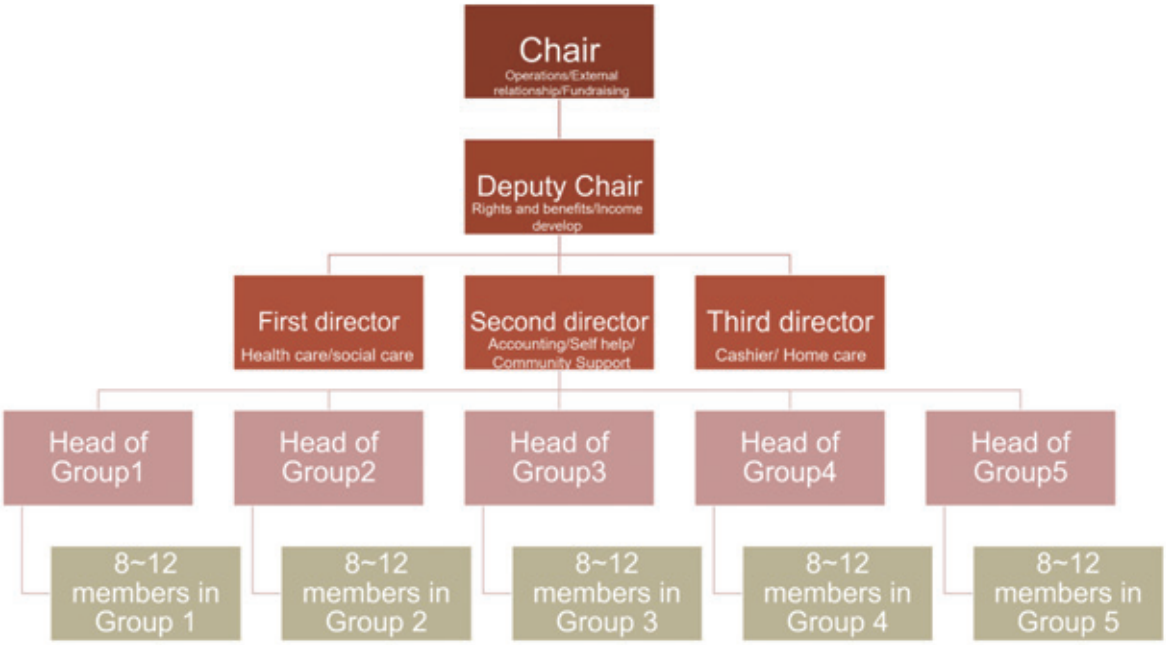
A total of five suitable volunteers are selected from members to form a biennial council that composes a diverse structure for each club (see Table 2.3). In terms of age, this includes two to three people aged 60 years old or over, with the remainder under 60 years of age. In terms of gender, there are at least two to three women; and in regard to social status, there must be at least one representative in the group in a challenging circumstance as per the stated criteria. A maximum of two to three council members can hold other positions in the community; however, the time required to serve the club may reduce the time for other part-time positions.[10]

10 Criteria for volunteers includes: being open-minded and willing to listen to others; learning and absorbing new thoughts; demonstrating enthusiasm, responsibility and energy; trusting and enjoying prestige in society, showcasing a willingness to help others, the ability to think rationally and the ability to lead the club for at least two years without financial compensation – ensuring availability and the ability to mobilize people via management skills; ensuring physically fitness, no dependency on alcohol or drugs, and no violence; and preferably to possess experience in community activities, have smartphone experience and own a vehicle (especially in the case of a COVID-19 outbreak).

Table 2.3 The roles and specific responsibilities of the club council

Roles of Council	Responsibility
Chairperson	• Comprehensive management, planning and reporting • Personnel management • Fundraising and resource mobilization • Partnerships • Receiving feedback and handling complaints
Deputy Chairperson	• Acting on behalf of the chairman when the latter is absent • Activities to secure income • Rights and interests-related activities
First director	• Health care and social care related activities
Second director	• Accounting • Self-help and community-supporting activities
Third director	• Safeguarding the funds of the club • Secretarial work and archiving • Home care-related activities

Source: General Statistics Office of Vietnam. URL: https://vietnam.unfpa.org/sites/default/files/pub-pdf/ageing_report_from_census_2019_eng_final27082021.pdf (2021) (Accessed: 10/07/2022).



Source: Help Age International. URL: https://helpagevietnam.org/tai-lieu/2022/gioi-thieu-ve-mo-hinh-cau-lac-bo-lien-the-he-tu-giup-nhau/ (2022) (Accessed: 12/07/2022)

Figure 2.15 Schematic diagram of the governance structure of the club council.

4. Promote continuously active teams and groups

To reduce the workload of the council and simultaneously enhance the role and ability of the management, a club will usually set up teams to cover five areas according to the specific situation, with each team containing 8~12 members, a leader and a deputy leader, as shown in Figure 2.15 and Table 2.4. They will act as assistants for the council in the management and implementation of activities including convening meetings for members, feeding the thoughts and suggestions of

Table 2.4 Development processes for teams and groups within the club

Functional team	Development direction and suggestions
Cultural team	• Talented members and those interested in it are selected • The culture and art team is responsible for organizing cultural activities or participating in cultural exchanges with other clubs • All members are encouraged to find their own way of providing entertainment instead of tending to the needs of the culture team only • The council can assist the team in electing its leader and deputy leader • At least one cultural team is set up
Sports team	• People with an aptitude for sports are selected • The sports team is responsible for organizing sports events and participating in sports for exchanges and competitions • The council can assist the team in electing its leader and deputy leader • At least one sports team is set up
Health team	• This team is responsible for organizing health and nutrition-related activities, including those promoting regular exercise and health maintenance • The council can assist the team in electing its leader and deputy leader • At least one health team is set up
Volunteer team	Each club needs to develop three types of volunteer teams: 1. A home care volunteer group with at least 10 members to be equipped with health monitoring equipment based on their jobs 2. A health care volunteer group with one person to assist the council in maintaining the health of all members 3. An economic development volunteer group with at least five members to assist the council in increasing the number of members and income of the club Each volunteer team needs to elect its own leader and deputy leader to assist the team leaders in organizing and managing the club's activities
Revenue generating team	• To ensure efficiency, special teams can be established according to the production and operation conditions, such as the chicken breeding group, bean sprouts planting group, and composting group, with those working in these industries being encouraged to join • It is necessary to organize demonstrations and study-oriented visits, and organize activities such as raw material procurement and product sales regularly

members and of the local community back to the council, reminding members to pay principal and interest on the microcredit loans, monitoring the use of loans and leading discussions among members at the meetings.

5. Ensure an accountable file management system

Since it involves economic, cultural and additional diverse activities, the club requires appropriate management strategies in respect to its financial accounts and documents on daily activities. These include but are not limited to:

- Records about weight, blood pressure, blood sugar and health insurance status during each health care activity
- Income, loans, application forms, use plans and loan contracts
- Monthly activity logs and information for home care services
- Details and photos of mutual support in the community
- Personnel management and monthly reports
- Annual budget and all financial statements
- Social donation statistics
- Club by-laws, etc

To ensure risks are kept under control, each club is required to disseminate its monthly report to a community-affiliated seniors association for audit by the end of each month.

6. Ensure progressive development and capacity building

As a new type of community-based self-organization, the club follows its own life development cycle and needs to advance step by step. The first one to three months can be an unstable yet critical period for its survival but usually it will gradually develop steadily in the seven months after its establishment (see Figure 2.16). Considering the differences in its financial capacity, HelpAge Vietnam suggested that local governments provide each club with a start-up capital of approximately USD 2,100 (VND 50 million). HelpAge Vietnam has worked with the Vietnamese Senior Association and customized five capacity building training sessions for the club in light of the above cycle. The training starts with a five-day initial training session on club preparation. Next, a session on capacity building for two to five days is provided at each stage to help the club smoothly proceed to the next stage of development. The club should achieve self-support and sustainable development financially without assistance from other institutions after two years.

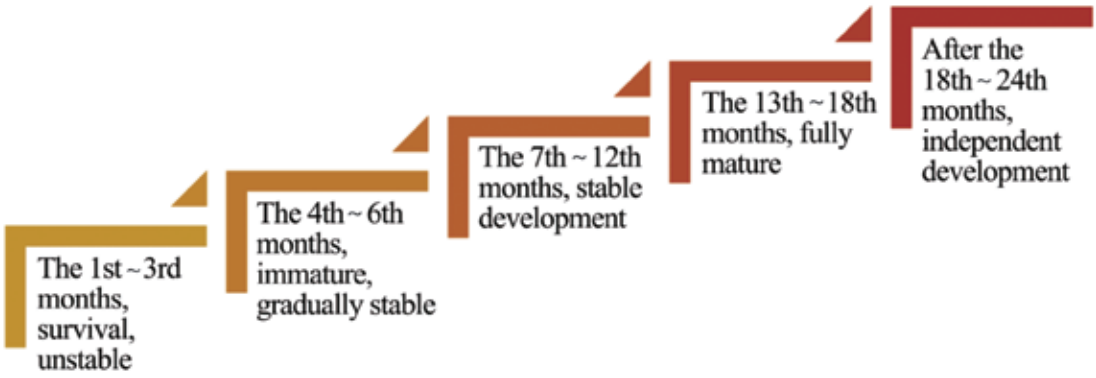


Figure 2.16 The life-cycle of a club for its long-term development

Reference experiences

HelpAge Vietnam launched its pilot project in several regions and has achieved remarkable results through the development of a highly effective model tackling the challenges of gaps between the demand for medical care and home care services for the elderly, and a lack of actual supply due to rapid aging. ISHC can systematically intervene in the quality of life of the elderly in all aspects by means of diverse activities. The clubs attach great importance to, and provides a stage for both disadvantaged and senior women to maintain their continued participation in community activities. Through utilizing community-based public space, HelpAge Vietnam has established multi-level community bonds and improved the resilience of disadvantaged individuals in local communities so as to enhance the physical and mental health of the elderly, as well as individuals who face more challenging socio-economic circumstances.

1. Promote targeted interventions that protect and enhance the livelihoods of elderly members of society and communities

Older persons, especially those that are socially disadvantaged, are often regarded as objects and passive recipients of help from others, as opposed to being subjects capable of improving their own lives in regard to many projects focusing on social development and support. In ISHCs, they can actively participate in self-development, self-empowerment and self-improvement.

2. Understand the importance of an effective, self-sufficient governance structure for self-help clubs in line with the ISHC model

The continual project evaluations conducted by HelpAge Vietnam have proven that via an effective governance structure which includes a council with older and younger members, aims for gender parity and

which represent people of different social statuses is a key reason why ISHCs remain active and continue to grow. Integrating multiple factors such as age, gender and social status enables the ISHC model to serves as a basis for community members to connect and reach a consensus. The operation of the ISHC fund pool helps to not only improve the livelihood of individual members but also to sustain the activities of the organization itself. The structure of multiple incomes and the activities of community resource mobilization make the fund pool more extensible and sustainable so as to give full play to the role of government resources as a lever and the effectiveness of social resources.

3. Promote partnership networks that value cooperation between governments and society

Rapid aging can bring about complex social challenges that cannot be solved by any institution alone. Since the pilot project was launched, HelpAge Vietnam has been working with local social groups such as senior citizens' associations and women's federations. In the large-scale region-based replication, it also attaches great importance to the network of cooperation with local governments. Importance is also attached to the core activity model, to communication with local officials and to cooperation with community management agencies. These efforts combined have laid the foundation for the advocacy of national policies across Vietnam.

4. Integrate mechanisms that enable the monitoring and measurement of progress in self-care models

HelpAge Vietnam has established a monitoring and evaluation system for the ISHC project at each stage. During the implementation of the project, regular data and research are employed to visualize the changes brought about by the club including the increase in its economic income, the emotion and spirit of its members, and the frequency and effectiveness of its daily activities. This helps the project to monitor the progress and take corrective actions as needed. It has also facilitated replication and large-scale implementation of the project.

Odisha, India: Odisha Urban Wage Employment Initiative – Creating Sustainable Livelihood Opportunities

Case background

Poverty has caused prevailing long-term challenges across India where sustained urbanization has widened the gap between rich and poor and aggravated socio-spatial inequalities. Combined with rapid population growth, this has led to a growing unemployment crisis in which the national urban unemployment rate reached 6.1 percent between 2017 and 2018 marking its highest level in the last 45 years.[11] Compounding this, with a large influx of rural migrants in search of better livelihood opportunities, 83 percent of the urban workforce operated in the informal sector,[11] inflating issues of poverty and socio-economic vulnerability. With the onset of the COVID-19 pandemic in 2020, the health crisis soon spiraled out of control sinking India's urban economies downwards, exacerbating spatial inequalities and leading to socio-economic crisis. Through nationwide lockdowns, economic turmoil ensued rendering hundreds of thousands of people jobless with many urban unemployed workers returning to their rural hometowns through distress migration. According to the World Bank, an estimated 40 million internal migrants were impacted. With no social safety nets, India's most vulnerable were pushed further into poverty, bringing the vision of creating an employment and social protection initiative to the forefront of the national government.

Where national flagship programmes have traditionally focused on large cities, this approach has led to the neglect of many smaller municipalities. The 2011 Census identified over 7,500 small and medium sized towns[11] with many falling outside the scope of national urban programmes such as the Smart Cities Mission, and the Atal Mission for Rejuvenation and Urban Transformation. Exacerbated by the increasingly urban-centric COVID-19 pandemic, many of the nation's urban local bodies (ULBs) became

11 Dasgupta. S., et al. URL: https://cprindia.org/wp-content/uploads/2022/03/2_UrbanWage-Final.pdf (03/07/2022).

overburdened due to high infrastructure and service delivery demands brought about by urbanization, and as such were not afforded the sufficient financial and human resources to carry out basic urban functions. [11] The vision of an urban programme to counteract these issues was long-debated, leveraging the skills of urban dwellers, in particular the urban informal workforce, in return for employment to mutually benefit citizens and municipalities. Most importantly, such a programme would help to reduce unemployment, unblock public investments, boost local economies, enhance the quality of urban infrastructure and services, restore the urban commons, and build the capacity of unskilled and semi-skilled workers therefore lifting many out of extreme poverty.

Implementation process

1. Supporting livelihoods through employment creation

In line with national ambitions, the Government of Odisha (GoO) marked itself as one of the nations' early adopters of a comprehensive urban wage protection scheme in response to the COVID-19 pandemic, announcing the Odisha Urban Wage Employment Initiative (OUWEI) with immediate effect on 18 April 2020. Initially rolled-out as a six-month project to September 2020 by Odisha's Housing and Urban Development Department (H&UDD), GoO later scaled-up the scheme as a long-term, state-wide initiative called the Mukhyamantri Karma Tatapara Abhiyan (MUKTA) from 1 February 2021 following mid-term evaluations. After widening the scope of the OUWEI programme, focus was broadened to not only ensure poverty alleviation and livelihood security for informal workers, women, people with disabilities, and other vulnerable groups through the provision of labour-based employment, but to also strengthen and build partnerships with community institutions, develop community assets, increase environmental quality and local ecological resilience where Odisha is a monsoon-prone state, and strengthen the sustainability of public welfare schemes. With a myriad of objectives, the ambitions to tackle converging areas of urban development has made the initiative truly unique.

A strong political will and agile policy-making was crucial in maintaining the focus of OUWEI on the urban poor, where a clear vision to transform the lives of the most vulnerable was key in helping them implement the scheme at pace. The ambitions of OUWEI were aligned to the vision and mandate of the Odisha state in promoting a human-centred development agenda – Vision 5T, complementing and building synergies with existing programmes including the JAGA Mission – a slum upgrading initiative across Odisha; the Drink from Tap Mission – a sustainable urban water supply initiative; the Urban Infrastructure Development Scheme for Small and Medium Sized Towns; the Atal Mission for Rejuvenation and Urban Transformation; as well as the Development Management Fund, amongst others. The complementarity between programmes enabled Odisha to strengthen national schemes through the delivery of parallel state projects, promoting sustainable urbanization at both national and local levels. OUWEI leveraged hi-tech resources available from pre-existing H&UDD schemes such as high-resolution spatial databases and drone imagery from private entities, combining them for use with community organizations.

The implementation and oversight of activities was supported by Mission Shakti Groups (MSGs) – self-help groups dedicated to empowering marginalized women – and the Slum Dwellers Associations (SDAs). Workers were selected based on their skills and geographical location (preferably to be employed in their own communities) and were required to contact the relevant MSGs from which supervisory partners would then disseminate lists of job seekers to government representatives within individual ULBs. ULBs would then prepare muster rolls to help community-based organizations including self-help groups (SHGs) execute projects. Where labour-based projects were imperative, 20 percent of work was carried out by local skilled workers, and 80 percent by the remainder of the workforce (see Figure 2.17). By integrating a small proportion of skilled workers, this enabled unskilled workers to up-skill, acquiring knowledge and building their capacity. To ensure security for workers, the scheme set up a registration adding a workers database, with each worker and wage seeker provided a unique identification number saved in the system (MUKTA-Soft). Accordingly, all personal details were added for beneficiaries including banking details, verified and validated by functionaries in ULBs.

Source: Odisha Housing and Urban Development Department

Figure 2.17 Individuals gained formalized employment via labour-intensive public works

2. Public works activities for resilient infrastructure development

Through initiating labour-intensive urban infrastructure projects and building upon the H&UDD's JAGA Mission (the largest global slum upgrading programme), OUWEI worked to increase the resilience and sustainability of urban communities, and progress the movement of 'slum free cities' through improved infrastructure design and delivery. Development elements were identified across different ULB neighbourhoods where poorer urban workers were offered employment to support the development of public assets and maintenance of local communities. To ensure developments were socially equitable, activities were prioritized in line with community needs through a contextually sensitive design approach. Initially, focus was placed on beautification, sanitation, solid waste management and health-related information, education and communications activities; however, as a monsoon-prone state, the integration of sustainable drainage systems were also added as a priority. Street grid filters were added to drainage outfall points, drains were de-silted pre-monsoon, and percolation tanks and other water storage units were deployed across vacant government land to bolster flood resilience. Water bodies, open green spaces, public parks and playgrounds were also established to increase the permeability of urban spaces. This combined infrastructure helped to increase green coverage, conserve and harvest rainwater, and minimize stormwater runoff creating a safer and more resilient community.

Where the majority of community life in Odisha's informal settlements takes place in community spaces, local community centres (*parichayas*) were developed to help revitalize neighbourhoods and stimulate more cohesive communities, increasing the quality of life for local residents. Built by local masons, these centres were set up in every informal settlement; a total of 761

parichayas across 114 ULBs within months,[12] each of which ensured the use of local materials, easy-to-build designs and the inclusion of local community members in the development process (see Figure 2.18). Following their successful installation, similar centres – Mission Shakti Gruhas – were developed in formal areas for MSGs, building 1 per 10,000 people. These centres offered valuable space for both working and micro-activities such as meetings, congregations and economic activities. Local artists and SHGs were also called upon to produce wall paintings and murals, beautifying urban landscapes. The enhancements made to local communities not only increased the quality of the living environment for local people, but were also instrumental in generating more inclusive, engaged and healthy communities.

The upgrading of Odisha's municipal infrastructure has improved access to urban services and increased the quality of the environment for the most vulnerable and under-served members of the population. Through the creation of more resilient community assets in low-income neighbourhoods, livelihood opportunities have been presented to the poorest urban dwellers including the unemployed, migrant labourers and informal sector workers, enhancing socio-economic resilience and prosperity. Local communities have become empowered through formalized employment creation,

Source: Odisha Housing and Urban Development Department

Figure 2.18 Newly constructed parichaya centres – people-centric, climate-resilient, modular and cost-effective community centres

12 Odisha Housing and Urban Development Department.

urban upgrading and spatially equitable development. OUWEI has driven social sustainability within local municipalities providing wage employment with over 700,000 urban poor and migrant workers directly benefitting from USD 12 million in paid wages. MSGs have been able to focus on female equality, integrating invaluable climate-resilient community assets and infrastructure (22,500 projects worth USD 26 million), and cementing partnerships (including 5,368 women's groups and 438 SDAs) for human-centric, community-led development.[13]

3. Developing sustainable project models: building partnerships with local communities and strengthening the fourth tier of governance

The creation of partnerships with local communities was essential in rolling-out development at large scales at speed in Odisha. Odisha's decentralized model of cooperation in which federalism was built-in, was integral to all programmes and schemes. This model highlighted the transformative potential of collaboration between citizens, municipalities and the state where citizens were equally implementing partners and custodians of project development. Where community participation is mandatory in Odisha, SDAs, MSGs and Jala Sathi, among other groups, are now active partners with ULBs – acting as a fourth tier of governance (local leadership was built with over 5,700 women SHGs and 600 SDAs) (see Table 2.5). With direct involvement in solid waste management, 11,660 SHGs are now involved in managing micro-composting centres and material recovery facilities creating employment (especially for women) and generating total annual wages of approximately GBP 14 million.[13] The close involvement of such groups has built capacity and instilled a greater sense of community ownership, strengthened institutions and increased economic empowerment.

Table 2.5 Framework of the fourth tier of governance

Fourth tier of governance	Decision making: *Members of the ward level committee*
	Execution: *Identification and execution of projects*
	Community Mobilization: *Identification of workers*
	Supervision: *Overseeing daily activities on the ground*

Source: Dasgupta. S., et al. URL: https://cprindia.org/wp-content/uploads/2022/03/2_UrbanWage-Final.pdf (03/07/2022).

Reference experiences

1. Prioritize the most marginalized people and build symbiotic community partnerships for equitable socio-economic development

Placing the development emphasis on the most disadvantaged urban dwellers and understanding their challenges is key to fostering more inclusive, equitable and sustainable urbanization. To advance the 2030 Agenda, cities and local governments must focus on eliminating systemic socio-economic inequalities and exclusion, ensuring equal access to services and livelihood opportunities for all citizens, leaving no one behind. Where Odisha has successfully established a fourth tier of governance, OUWEI has highlighted the value of building integrated community partnerships, incentivizing the participation of local people and eliminating external contractors throughout the entire project lifecycle of planning, implementation and monitoring. Such a grass-roots level approach builds the capacities of those involved, empowering local people and creating more meaningful change on the ground. Building upon the foundations of pre-existing welfare schemes, OUWEI has symbolized a revolutionary model of social development, scaled-up with budgetary allocations as a state-wide scheme and now being replicated by other states and at the national level.[11] OUWEI has also attempted to increase

13 World Resources Institute. URL: https://prizeforcities.org/project/urban-wage-employment-initiative-mukta (Accessed: 15/09/2022).

gender parity by placing women's self-help groups at the centre of the initiative and in decision-making and implementation roles, incorporating a gender perspective into all data and coordination mechanisms, and providing a safe and secure work environment for female workers.

2. Build the capacity of local urban communities to enhance their resilience

Through OUWEI, the knowledge transfer process from skilled to unskilled workers plays a pivotal role in enhancing employment potential and therefore livelihood opportunities, and in ensuring the high-quality execution of projects. Assembling a core team of experts who have the ability to train and upskill non-experts should be understood as a vital component in the capacity building process to boost the adaptive capacity and resilience of both local communities in their entirety and for individuals. This process has strengthened Odisha's ULBs offering organized, formal wage employment to informal workers. However, it should be noted that the success of upskilling and knowledge dissemination relied heavily on the technical capacity of implementing partners whereby weak support limited the ability of this process.

3. Promote innovate financing mechanisms to enhance spatially equitable infrastructure and services delivery

Where OUWEI focused on the enhancement and expansion of urban infrastructure and services across different ULBs, innovative funding mechanisms and solid investments were required to ensure such projects were delivered affordably and inclusively. Spatially contextual urban analysis and the assurance of wider financial planning was key to prevent certain communities from being left behind, taking into consideration the wider social costs and benefits and gap analysis. As a highly replicable initiative, local governments should understand the value in specifying the outcomes of projects to the context of the local community, promoting multi-level coordination and innovative financing mechanisms to maximize value and impact.

Buenos Aires, Argentina: Transforming Barrio Mugica – Reintegrating a Socially Excluded Community

Case background

As one of the most prosperous cities in Latin America with one of the highest per capita incomes in the region, Buenos Aires is also home to 250,000 residents living across 4,000 informal settlements. With a long history of unsuccessful attempts to eliminate urban informality through top-down governance, the city has sought to tackle this growing problem by establishing the Social and Urban Integration Secretariat in 2015. As Argentina's most symbolic informal settlement, Barrio Padre Carlos Mugica – formerly known as Villa 31 – was identified for comprehensive redevelopment through the Barrio Mugica Integration Project, seeking to reintegrate the community into the rest of the city. Dating back to the 1930's, the neighbourhood experienced an influx of European immigrants seeking work in Buenos Aires's prosperous port area and the population continued to grow exponentially for many decades. As of 2016–17, the community accommodated 40,203 inhabitants (of whom 35 percent were under 15 years old and 54 percent under 24 years old. 51 percent were Argentinian; 25 percent Paraguayan; 13 percent Bolivian; 10 percent Peruvian; and 1 percent others). With a young and diverse population, this further highlighted the importance of reinvigorating such a neglected demographic to secure inhabitants a more prosperous urban community.[14]

Strategically situated just a few blocks from Buenos Aires's financial centre and surrounded by the wealthy neighbourhoods of Retiro, Recoleta and Puerto Madero, as shown in Figure 2.19, Barrio Mugica has long remained socially and economically excluded. Exacerbating these issues, physical constraints such as three railway tracks and the Illia highway sever its wider connections to the city resulting in an isolated neighbourhood, void of opportunities. Poor living conditions have severely hampered the quality of life for

14 Barrio Mugica Integration Project (Material provided by the Government of the City of Buenos Aires).

Source: Barrio Mugica Integration Project (Material provided by the Government of the City of Buenos Aires)

Figure 2.19 The location of Barrio Mugica

local inhabitants. The street conditions and inadequate waste management systems have heightened the risk of disease, whilst openly exposed, informal electric grids and informal power lines have made for an extremely dangerous living environment. All of the local electricity connections were informal, with 79 percent produced via extensions from neighbouring houses. Recurring floods were also a major threat due to the lack of drainage and transit points, with heavy rainfall events frequently preventing children from accessing school and making commuting challenging for local workers.

Launched in 2016, the transformation aimed to ensure the residents of Barrio Mugica were afforded the same rights and opportunities as inhabitants in the rest of the city. Key works have included the enhancement of living conditions whereby infrastructural upgrades have aimed to improve safety and integrate basic services (e.g. public street lighting, pavements, proper drainage, sewerage, clean drinking water facilities and improved electrical connections), as well as increased access to public services such as formalized employment opportunities, education and healthcare. In addition, the renovation of public spaces, housing delivery and upgrading, and the construction of schools and health centres have also been integral in enhancing local development. The project has extended far beyond that of simple construction with a means of providing equal rights, conditions and opportunities, but has sought to fully reintegrate the underlying social, economic and urban fabric of the neighbourhood back into the city, creating living conditions that enhance socio-economic development.

Implementation process

1. Initiating a participatory process by working with the local community

Community participation was an essential pillar of Barrio Mugica's urban integration process, an effective way to enable action on the ground and an opportunity to enrich urban policy and promote enhanced appropriation and ownership. In line with *City Law* 6129 (sanctioned in December 2018), the project was carried out within Buenos Aires's legal framework, whereby the bill to set the standards for the integration process was devised directly with local inhabitants complimenting Law 3343 previously deployed by the city. The law set

out the guidelines and conditions for the conduction and implementation of the Barrio Mugica integration project, and allowed for the creation of the Participatory Management Council who served as an advisory body to assist with the management. Comprised of 25 members, the council meets at least once a month at different venues in the community, providing various functions such as encouraging participation of local residents, issuing recommendations and monitoring compliance with city laws.

Barrio Mugica has its own political system and is divided into 10 zones. As a complex network, monthly working groups are now held to ensure the participation of citizens from each area through which existing challenges, urbanization progress and other matters are discussed. Thematic roundtables also take place whereby topics are proposed to advance discussion without sectoral segmentation. Effective communities have therefore been integral and access to information (on urbanization) has been seen as a pillar of citizen participation. However, there have been obstacles, notably the amount of content to disseminate and the need for segmented channels to the local population. A dedicated team was subsequently deployed locally to access all areas of city government, organize messages and distribute appropriate communication to the population to avoid over-information.

2. Integrating and upgrading essential urban infrastructure

To ensure long-term sustainability regarding energy usage, work was conducted with the community to promote the rational use of electricity and the payment of service providers. In an unprecedented shift, this connected the formal services of the city's water and electricity providers to Barrio Mugica, ensuring the same standards and modes of maintenance as the rest of the city(see Figure 2.20). Elements such as the installation of pre-paid meters allowing for phased payments have marked a major step for the neighbourhood, increasing the affordability of energy. In addition, where mobility was deemed a core axis to unlock the neighbourhood to the surrounding areas of Buenos Aires, transversal streets and bus entrances were opened to better connect the area whilst the integration of cycling and soft transit routes offered new sustainable and safe mobility options.

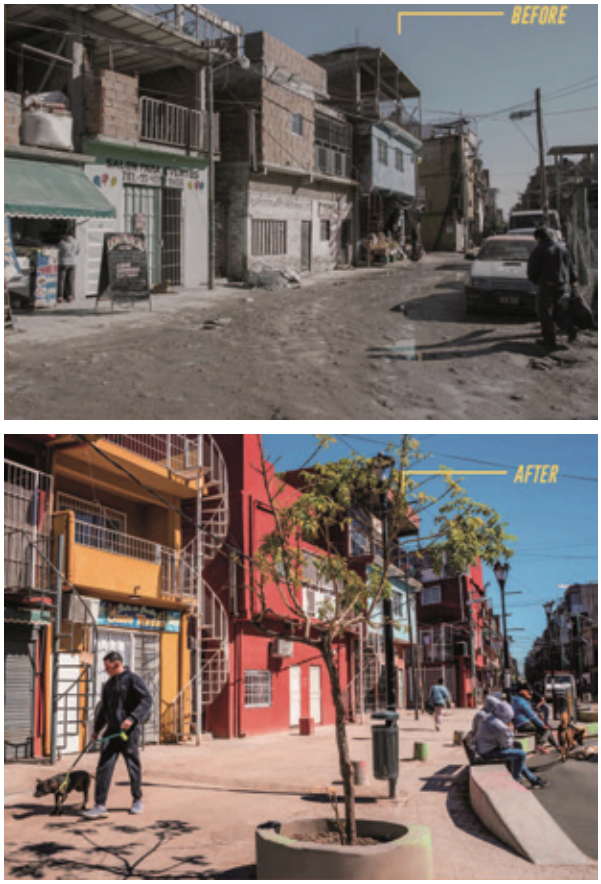
Source: Government of the City of Buenos Aires. URL: https://www-buenosaires-gob-ar.translate.goog/jefaturadegabinete/integracion/obras/infraestructura/red-de-agua-potable-cloacal-y-pluvial?_x_tr_sl=es&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc (Accessed: 17/08/2022)

Figure 2.20 Construction of a pipe supplying safe drinking water marked the process of integrating formalized service delivery into the community

Road links were made into Retiro and works were undertaken to reduce congestion and improve flow/circulation in Perette Street and Gendarmería Nacional Avenue, among others. The council also named public spaces and streets, providing people with official addresses. Through a participatory process, over 4,700 residents voted, and names were selected for each street and public space, resulting in over 90 formal names and 300 signs being established (representing Latin America's diversity/nature/cuisine/historical milestones in the neighbourhood). These actions have helped in the process of regularizing the ownership of land, with official nomenclature meaning every resident can now prove they have an official address (which has been key in helping to secure employment).

As a primary objective to ensure every resident was served a safe, accessible and adequate home, the Housing Improvement Programme was launched. Working through differentiated approaches according to the needs of each block, the programme has focused on both interior and exterior upgrading (e.g. improving stairs for safety, openings, waterproofing and durability, as well as room distribution and facilities integration such as those concerned with sanitation and hygiene). With around 12,000 homes subject to inadequate living conditions (e.g. poor luminosity, overcrowding and a lack of ventilation/basic services), the programme has worked with local families in renovation projects where

the recycling and reuse of buildings/materials was seen as a priority. A self-management approach was encouraged with public-sector architects, engineers and social workers working side-by-side with local residents, identifying required materials and guiding through technical advice (see Figure 2.21).



Source: Government of the City of Buenos Aires – Secretariat of Social and Urban Integration

Figure 2.21 Housing, before and after renovation

In some instances, housing was unable to be upgraded – mostly under the Illia highway where building structures were precarious, lacked natural light and ventilation, and/or were absent of formal property rights which prevented their legal regularization under urban planning codes (approximately 30 ~ 40 percent of tenants were informal).[15] Here, the unclear division of land and the complicated layout of streets/urban spaces also made construction access difficult for the machinery required for infrastructure work. Some families had to move (1 in 10 families) and were provided with new housing made from high-tech sustainable material. Steel-frame construction techniques were used in the new housing to improve the insulation of noise and temperature and thus promote energy saving, and renewable energy such as solar panels and solar hot-water tanks were fitted to advance the shift towards energy sustainable housing.

Solid waste management upgrades have seen over 5,000 homes separate their waste into three components: ① dry material; ② organic material; and ③ household waste. Barrio Mugica has become the first neighbourhood in Buenos Aires to implement a waste separation programme through the All Recycling Programme (*A Todo Reciclaj*). The city council works with the community to collect recyclable waste and reincorporate it back into the market providing social and economic value for the community. To date, 185 tons of recyclable waste and 115 tons of organic waste has been recovered.[15]

Work to enhance the security of tenure and on the regularization of property rights was also undertaken in new and existing homes. Moving forward, the aim is for all families within the community to own their own homes with property titles, paying for them with 30-year mortgages through increasing the ability of each family to pay year-by-year and providing tools for economic and professional development.

Other measures such as upgrading public squares and football pitches were instrumental in driving change, understanding that public spaces are indispensable elements for habitable co-living and community life. The integration of 27 new public spaces led to a 365 percent increase in public space availability per resident (see Figures 2.22 and 2.23).[16] Under the Illia highway, there is now a 18,000 m^2 public space

15 Metropolis Urban Sustainability Exchange. URL: https://use.metropolis.org/case-studies/social-and-urban-integration-in-barrio-mugica (Accessed: 15/07/2022).

16 Government of the City of Buenos Aires – Secretariat of Social and Urban Integration.

Source: Government of the City of Buenos Aires – Secretariat of Social and Urban Integration

Figure 2.22 Before and after the renovation of a small public space

Source: Government of the City of Buenos Aires. URL: https://www.buenosaires.gob.ar/jefaturadegabinete/integracion/obras/espacios-publicos/cancha-9 (Accessed: 23/08/2022)

Figure 2.23 Barrio Mugica's Court 9 has been transformed into a synthetic grass field used for sports competitions

acting as a communal meeting point. The unlocking of new space has been invaluable in enabling the establishment of key facilities including a health centre.

3. Ensuring equitable development through public service access and economic integration

Because only 30 percent of adults in Barrio Mugica have completed secondary education and only 10

percent possess an undergraduate degree, residents are severely restricted in gaining formal employment and developing professional careers. The city has therefore aimed to ensure all children and teenagers are afforded educational opportunities and can develop a better future, with each secured a place in school. As there were no public schools within Barrio Mugica, a renovation and upgrading project of the closest school was initiated transforming it into the Mugica Educational Hub. This is now the largest public school in the city with over 1,800 school places.

A new nursery school and professional training centre now operate in what was previously one of the community's most isolated areas. The training centre helps guide adolescents in their development via tutorials, lectures and extra-curricular activities, and support spaces are offered where adults can acquire knowledge and develop skills to help gain employment. Going beyond just formal schooling, opportunities here are diverse ranging from programming courses to workshops taught at the House of Culture.

Several schools, including the Walsh Hub as shown in Figure 2.24, have now been built in the area, as well as the new Ministry of Education and Innovation headquarters. Located next to new housing, the ministry has helped connect public education to local inhabitants. Over 2,200 employees work there on a daily basis, planning the city's education policy for the entire city whilst bringing socio-economic benefits to Barrio Mugica.

Source: Government of the City of Buenos Aires – Secretariat of Social and Urban Integration

Figure 2.24 Walsh Hub, the first public school in Barrio Mugica

Health has long presented a major obstacle in the community where the risk of contracting diseases and injury was increased through deficient ventilation and poor physical infrastructure. The neighbourhood had been cut off from the formal healthcare system, leaving residents at far greater risk. The reintegration programme has sought to bridge the healthcare gap, strengthening access to high-quality, formalized healthcare whilst promoting healthier living habits. Three accessible health centres now provide modern facilities accommodating doctors and specialized services including dentists, nutritionists, gynecologists, psychologists and general medical practitioners, amongst others. Digital medical records have been integrated to ensure more efficient medical care enabling the tracking of medical history for local citizens. To expediate this process, communication was conducted directly with local families to help them register. Service provision from multiple health experts (covering issues such as nutrition, physical activity, smoking, and sexual and reproductive health) has been instrumental in promoting healthier lifestyles within the community. In line with the Infrastructure Plan, emergency routes have been linked into Barrio Mugica allowing emergency services to enter swiftly. A 'SAME' base was also created (the city's public emergency medical system) to respond to medical emergencies.

Decades of unplanned urban expansion have resulted in the development of a large informal economy. With over 9,000 merchants, this has amalgamated in a significant amount of commercial activity giving rise to localized consumption systems. With 19,600 active economic residents in the community, 50 percent receive an informal salary (double the number of Buenos Aires). Under a comprehensive and participatory integration plan, all actors were accounted for (e.g. entrepreneurs, traders, merchants, unemployed) in regard to policy. Offering a range of services from training, entrepreneurial support, formal employment and financial inclusion support, and a labour integration programme, the Centre for Entrepreneurial and Labour Development (CeDEL) serves as a prosperity nexus for local residents. In just two and a half years, over

60 percent of the economically active population have approached CeDEL. Key measures such as bolstering Barrio Mugica's economic circuits have been integral to empowering local workers. The Latin Markets, Barrio Mugica's open-air market, is now formalized with 260 registered stand-owners active with whom the city works to improve sales and manage their finances. A major regeneration of the community's commercial street subject to over 100 businesses over an open-air corridor has also been undertaken. Here, infrastructural and housing improvements have been made and training courses have been provided to improve business identities, increase sales and revenue, and formalize economic activities. Workers now trade across the wider vicinity, offering products and services to additional parts of the city. Market-leading companies have also been sensitively integrated into Barrio Mugica offering new employment, and the relocation of the Ministry of Education and Innovation into the community has further stimulated economic opportunities. More than 200 employees have become daily customers for local shops/entrepreneurs enhancing Barrio Mugica's visibility across wider Buenos Aires.

Reference experiences

1. Understand formalization as a key process in the enablement of spatially equitable and inclusive urban development

The process of formalization has been pivotal in transforming Barrio Mugica in regard to its service delivery, infrastructural quality and land tenure security. Where the integration project exemplifies a highly scalable approach to combating issues of urban exclusion, 'formalization' and 'legalization' should be viewed as integral processes for the successful regeneration and empowerment of such informal settlements. These processes can be seen to attract inward investment, advancing economic growth in informal areas and therefore not only helping to alleviate conditions of poverty but also promoting their integration into the wider urban fabric reducing issues of delineation between the 'formal' and 'informal'. Formalization thus not only improves the functionality of the settlements but also enhances the quality of life for local people. The delivery of formal services such as electricity providers as well as the establishment of official nomenclature are marked examples of this.

2. Understand infrastructural quality as a core transformative component in enhancing the quality of life for inhabitants in urban informal settlements

The lack of access to basic services combined with the poor infrastructural quality of Barrio Mugica severely restricted the ability of local residents to live their everyday lives. Seemingly menial issues such as muddy streets in times of flooding hampered access to schooling and employment, leading to knock-on educational development and socio-economic implications in an area where the majority survived day-by-day through informal wages. The delivery of new high-quality infrastructure across housing, waste management, water and electricity, and mobility dimensions made a profound difference in the ability of residents to carry out their daily lives creating a safer, and more socially and economically prosperous community. With rapid urbanization and the growth of urban informality widespread globally, cities and local governments must prioritize the delivery of quality infrastructure for the most marginalized urban inhabitants in these areas, reducing spatial disparities and stimulating new opportunities to balance out the urban playing field.

3. Encourage the delivery of integrated approaches to urban informal upgrading

As a holistic approach to urban development, Barrio Mugica's integration plan sought to tackle a multitude of challenges on the ground. With bold ambitions, the city's approach has highlighted the value in adopting integrated approaches to urban regeneration that consider the interlinkages between housing delivery, access to basic and public services, as well as social and economic integration. Where these factors have been approached together in Barrio Mugica, a more powerful impact has been realized in the local community reinforcing the necessity to acknowledge the potential of comprehensive development when performed sensitively in reinvigorating neglected urban communities.

Policy Suggestions

Position People as the Agents of Change in Urban Society

When empowered and provided with the necessary resources and structural and institutional mechanisms, the capacity and ability of local people to instigate positive change on the local community level is very evident. Formulating urban policy that positions local people as participants and change-makers in urban society is of great importance, helping to reinvigorate and innovate local development, particularly in communities facing disadvantage and marginalization. In the case of Aiyouxi in Chengdu, China urban policy lent full support to social groups and stimulated more effective social dynamics whilst in Odisha, India the empowerment of communities and individuals allowed them to actively contribute to community matters, facilitating more authentic development that responded directly to the needs of community members. Similarly, in Barrio Mugica, Buenos Aires a participatory approach to planning enabled dialogue with local residents which helped build a sense of local ownership and appropriation in the urban development process. It is therefore essential to recognize that diverse social groups including residents and grass-roots communities are all participants in local development, and where social orientated policy is backed by institutional frameworks, this can help cities renew social vitality and create more equitable and inclusive communities.

Implement Mechanisms to Enable Participatory, Self-organized Community Governance

Participation of local people in social organization and management is key to building more cohesive and resilient communities, following local governance that is inclusive, and socially and community orientated. As highlighted in Odisha, India the role of decentralized 'fourth-tier' governance was instrumental in empowering individuals and communities down to the neighbourhood level, placing power back into the hands of the most excluded members of society. Such an approach reiterates the value of self-governance – a sustainable approach to enhance social development in the city. Furthermore, the delegation of power to lower levels of government in Hanoi has helped unlock a multi-centred, community governance structure in which mutual assistance and partnership empower multiple social groups, allowing them to achieve goals that would have been unachievable if approached in silo. Participation requires a willing local community and social compatibility. In the case of public rental housing in Beijing, the local community was designed as an integral part of the city in which pioneering design in social housing development ensured physical, social and institutional interconnections between the local urban community and the wider city.

Enhance and Expand Community-centred Urban Infrastructure to Create Inclusive Cities

Urban infrastructure has a tangible impact on the daily lives of those who inhabit the city. Accelerating the roll-out of inclusive quality infrastructure from basic services to housing delivery is vital to ensuring decent lives for urban inhabitants and to initiate trajectories of inclusion. The design of people-centred infrastructure is equally important to stimulate cohesive and inclusive communities whereby social input incorporated into urban planning and design processes can address issues of exclusion and isolation. As highlighted in Baiwan's social housing development in Beijing, integrated housing design which incorporates high-quality public realm creation, and linkages and networks between individual buildings and the city more broadly, has unlocked vast opportunities for those who reside there, enabling them to secure affordable housing tenure whilst building social connections, accessing urban basic services and increasing proximity to employment opportunities. Similarly, the upgrading and integration of community infrastructure in Barrio Mugica, Buenos Aires and Odisha, India has culminated in higher-quality community environments which increase the resilience, sustainability and prosperity of those who live there through inclusive and equity-centred design. Accelerating the expansion and development of core infrastructure for marginalized

communities is therefore paramount to accelerating social and spatial equity in the city.

Promote Scalable Policy with a Focus on Vulnerable Groups

With growing urban inequalities, focusing policy and development on vulnerable groups is increasingly important to create fairer, balanced and more equitable cities and communities. Supporting scalable local growth policies with an emphasis on marginalized and disadvantaged individuals can promote gender equality, local integration, healthy aging and help cities adapt to new demographic changes. In this regard, increasing the quality of the city for vulnerable groups bolsters community resilience in which social bonds are strengthened, health is increased and the capacity of local people to cope with challenges and unlock opportunities is enhanced. Focused primarily on the elderly, ISHC's in Hanoi have exemplified the importance of promoting health longevity in societies experiencing profound demographic transitions, bridging social gaps and better integrating often excluded members of society back into the community. Chengdu's Aiyouxi in China also reiterated the importance of extending community development work to ensure it reaches and impacts all members of local communities and leaves no one behind. OUWEI again reinforced the critical value of targeted government policy to transform the lives of the poorest and marginalized.

Chapter 3

Economy

Introduction[1]

As hubs of innovation, trade and commerce, cities are the driving forces of local, regional and national economies, perpetuating economic growth and unlocking opportunities for economic prosperity. Where the development of urban economies is closely intertwined with the SDGs, the process of localizing the Goals carries considerable weight as a framework to ensure that urban economic models develop in a manner that facilitates long-term prosperity for people and the planet. SDG localization can be seen as an essential precondition to advance effective economic development models. It is now vital that cities promote truly innovative and transformative economic development strategies, acknowledging the complexities of local urban conditions to allow local economies to grow in harmony with the unique contexts of individual cities and territories, and thus facilitate economic development that is inclusive and sustainable.

In economic geography, traditional theories emphasize the importance of geographical location and associated spatial factors in dictating the success of economic activity. The neo-regionalism of economic geography in the recent era focuses on local embeddedness, local formal and informal institutions, social and cultural factors, and in particular the collaborative relationships between local enterprises, universities and knowledge-based institutions, and R&D institutions. In evolutionary economic geography, the long-term competitiveness of a specific region is based on its knowledge, management and capabilities as shaped by specific geographic conditions. In addition to the rational locational decisions of enterprises and consumers, the spatial agglomeration of economic activities is also a result of the localized accumulation of knowledge. In this regard, planning a city's future development trajectory can be determined by understanding its basic conditions, development history and local evolutionary processes.

Where it is increasingly apparent considering the myriad of challenges that cities face today, it is integral that urban economic development models embed sustainability principles to ensure their long-term success. In *Economics, Natural-Resource Scarcity and Development*, sustainable development is defined as the maximization of net economic benefits that enables the quality of natural resources and the services they provide.[2] It is widely acknowledged that sustainable development is that which will not compromise the future due to the consumption of today.[3] In line with these notions, this chapter proposes that economic development in the 21st century will no longer rely on the excessive consumption of natural resources, and recognized that the cost proportion of knowledge must increase to promote sustainable economic development in urban areas.

This chapter will explore a number of innovative and pioneering approaches undertaken by cities to promote sustainable urban economic development, each faced with their own unique geographic, socio-economic and socio-political contexts. The Pinhão Valley Innovation Ecosystem in Brazil highlights the impact of entrepreneurship and creative economy development in the revitalization and modernization of Curitiba's economy. Secondly, the transformation of the Monterrey Institute of Technology and Higher Education's Querétaro campus, Mexico showcases the value of connecting university facilities with surrounding industrial zones and communities as a strategy to facilitate knowledge exchange and incentivize innovative R&D activities, forging partnerships between knowledge-based institutions, industries and wider urban society. The case of Heidelberg, Germany is also presented

1 Many thanks to Zeng Gang (East China Normal University); Zhu Yiwen (East China Normal University); Zou Lin (Ruprecht-Karls-Universität Heidelberg); Zhang Xumin (East China Normal University); and Chen Haiyun (Tongji University) for their support in the development of this chapter.

2 Barbier, E. B. Economics, Natural-Resource Scarcity and Development: Conventional and Alternative Views 1989.

3 Pearce, D. "Do we Understand Sustainable Development?" Building Research and Information: The International Journal of Research, Development and Demonstration 33, No. 5 (2005).

in which industrial diversification and upgrading have transformed the city into a diverse economic hub with thriving creative and science-based activity. And finally, the case of Shanghai, China is highlighted in which focused interventions have helped to preserve and revitalize the city's time-honoured old brands, which have long served as key businesses, playing a key role in the success of the city's economic development.

Case Studies

Curitiba, Brazil: The Pinhão Valley Innovation Ecosystem – Driving a Creative Economy

Case background

Prior to 1940, the capital of Brazil's southern state of Paraná, Curitiba was a small inland city relying on the wood, coffee and animal husbandry trade. Situated within 100 km of two key ports, Paranaguá and Antonina, it also houses the international airport Afonso Pena in its metropolitan region, and lies in the Southern Common Market which includes Argentina, Brazil, Paraguay and Uruguay, making it a strategic location for the promotion of new businesses.[4]

In the 1970s, Curitiba advanced into an 'industrial city' whereby the emergence of thriving industrial activities attracted an influx of businesses and new residents, contributing to a spurt in local economic growth. Subsequently, Curitiba promoted a vision of smart growth and adopted several smart city concepts driving urban economic development and increasing urban quality through which it positioned itself as a 'reference city' for urban planning and development globally. However, like other rapidly growing cities around the world, Curitiba faces new challenges brought about by the all too rapid economic development and urban expansion, seeking innovative solutions to ensure a sustainable approach to urban development. As a modern and sustainable city, Curitiba leverages innovation and frontier technology to provide solutions to urban challenges with extensive activity across the mobility and transport, security, infrastructure, health, education and energy sectors. These sectors are thus key in attracting business investment and promoting a creative economy, technological innovation and sustainable urban development. Today, the city is implementing an urban renewal strategy that is supported by sustainability, humanism, enterprise, innovation and entrepreneurship, releasing new legislation to support urban innovation and smart city development.

In 2017, the Curitiba City Hall and the Agência Curitiba jointly launched Vale do Pinhão (Pinhão valley) (Decree No. 857/17), a public policy with a global strategy from which the city promotes smart growth in line with the SDGs, created to boost Curitiba's technological development and connect stakeholders, driving economic growth through the creative economy. With over USD 2.8 million in funding, the programme serves as Curitiba's innovation ecosystem, strengthening ecosystem players and engaging a diverse set of stakeholders to advance innovation in the city. The programme aims to enable ecosystem players to appropriately scale interventions via effective R&D in one of the most tech-savvy cities in the region, stimulating the development of Curitiba's entire technology ecosystem. Curitiba has shifted its development focus towards creating an innovative and entrepreneurial culture engaging children, youth, entrepreneurs, adults and senior members of society to adopt new technologies and prepare for the challenges of the future. Accordingly, it has promoted collaboration across the city network, mobilizing the City Hall, start-ups, universities, economic development entities, investment funds, incubators, accelerators,

4 Curitiba City Hall. URL: http://investcuritiba.com.br/wp-content/uploads/2021/05/CuritibaInData_InvestCuritiba_English.pdf (2021) (Accessed: 11/07/2022).

innovations hubs and entrepreneurs via engagement and cooperation.

Anchored in Curitiba's Rebouças neighbourhood, Pinhão Valley has been a pioneering movement, flooding the city with public and private shares, technology, smart city functionality, start-ups and entrepreneurship, driving a creative economy. Gathering momentum since its establishment, it has had positive reverberations across local business generation, job creation and revenue generation. The city now sits in first place in the Brazilian ranking for productivity and efficiency in the technology sector, whilst the current market for start-ups places Curitiba in first place regarding the number of enterprises in Paraná state – 422 companies as mapped by Brazilian Micro and Small Business Support Service (SEBRAE) in 2020.[4] The city is also the leader in the creation of information technology jobs in Paraná state,[5] and was included among the top 13 cities globally for its favourability to fintech. Curitiba was ranked fourth place in Brazil for the quantity and quality of start-ups according to mapping from StartupBlink. It has since been primed as a hub city for technological advancement and creative activity with significant focus on promoting start-ups and entrepreneurship.

Implementation process

As a synergistic creation, the Pinhão Valley programme was inspired by Curitiba's Mayor, Rafael Greca, in 2017 and has been operating as a movement to recover innovative traditions in the city. The programme is organized into five pillars aligned with the SDGs: ① Education and entrepreneurship; ② Technology; ③ Re-urbanization and sustainability; ④ Articulation and integration; and ⑤ Legislation and tax incentives, as shown in Figure 3.1. Education and entrepreneurship have helped generate economic and social development solutions in Curitiba, whilst technology intertwines all pillars to promote technological development as a foundation for smart city development, for example via digital infrastructure. Articulation and integration has ensured

Source: Curitiba Development Agency. URL: http://www.valedopinhao.com.br/en/index.html (Accessed: 13/07/2022)

Figure 3.1 The five pillars of the Pinhão Valley innovative ecosystem

5 European Network of Research and Innovation Centres and Hubs. URL: https://lac.enrichcentres.eu/wp-content/uploads/2020/11/ENRICH_Monthly_November19_Vol10.pdf (2019) (Accessed: 17/05/2022).

that the innovation ecosystem remains active and motivated whilst legislation and tax incentives have bolstered development activities concerned with innovation and technology offering legal support to reduce bureaucratization. In combination, these focus areas have cultivated a comprehensive innovation ecosystem, pioneering a modern city with a dynamic, innovative and creative economy.

1. Creating a business-friendly city: promoting entrepreneurship

Making business easier has been a central priority within the Pinhão Valley movement. The creation of an innovation ecosystem has helped to reduce bureaucracy and increase the agility of business development processes in Curitiba. Since August 2018, the process to open a business was transitioned online via the Empresa Fácil website to enable a more streamlined approach. This has had a visible impact in shortening the time needed to establish a company in the city, 64 percent faster than the Brazilian average (from 2 months to 22 hours).[6] Consequently, it has encouraged more entrepreneurs to formalize their businesses and created a more favourable urban business environment. In November 2019, the Fundo de Inovação do Vale do Pinhão approved a financial budget of USD 2 million to be used for innovative services, attracting further attention from new enterprises.[7] Legal measures such as the consolidation of the innovation law in 2018 have also attracted businesses with an initiative budget of BRL 10 million to help resource creative projects.

The innovation ecosystem offers various programmes to encourage entrepreneurship, creating appropriate conditions and supporting the development of students, start-ups and citizens to make Curitiba a city of business. As a unique initiative, the Curitibana Entrepreneurship programme was developed to provide financial autonomy to women in the city offering networking, training and mentoring events held by recognized leaders to help boost female participation. Curitiba has also established nine entrepreneurial spaces throughout the district via a partnership with SEBRAE as shown in Figure 3.2. These act as public offices, providing guidance and consultation to local citizens interested in starting new businesses, including training and qualification programmes. In 2018, they hosted nearly 60,000 citizens on 2,500 qualification courses.[8] Similarly, the Worktiba programme launched in 2017 by the council of Curitiba and the Curitiba Agency for Development and Innovation, opened the first public co-working spaces in Brazil to incentivize entrepreneurship and promote the exchange of innovative ideas to emerging challenges within the city (see Figure 3.3). The programme stimulates entrepreneurship, helps form and develop innovative ideas, and improves job, income and investment opportunities through development opportunities for start-ups and offering a platform to identify partners, receive investment and better integrate into the innovative ecosystem of the Pinhão Valley Plan through seed programmes.

The first space Worktiba Barigui focused on social entrepreneurship, and the second Worktiba Cine Passeio was geared towards the creative and cultural economy. As unique spaces, they have helped solidify

Source: Curitiba Development Agency. URL: http://www.valedopinhao.com.br/en/index.html#education (Accessed: 13/07/2022)

Figure 3.2 Public offices in partnership with SEBRAE support the development of new enterprises

6 Curitiba City Hall. URL: https://www.curitiba.pr.gov.br/noticias/curitiba-e-a-capital-mais-rapida-para-abertura-de-empresas-no-pais/57880 (2021) (Accessed: 23/05/2022).

7 Curitiba City Hall. URL: http://www.valedopinhao.com.br/vale-do-pinhao-contribui-com-ideias-e-geracao-de-empregos/ (Accessed: 21/07/2022).

8 The Intelligent Community Forum. URL: https://www.intelligentcommunity.org/curitiba_parana (Accessed: 21/07/2021).

Source: Curitiba de Graca. URL: https://curitibadegraca.com.br/worktibas-coworkings-publicos-de-curitiba-tem-inscricoes-prorrogadas-ate-10-de-fevereiro/ (2020) (Accessed: 22/07/2022)

Figure 3.3 Co-working spaces provided through the Worktiba project

Source: Curitiba City Hall. URL: https://www.curitiba.pr.gov.br/noticias/fab-lab-ultrapassa-limites-de-curitiba-e-apoia-projeto-de-moda-sustentavel/59983 (2021) (Accessed: 22/07/2022)

Figure 3.4 Fab Lab workspace and equipment

social entrepreneurship and stimulate innovative ideas that translate into income generation, job creation and new investments in the city. Offering flexible, hybrid modes of operation with a digital platform (which was leveraged during the COVID-19 pandemic) they provide a shared space for entrepreneurs with businesses in their initiative phase to learn, collaborate, network, gain mentoring and training, and promote seed projects that require development before being commercialized, helping them integrate within the Pinhão Valley innovation ecosystem. The spaces are used widely by individuals, start-ups and formalized companies that have business ideas, and who research and develop products related to incremental or disruptive technological innovation, socio-environmental impact and/or the creative and collaborative economy.

In another unique intervention, Curitiba's first Fab Lab was opened in March 2019 at Rua da Cidadania do Cajuru – a Massachusetts Institute of Technology (MIT) accredited digital fabrication and prototyping manufacturing laboratory where students, companies and communities can exchange knowledge and transform innovative ideas into practical outputs. To date, Fab Lab has supported 75 projects through consultancies to encourage a maker culture (for example digital manufacturing infrastructure such as 3D printers and scanners, laser cutters, computerized numerical control routes, plotters, bench milling machines and electronic equipment). The Fab Lab also provides free professional qualification courses for those aged 14 and over with priority for those in vulnerable situations, enhancing their employability conditions and income generation(see Figure 3.4).

The city also remodelled the Lighthouses of Knowledge project inaugurated in 1994 into the Lighthouses of Knowledge and Innovation, transforming public space with free internet access into a makerspace – innovative educational spaces providing students with information and literature, and allowing them to explore new areas of learning supported through the integration of technologies such as 3D printers for design prototyping. Under the Lighthouses of Knowledge and Innovation, the former public library has been transformed into a makerspace. These spaces promote and encourage innovation in the city enriching the creation, collaboration, critical thinking and autonomy of students.

2. Promoting innovative technology industry and strengthening economic resilience through employment creation

In 2018, the City Hall and Agência Curitiba re-launched the Curitiba Tecnoparque(see Figure 3.5), a city development programme that offers a discount on municipal service tax (from 5 percent to 2 percent) to companies that invest in technology and innovation in the city. As a hub which connects innovation stakeholders to modern infrastructure, the park is helping to drive sustainable economic development and has increased productivity, international

Source: Curitiba Development Agency. URL: https://www.curitiba.pr.gov.br/noticias/apenas-em-2021-tecnoparque-garante-r-304-milhoes-em-investimentos-para-empresas/59534 (2021) (Accessed: 08/09/2022)

Figure 3.5 Curitiba's Tecnoparque

competition, income and job creation. It now accommodates 113 registered companies dedicated to the development of new technology. In combination, these companies generate 16,000 jobs and turnover BRL 5.7 billion. It has also secured BRL 124 million in investments for registered companies since its launch.[9] In 2018, the Bom Negócios programme was also resumed offering free, impactful entrepreneurial education courses in line with the Pinhão Valley concept. Cooperative partnerships with educational institutions, professional and development agencies, and management specialists have prepared 4,440 people for modern business management, focusing on the digital world. During the COVID-19 pandemic, 1°Empregotech was also established, a partnership between Agência Curitiba and Curitiba Social Action Foundation, offering free computer programming courses to youths, encouraging graduate students to enter local technology focused enterprises.

To meet the demands of the automotive and auto parts sector, Curitiba will establish a Technological Park 4.0 for the car industry, the result of work by the Automotive Industry Sectorial Council. The council consists of representatives from industry, teaching and research institutions, the government and the Federation of Industries of the State of Paraná (Fiep) system with roughly 90 professionals working across research, development and innovation, articulation and infrastructure, and market and employee training. Located in the Fiep System Industry Campus in the Jardim Botânico neighbourhood, the park will aim to help identify innovative solutions and provoke competition in the sector, supported by the council and the diversity of all Pinhão Valley actors. Partnerships are currently being finalized, helping transform the

9 Curitiba Development Agency (2022).

innovation space into a global reference through, for example, cutting-edge technological processes which will enable the recycling of electric car batteries – an unprecedented process being developed between BMW do Brasil and the Senai Institute for Innovation in Electrochemistry.

Through the mobilization of Pinhão Valley, Curitiba has made strides in increasing job opportunities, maintaining investment and minimizing the impact of the COVID-19 pandemic. In 2021, the city started with the second highest positive balance in regard to the generation of formal jobs among capitals with 5,264 hires in January 2021 according to the Ministry of Economy's General Register of Employed and Unemployed.[10] Engaging in Curitiba's post-pandemic economic recovery, the programme has enabled the city to maintain a sustainable and efficient economy and social structure whereby measures such as the Guarantor Guarantee Fund allowed entrepreneurs and companies to take a break and prepare for a new post-COVID economy. Launched in October 2020, the fund provided over BRL 6 million in loans to Curitiba's small businesses with resources fluctuating from BRL 5,000 to BRL 150,000, reaching a range of recipients such as restaurants, beauty salons and coffee shops, among others.

Partnerships between the City Hall, Agência Curitiba, SEBRAE PR and the Municipal Tourism Institute have helped to strengthen the economy in local neighbourhoods through focused action on the sustainability of micro and small companies. Training courses have been offered including 2,222 hours of consulting focused on the digital world for 3,534 tourism companies and artisans, as well as 25,000 services providing guidance business formalization and credit in Ruas da Cidadania. A total of 1,446 entrepreneurs also benefited from a digital retail course and 278 companies attended the Accelera Digital course.[10] With substantial impact on investment and job creation, the tech-based start-ups Ebanx and MadeiraMadeira became the first unicorns[11] in the south. These two companies have been pivotal in driving economic growth. Ebanx (focused on tackling international payments) hired 200 new employees in 2020 after receiving major funding from FTV Capital (an investment fund in Silicon Valley, United States of America) and MadeiraMadeira (the largest platform for home products in Latin America) secured USD 190 million from the Softbank Latin America Fund and guaranteed BRL 124.1 million in investments for companies benefiting from the municipal service tax reduction.

In terms of geographic space, the development centre of the Pinhão Valley Plan is in the Rebouças neighbourhood where in 2019, the government established a multifunctional zone for the reconstruction and development of the neighbourhood and the surrounding areas. Today, new factories serve as public buildings for innovation, interaction and collaboration between different contributors in the innovation ecosystem. In terms of implementation, the Pinhão Valley Plan integrates participants and entrepreneurs into an innovative environment by promoting forums, symposiums, events, lectures and conferences such as Smart City Expo Curitiba, Paiol Digital, Innovation Expo and Curitiba Movement which make the entire innovation ecosystem dynamic and positive.

Reference experiences

1. Cultivate urban environments that enable new enterprises to flourish

Where cities are becoming increasingly central to business activity, they are also becoming more interdependent, reinforcing the need to cultivate urban environments in which businesses can grow and prosper to drive long-term economic growth. Within Curitiba, business founders and entrepreneurs are fortunate to have access to an abundance of resources for their development through the Pinhão Valley Plan innovation ecosystem. Within the city, local start-ups can gain access to the market and connect with companies providing them with clients and knowledge,

10 Vale do Pinhão. URL: http://www.valedopinhao.com.br/vale-do-pinhao-contribui-com-ideias-e-geracao-de-empregos/ (Accessed: 24/05/2022).

11 Unicorn: a term to symbolize start-ups that have reached a valuation of USD 1 billion.

inspiring them to develop and commercialize new technologies. In addition, the introduction of pro-business legislation and regulation mechanisms has eased the process of business formalization, resulting in a greater influx of new start-ups and businesses, investment and financial capital. To enable prosperous economic development, municipal governments should integrate processes that foster an ease of doing business, nurturing entrepreneurs and businesses through the development process by minimizing red tape, ensuring consistent policymaking, and offering accessible and approachable government agencies.

2. Promote innovation-based entrepreneurship

Curitiba's focus on entrepreneurship has helped catalyze a shift towards an innovative, creative urban economy. Driving the smart city shift, entrepreneurship helps to locate and exploit opportunities in the market; generating innovative solutions to emerging challenges whilst boosting capital formation and investments as well as per capita income. Where technological interventions and innovations are largely driven by entrepreneurs in the city, they also help cities to undergo economic and socio-technical transitions, changing the relationship between workers and the workplace, and realizing new modes of economic development. Converting latent and idle resources into ideas, and goods and services, entrepreneurs and start-ups spark collaboration and cooperation, and open up diverse employment opportunities which help to produce a more productive workforce and improved economy. Cities therefore contain untapped potential to actively encourage entrepreneurs and start-ups as a means to foster growth.

3. Understand the role of urban innovation ecosystems in driving economic growth

Innovation-based start-up ecosystems are emerging in urban areas across the world with cities best placed to meet the needs of entrepreneurs via their high concentrations of capital, diversity and interaction. As exemplified by the Pinhão Valley Plan, urban ecosystems can unlock new jobs and economic opportunities emerging from new business models propelled by start-ups and innovation. In addition, they help pool resources for local innovation in areas such as R&D and out-of-city 'innovation leaders' which serve to further diversify local economies and boost competitiveness between cities and regions. They therefore play a vital role in facilitating new urban business environments, altering the economic dynamics of the city and stimulating greater levels of innovation compared to traditional industry, driving economic growth. Understanding the benefits of local innovation ecosystems is thus of great significance through which cities can foster entrepreneurship that creates new sectors and businesses, and which strengthens local and regional economies.

Monterrey, Mexico: Sparking the Potential of Universities to Drive Innovation and Entrepreneurship via Industry and Community Partnerships

Case background

Globally, cities and universities are cooperating to create new dynamic economies and rejuvenate societies. Mexico has long valued the development of its internal education, and in the early 1990s initiated educational reforms and established a new educational model –Modelo Pedagogico. The model not only focused on school teaching reform but also the relationship between school and society, and the education of society which has since led to an initial modern educational concept. Mexico is at the core of the technological revolution in Latin America and embraces new technological achievements. And as an emerging economy, the country possesses a rapidly growing education centre and a soaring entrepreneurial ecosystem that cooperates with regions across the Gulf of Mexico.

Situated in northern Mexico, Monterrey is one of the major cities in the Gulf of Mexico bordering the United States of America, affording it advantages in terms of an entrepreneurial ecosystem. It is one of the wealthiest cities and the third largest metropolitan area in the country, ranking first in per capita income and offering many convenient facilities. The revitalization of areas such as Barrio Antiguo in recent years has created a thriving and safe atmosphere in the city with a vibrant culture and educational system, which along with its dynamic academic facilities and enriched academic capacity, promotes an influx of

skilled professionals.[12] At the forefront, the Monterrey Institute of Technology and Higher Education (ITESM) is pioneering development and positioned to be a leader in catalyzing national urban and economic regeneration, highlighting the power for Latin American universities to serve as engines of innovation and entrepreneurship.

Established in July 1943, ITESM is the most authoritative institute in the country. The faculty was set up following a proposal from entrepreneurs who aimed to create a private university offering the highest academic standards, learning from the MIT model in the United States of America, and promoting scientific and technological development across Mexico. As the urban environment of core areas in Monterrey deteriorated, the board of directors at ITESM agreed on a plan to revitalize neighbouring campus blocks,[13] increasing traction of the close cooperation between cities and major universities to develop innovative economy and social revitalization. ITESM has ambitions to become one of the top 100 universities in the world and the best in Latin America, and aims to play a leading role in promoting the revitalization of Monterrey's economic and social fabric to showcase the strength of Latin American universities in fostering entrepreneurship and innovation. To realize this goal, Sasaki (an interdisciplinary design firm) collaborated with ITESM to develop a masterplan to renew the site, providing a framework for the long-term development of the campus and its surrounding communities. At its core, the plan seeks to reinvigorate the relationship between the university and the city to create a campus environment that will attract R&D investment and build vibrant, attractive and dynamic communities in the region. The plan also seeks to promote integrated and connected public development space, supporting clusters that will contribute to the new economic development and facilitate revitalization of neighbouring blocks.

Implementation process

Redesigning the pedagogical structure of the Monterrey Institute of Technology and Higher Education

In 2015, ITESM launched a forward-oriented plan entitled Tec 21 Education Model, an ambitious proposal aiming to reshape the comprehensive pedagogical structure. Critically, it will encourage students to communicate with relevant industries and surrounding communities for space exploration and promote collaboration between interdisciplinary departments. Following an assessment of ITESM's 29 campuses, the Querétaro and Puebla campuses were selected to be part of the pilot renovation and were completed in January 2016 and February 2017 respectively(see Figure 3.6 and 3.7). As a key step this renovation laid a foundation for the subsequent Tec 21 Education Model.

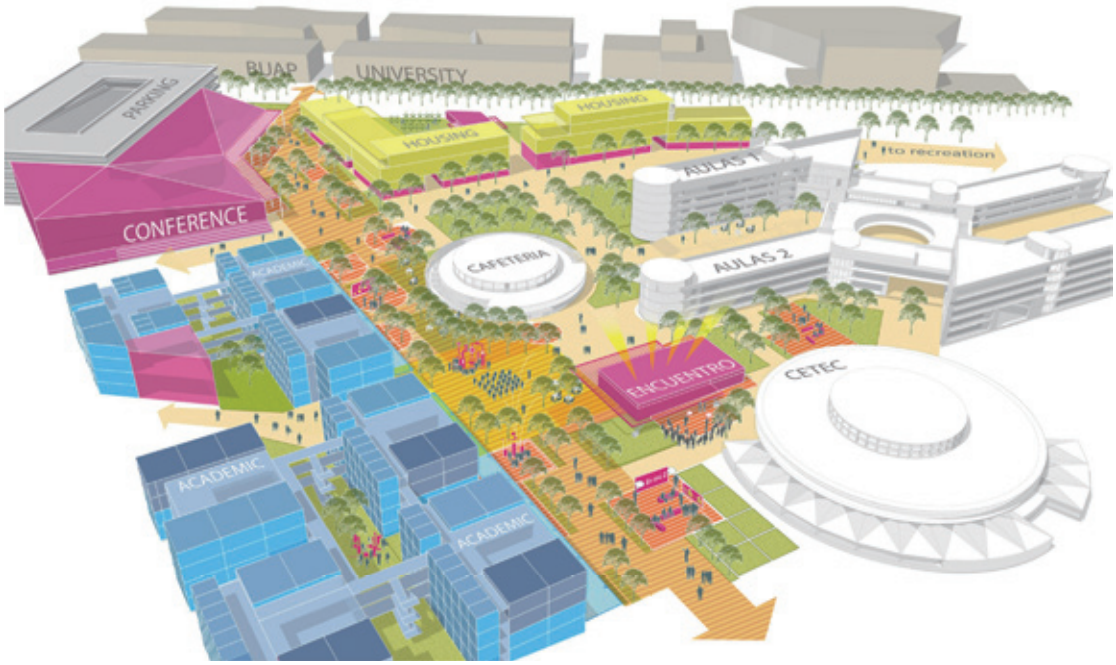
In August 2017, the interior design of La Carreta Pavilion was completed. An essential landmark in the Tech 21 Education Model, La Carreta Pavilion, as shown in Figure 3.8, is located at the core of the campus. Designed to host exhibitions, research, inventions, competitions and collaboration summits, it also serves as a space to encourage connections and exchange ideas between students, faculty and staff, and communities. Construction of the New Main Library was also completed with the previous structure transformed into a highly innovative and dynamic learning environment. The library sits at the heart of the campus – an information database and learning arena to encourage transparent participation and cooperation between students and faculty, staff and regional industry leaders(see Figure 3.9). As core elements in the large-scale strategic planning of ITESM, the New Main Library together with the La Carreta Pavilion complete the first steps of the masterplan for the campus and the region.

12 Case Study: AIA Urban Design Honourary Award 2017 – The Revitalization Plan of the Monterrey Institute of Technology and Higher Education, Mexico.

13 Tetakawi. URL: https://tetakawi.com/zh-hans/%e5%af%bb%e6%89%be%e9%80%82%e5%90%88%e8%b4%b5%e5%85%ac%e5%8f%b8%e7%9a%84%e5%9c%b0%e7%82%b9%ef%bc%81/manufacturing-in-monterrey-nuevo-leon/ (Accessed: 03/08/2022).

Source: Sasaki. URL: https://www.sasaki.com/zh/projects/campus-queretaro/ (Accessed: 30/07/2022)

Figure 3.6 Illustration of the Querétaro campus plan

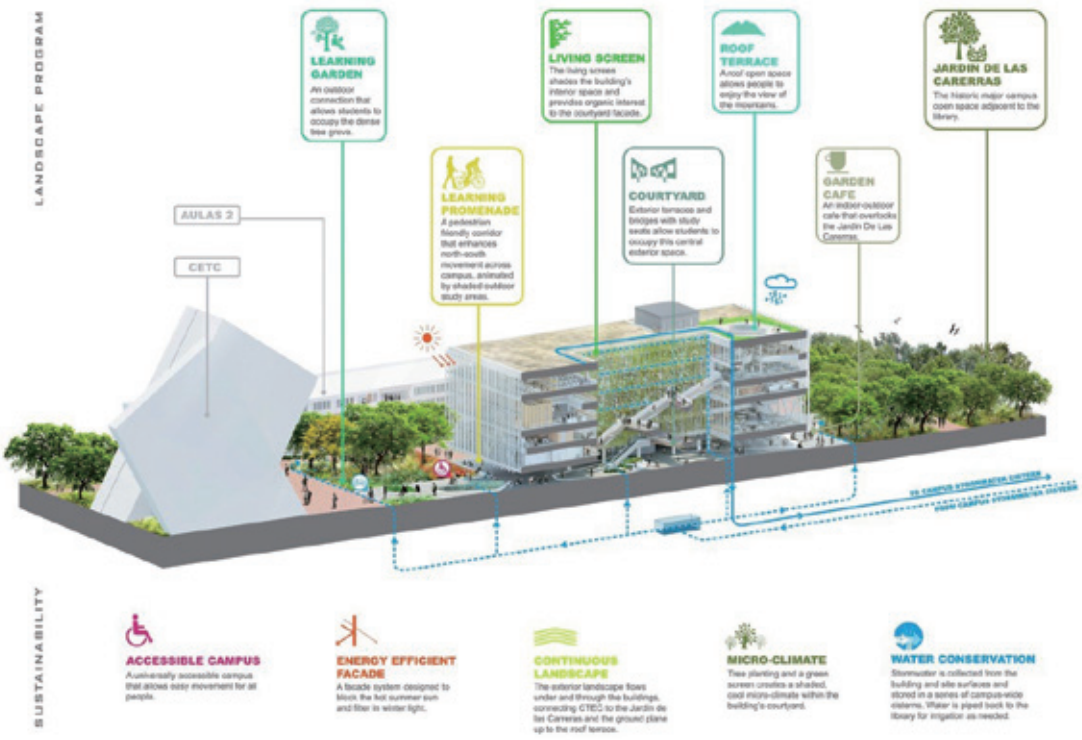


Source: Sasaki. URL: https://www.sasaki.com/zh/projects/campus-puebla/ (Accessed: 30/07/2022)

Figure 3.7 A 3D overview of the Puebla campus plan

Source: Sasaki. URL: https://www.sasaki.com/zh/projects/tecnologico-de-monterrey-la-carreta-pavilion/ (Accessed: 30/07/2022)

Figure 3.8 The enclosure of La Carreta Pavilion



Source: Zhuohan Suwen Architects. URL: https://www.zshid.com/?c=building&a=view&id=2220 (2018) (Accessed: 30/07/2022)

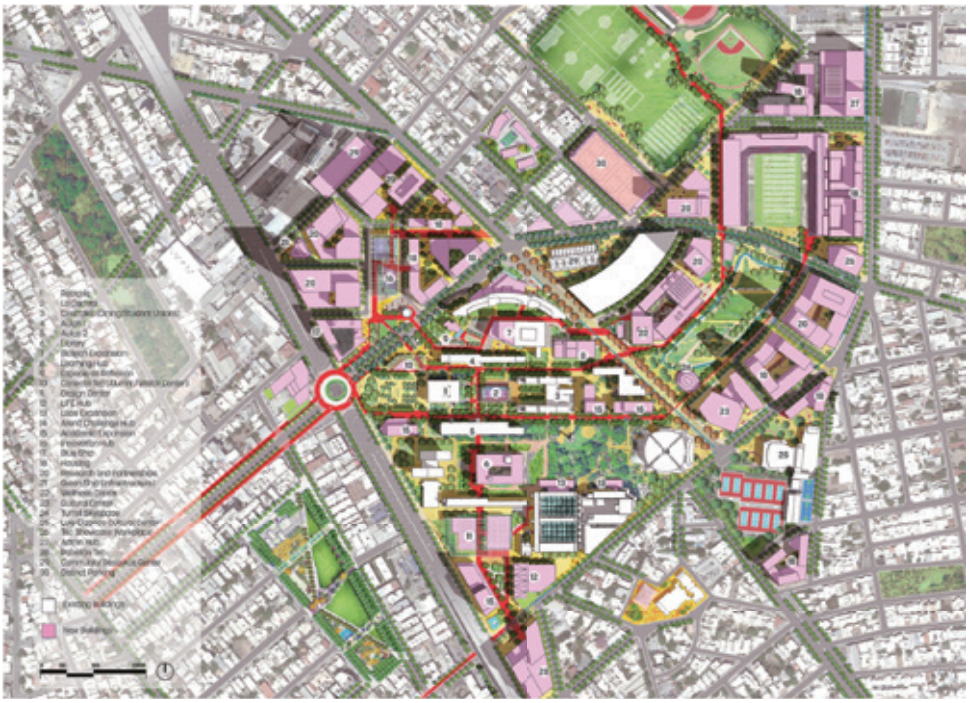
Figure 3.9 Key elements of the New Main Library

The masterplan is based around a new development axis, the Avenida del Estado as shown in Figure 3.10. It covers previous core areas of the campus and directly connects the recreational area in the north. Inspired by the Tech 21 Education Model, the two key points at each end of the core area (the New Main Library and La Carreta Pavilion) will offer opportunities for interdisciplinary learning. According to the masterplan, current underutilized spaces will be transformed into hubs for collaboration and entrepreneurship. The new development layout illustrated by the masterplan not only broadens the existing boundaries of the campus but also connects to external spaces, new planning areas and surrounding communities to contribute to ecological, social and economic sustainability goals(see Figure 3.11 and Table 3.1).

Table 3.1 Programme components

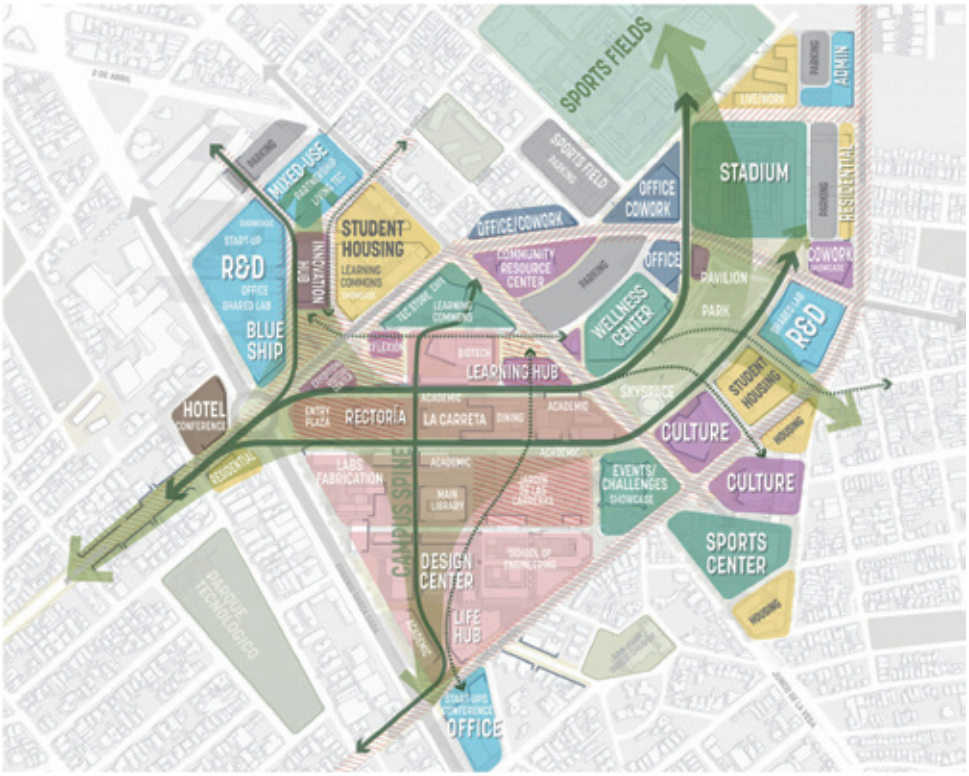
Source: Sasaki. URL: https://www.sasaki.com/zh/projects/tecnologico-de-monterrey-urban-regeneration-plan/ (Accessed: 01/08/2022)

Entrepreneurship and Research Expansion	Research and Development Cluster: *allies industries, synergies with Tec applied research activities* Innovation, Entrepreneurship and Alumni Centre: *Incubators, collaboration spaces, showcase, events, meeting areas*
Collaboration Spaces	Library: *student life environments, library, integrated study, dining and café* Student and Faculty Commons: *co-working spaces, faculty lounge* Tec X Pavilion: *showcase, events, flexible spaces, information hub* New Dining Experience: *enhance and expand food services on campus and district*
Learning Nodes	Design Centre: *Engineering, art, architecture, industrial design, industry gateway* Biotech Plaza: *Programme expansion, industry gateway*
Mind, Body and Spirit Integration	Recreation Centre: *indoor facilities, connected to campus* Borregos Stadium: *viewing area, integrated with amenities* Cultural Expansion: *expansion of cultural programmes on campus and district*
Neighbourhood Regeneration and Community Development	New Student and Faculty Housing: *new modes of living, neighbourhood integration* Community Resource Centre: *job training, community spaces, outreach, social incubators* Public Realm Improvements: *parks, sidewalks, bike lanes, sustainability strategies, safety*



Source: Sasaki. URL: https://www.sasaki.com/zh/projects/tecnologico-de-monterrey-urban-regeneration-plan/ (Accessed: 01/08/2022)

Figure 3.10 The integrated framework of the urban renewal plan for ITESM

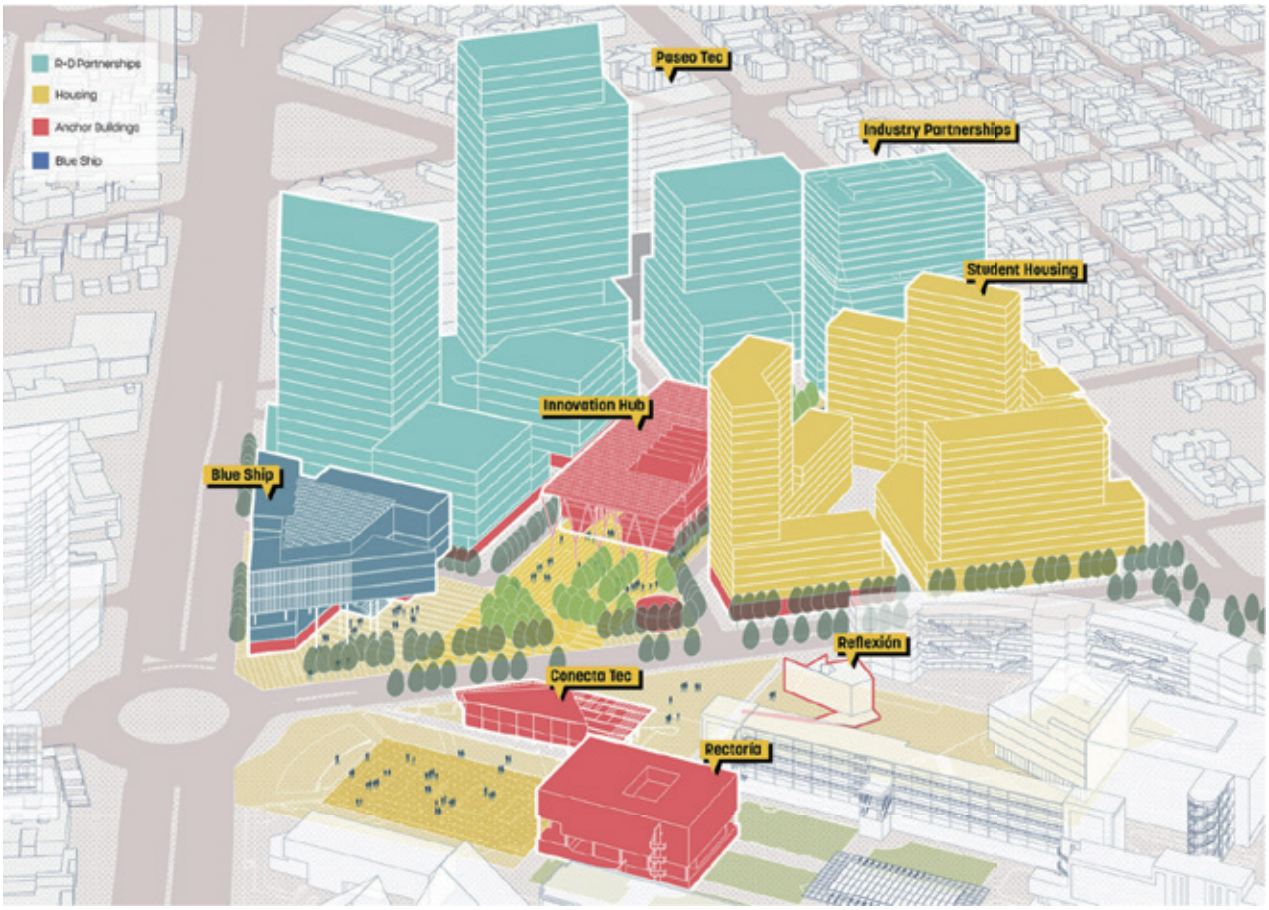


Source: Sasaki. URL: https://www.sasaki.com/zh/projects/tecnologico-de-monterrey-urban-regeneration-plan/ (Accessed: 01/08/2022)

Figure 3.11 New mixed-use districts adjacent to the university are designed to attract investment from allied industries

An additional area has been integrated north-west of the campus comprising multifunctional space, student housing and academic research space (see Figure 3.12). The innovation hub is located in the heart of this area, and provides a platform for general activities, promoting collaboration among enterprises, students and faculties. The new multifunctional space is situated in close proximity to core academic areas to connect the campus with surrounding communities. This facilitates a strong and direct relationship between the academic community, knowledge-based industries and the city's community, and establishes close partnerships for potential high-end research and product innovation. Due to its strategic location, the plan aims to use the multifunctional space to attract investment from related industries and leverage technology to stimulate a major impetus for urban transformation.

To advance campus regeneration and connect with neighbouring communities, Sasaki has conducted detailed architectural and landscape research into the key areas laid out in the masterplan. For example, landscape planning is currently being drafted for the Science and Technology Park situated in the technological district beside the campus. The park is also near transport hubs and shopping streets, and is surrounded by residential areas including student housing. Feedback on the previous site was collected from communities, students, professors and staff through questionnaires and interviews. Preliminary research reported the previous site for the park lacked any management of trees, facilities and maintenance due to a sharp decrease in the local population and investment. The location of the park is important because it plays an integral role in connecting the campus and communities, and serves as an essential



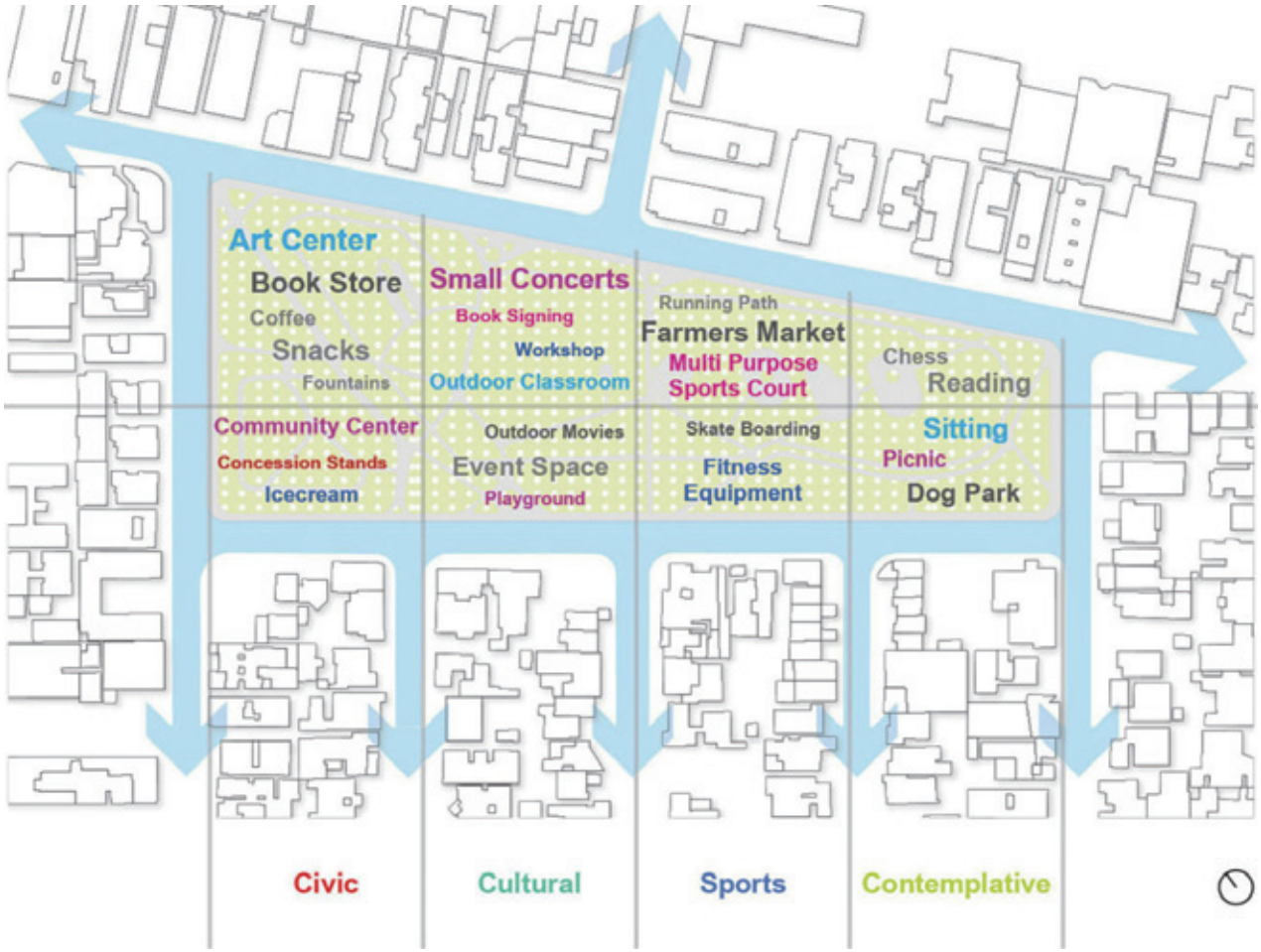
Source: Sasaki. URL: https://www.sasaki.com/zh/projects/tecnologico-de-monterrey-urban-regeneration-plan/ (Accessed: 01/08/2022)

Figure 3.12 The innovation hub north-west of the campus

space for both. According to landscape planning, the park will be a major pedestrian area that connects the ITESM campus with related communities and a central area for tourists and other visitors. Detailed planning of the TecXXI Pavilion, Borregos Stadium and the Recreation Centre is still ongoing. Each structure will play a key role in promoting exchanges between students and faculty members, whilst strengthening the connection between ITESM and neighbouring communities (see Figure 3.13).

The ITESM masterplan is composed of numerous factors including the Tech 21 Education Model which focuses on reshaping the pedagogical structure and environment, and other detailed plans for core blocks, buildings and landscapes. To complete the overall planning of ITESM, the masterplan relies on expanding research programmes, attracting top professors and students from both home and abroad, and increasing investment to upgrade the learning quality and to integrate spaces for extensive collaboration between disciplines. Different projects in the masterplan are in the planning and construction phases, elevating ITESM as a top university in Latin America when complete. A survey conducted by ITESM reports that the plan has attracted over USD 1 billion in private investment for the regions around the campus, which in addition to subsequent investment has promoted the revitalization and reconstruction of Monterrey's surrounding communities.

To establish diversified teaching models, many colleges



Source: Sasaki. URL: https://www-sasaki-com.translate.goog/zh/projects/parque-tecnologico/?_x_tr_sl=zh-CN&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc (Accessed: 03/08/2022)

Figure 3.13 Functionality of different areas within the technology park

and universities are redefining traditional learning environments, concentrating on entrepreneurial thinking, interdisciplinary and collaborative learning, and implementing project-based activities based on current social conditions. The leadership at ITESM has assessed the internal needs and demands of the country's emerging workforce, analysing the competition formed by changing economic conditions and globalization challenges. The faculty concluded that the traditional centralized learning model that focuses on a single major was insufficient for the current generation who need to be able to adapt to the different sectors from which the Tech 21 Education Model was initiated. Cooperation between Sasaki and ITESM has resulted in a series of space planning solutions aiming to reform the university's teaching and learning model. The collaboration led to the development of a spatial layout strategy which applies a comprehensive redesign of the entire campus, emphasizing the importance of creating individual learning environments. The layout can be applied to all 29 campuses or buildings in campuses under construction (currently a total of 31 campuses) – a critical element to expanding ITESM's Tech 21 Education Model across the country.

Established under the Tech 21 Education Model, the New Main Library and La Carreta Pavilion provide excellent environments for students to learn team building and problem-solving skills with peers, professors and industry collaboration partners, exchange knowledge and experiences, and prepare themselves for careers after graduation. The model has highlighted that in many instances there is a compelling need to redesign the environment of many universities around the world in order to meet the changing needs of our current society. The administrators at ITESM also launched investment plans to explore the potential of other innovative spaces so as to offer new types of courses in the future.

ITESM's new campus model has built flexibility and resilience into its core. Based on digital manufacturing technology, Sasaki has developed a flexible planning framework that enhances connectivity and facilitates the development of a more extensive system, utilizing computer-based simulations during construction processes across the various phases of the project. Due to the flexibility of the system, additional functional demands can also be integrated into the ever-changing simulation to ensure practicality and alignment with the long-term objectives. Buildings can be transformed to fulfil various functional needs on demand, creating a more agile educational facility. The masterplan also incorporates different building clusters into the large campus with each sharing a series of interrelated elements such as building typologies and open spaces. The building clusters here work as toolkits that contain all the necessary parts such as academic units, residences and research facilities, located alongside a specific open space. This allows multiple options to combine buildings which creates an emerging innovative relationship between traditional teaching units for a more dynamic model.

A more extensive and looser boundary is formed to promote collaboration in communities. The masterplan extends the development axis of the campus and relocates certain public facilities to the campus boundary for community sharing purposes, thus extending the boundary to better integrate with the city. The internal core areas such as the New Main Library and La Carreta Pavilion provide architectural functions and serve as spaces for collaborative communication, creating opportunities for external communication. As an inclusive design process, ITESM listens to its wider community, and the Science and Technology Park has been upgraded into a vital urban centre for the technology community, becoming a model to improve the surrounding areas and to generate win-win results due to the investment of academic institutions in the surrounding areas. The newly developed multifunctional space is also a popular investment location for related industries connecting the campus with both local and external communities. The campus of ITESM is an attractive and vibrant community where contemporary academic, cultural, social, residential and sports facilities have been designed to create a high-quality environment in which students can come together to promote interdisciplinary learning. In this regard, the entire campus will be designed as one comprehensive classroom, attracting diversified talent to create a unique and integrated experience.

Reference experiences

1. Promote integrated design between campus facilities and external communities to ensure inter-exchange and connection

Outstanding universities are those that coexist with dynamic communities, and dialogue and exchange with external communities are increasingly important to modern universities. Within the conventional independent spaces for teaching, research and residence are transformed into integrated spaces to enable communication and sharing. The development and expansion of ITESM's campus not only facilitates inter-disciplinary and staff collaboration but also encourages students to interact with local industries and neighbouring communities. Campus facilities are shared with communities despite the boundaries between urban and university spaces, aiming to provide a more seamless area avoiding fixed boundaries and the specific delineation of space. The masterplan also proposes future strategies that will have an immediate impact on neighbouring communities. During the continuous community expansion, the masterplan proposed a series of measures to improve public parks, make communities safer, and upgrade streets and public spaces to encourage soft modes of transport such as walking and cycling, in turn transforming the area into a more liveable community to attract both residents and workers. ITESM has thus taken measures to ensure the campus' independence while sharing facilities with the community and realizing its social values with cutting-edge design extending value and experience across boundaries.

2. Facilitate holistic development that connects campuses with communities and urban industrial clusters

In the knowledge economy and era of innovation, the roles and objectives of spatial planning for universities and higher-educational spaces are now changing. Integrated, open, innovative and ecosystem-based campus spaces can be seen to promote enhanced collaboration and foster more dynamic environments. Universities are integral faculties in driving research, knowledge and innovation, and attracting information and talent, and therefore play a key role in urban and regional economic development. Where situated alongside industrial clusters, universities can leverage the strategic co-location of innovative and productive spaces, promoting local commercialization and also focusing attention on research, investment and entrepreneurship ecosystems formed on the basis of university talent. The ITESM masterplan has attracted significant R&D and investment in the campus context, contributing to innovation and upgrading in local industry and entrepreneurship. In addition, the community has transformed into a vibrant, dynamic area in which the campus is more closely fused with the community and the city's industrial innovation. This project showcases the added value of university campus renovation projects in which key components are details from the functional and technical design of campus layout, technology transformations, facilities design and spatial planning to ensure land-use efficiency.[14]

Heidelberg, Germany: Modernizing Heidelberg through Industrial Upgrading and Diversification

Case background

Heidelberg is a dynamic city with a mixture of traditional and contemporary tourism, culture, science and technology, and education. The city has a population of approximately 160,000 of which 56,000 are estimated to have immigrated – many of whom are scientists or students.[15] In combination with Mannheim and Ludwigshafen, the city makes up part of the Rhine-Neckar metropolitan region as shown in Figure 3.14, a polycentric area serving as a key driving force in the German economy aiming to be one of the most attractive and competitive regions in Europe. With a strong scientific presence, Heidelberg is also home to Germany's oldest university and hosts a number of internationally renowned research institutes and research-based companies, thus making it a high-

14 Sohu News. URL: https://www.sohu.com/a¬/200202426_716486 (2017) (Accessed: 05/08/2022).

15 City of Heidelberg. URL: https://www.heidelberg.de/english/Home/Life/The+City.html (Accessed: 11/08/2022).

Source: Initiativkreis Europäische Metropolregionen in Deutschland. URL: https://deutsche-metropolregionen.org/metropolregion/rhein-neckar/?lang=en (Accessed: 11/08/2022)

Figure 3.14 Heidelberg's location within the Rhine-Neckar metropolitan region

quality place with strong economic foundations to live and work in.

Heidelberg is an international tourist destination receiving over 3 million tourists annually. It has 18 museums and is famous for its traditional red roof houses which perfectly preserve the style of the Medieval Ages. The Neckar River divides the city into the north and the south banks, with greenways running parallel which offer leisure areas for local people. The two parts of the city are connected via several bridges, the most famous of which is Karl-Theodor-Brucke (see Figure 3.15), built in the 18th century. Steeped in history, Heidelberg aims to preserve these relics and the cultural identity of the city, as reflected by the city's local cultural identity preservation programme which includes approximately 1,000 protection objects and 2,100 individual buildings.

Founded in 1386, Heidelberg University is an important landmark and pillar of the city, and the oldest university in Germany. The university campus is fully integrated into the old city in that there are no gates, walls or clear boundaries, creating a strong academic presence and reinforcing the prestige of Heidelberg as a city of science. Renowned writers and thinkers including Ernst Bloch, Martin Heidegger, Max Weber and Hannah Ahrendt all lived, studied and taught at the university, and it is this rich history that attracts a great many tourists every year. As of 2017, a total of 56 Nobel Prize winners and 19 Leibniz Prize winners once studied, taught or conducted research at the university. In the 18th and early 19th centuries, romantic literature was born in the city, and even today a large number of philosophers and sociologists live here. The United Nations Educational, Scientific and Cultural Organization (UNESCO) awarded Heidelberg the title 'City of Literature'. Heidelberg is home to 45,000 students from all over the world as well as a great many publishers, bookshops (1.5 per 10,000 inhabitants on average) and renowned translators. Heidelberg ranks third among all German cities in terms of per capita investment in cultural activities by public organizations (USD 295 per capita, USD 42.5 million in total). The important segments of the creative economy are book publishing (one-third of all creative professionals) and software. Its proportion of cultural and creative industries in overall economics is

Source: Sohu News. URL: http://www.sohu.com/a/243206390_100191781 (Accessed: 12/08/2022)

Figure 3.15 The famous Karl-Theodor-Brucke in Heidelberg

higher than other cities, with 75 percent of its revenue coming from literature and publishing. Currently, over half of Heidelberg's working population are employed in culture-related industries.

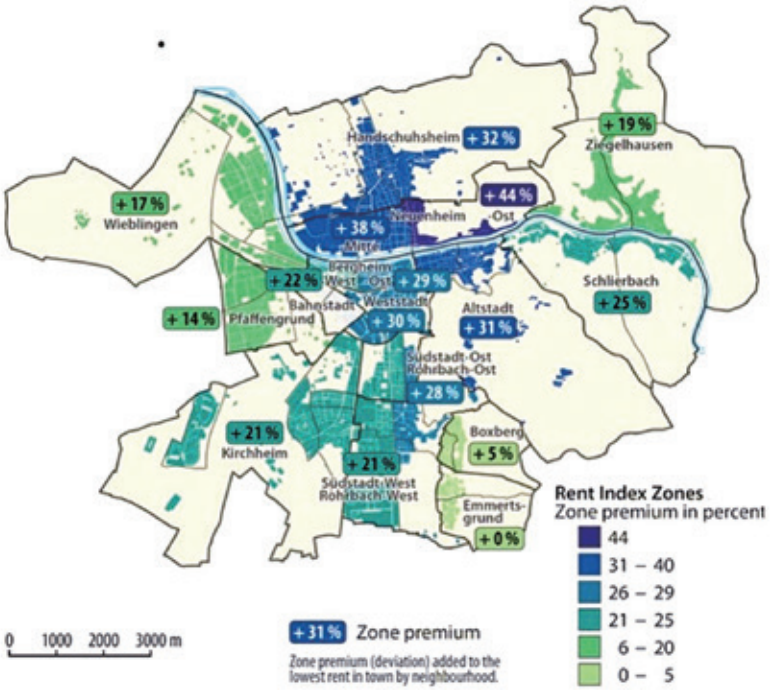
However, the development of the local economy has faced great challenges with the economic system over reliant on the tourism industry and its status as a university town. The homogeneous industrial structure reduced sustainability of the city's economy, which led to difficulties in raising the income level for local residents. Urban expansion and economic diversification thus became the common choice of local government, businesses and citizens.

Implementation process

1. Urban expansion and diverse regional development

Each area of Heidelberg contains its own unique characteristics and it is this diversity that makes the city vibrant and attractive. The long and narrow old city – the cradle of Heidelberg – is surrounded by city roads that intertwine with nature, whilst Weststadt contains many examples of residential buildings from the reign of Wilhelm. Bahnstadt is a railroad town and currently the largest Passivhaus colony, while other districts such as Handschuhsheim are comprised of combinations of less urbanized areas and life science research institutes with Rohrbach formerly known as a wine village. In terms of rental prices, Heidelberg ranks sixth among all German cities but a 'core-edge' structure is significant within the city and the rent in the northern 'creative' zone is on average 30 percent higher than the cheapest neighbourhood in the south (Emmertsgrund/Boxberg) (see Figure 3.16).

Heidelberg has taken advantage of its rich tourism influx as a means to drive industrial development. Here, both conventions and exhibitions have played



Source: Gerhard, U., and Hoelscher, M. Knowledge Makes Cities: Education and Knowledge in Recent Urban Development. The Case of Heidelberg, Germany. Inequalities in Creative Cities (2017)

Figure 3.16 Distribution of housing rental prices in the different districts of Heidelberg

a key role in the economy. In regard to academic symposiums, 70 percent of Heidelberg's tourist accommodation income is generated from business travellers who make short stays and enjoy the city's history, cultural tradition and prestigious scientific presence. In addition, classical concerts, musical performances and other significant creative events are regularly held at the Heidelberg Convention Centre along with large-scale exhibitions, trade shows organized by global companies, annual conferences and other events. Small meetings play an important role too with the renowned Heidelberg Convention Hotel providing the ideal venue for conferences and meetings due to its high-quality facilities. The city benefits from universities, technological innovation and creative industries which attract highly skilled and creative workers and residents. This also creates new potential for high-quality education where an increased number of families with a strong academic ethos contribute to a more educated workforce. Statistics from Gerhard and Hoelscher's research[16] highlight that students who attend elementary schools within 'professorial communities' are far more likely to attend the best secondary schools.

2. Developing a technology cluster in partnership with Heidelberg University

With the support of Heidelberg University, local industries began to develop with healthcare one of the strongest performers. The healthcare industry in Heidelberg contains 20 percent of the city's working population; far higher than the German average of 7 percent. Due to the abundance of medical research projects, clinics and hospitals associated with Heidelberg's universities, the health industry is closely linked to these entities. Universities and higher education serve as important sectors in Heidelberg whereby R&D equates to 4 percent of local gross domestic product (GDP) and 1.9 percent of national GDP; and cultural institutions 6 percent of local GDP

16 Gerhard, U., and Hoelscher, M. Knowledge Makes Cities: Education and Knowledge in Recent Urban Development. The Case of Heidelberg, Germany. Inequalities in Creative Cities (2017).

and 3.8 percent of national GDP.

Technologiepark Heidelberg, as shown in Figure 3.17, is located at Heidelberg University with an additional research base in Bahnstadt. It is an important local industrial cluster that is now world-renowned as a high-tech park. The park is home to one of the most important biotech research centres in Germany with 2,800 scientists and employees. It is also the most important bio-pharmaceutical industry cluster in Germany and a leader globally, with hundreds of resident pharmaceutical companies such as BASF, Merck and Roche Diagnostics. In addition to relying on R&D resources from Heidelberg University, the park cooperates closely with numerous international bio-technology parks, renowned domestic and international research institutes, and bio-technology companies boosting the development of bio-technology industry clusters in the city.

The Neuenheimr Feld zone is one of many zones with a 40,000 m^2 radius comprising laboratories as well as commercial and industrial facilities which make up the core zone of Technologiepark Heidelberg. Due to its integration with Heidelberg University, it is often used for practical research with a creative and dynamic atmosphere that encourages communication between students, young scientists, experienced entrepreneurs and lecturers.

3. Developing a cross-regional technology innovation network

To further develop local high-tech industries, Heidelberg goes beyond its geographical boundaries to establish technical cooperation with neighbouring cities. As Heidelberg's closest city, Mannheim is less than a 30-minute drive away. The Heidelberg-Mannheim Health and Life Sciences Alliance was founded in the mid-1980s in Bergheim, Heidelberg. As the first medical park in Heidelberg, it pioneered modern clinical facilities and inspired a range of innovations in medical research and teaching. The network comprises multinational companies such as BASF, Merck, Sanofi and Roche Diagnostics as well as more than 400 small and medium-sized pharmaceutical companies.

Source: Technologiepark Heidelberg. URL: https://www.technologiepark-heidelberg.de (Accessed: 10/08/2022)

Figure 3.17 Technologiepark Heidelberg

Research institutions in the vicinity include the Heidelberg University, two local medical schools in Heidelberg and Mannheim, and domestically and internationally-leading research centres such as the German Cancer Research Centre, the European Molecular Biology Laboratory and the Max Planck Institutes in the Rhine-Neckar region. Combined, they create an exclusive technological development network in the medical engineering field whereby companies provide technical knowledge services for companies and conduct R&D and training. As life science and medical researchers and institutions in the Rhine-Neckar region joined the Heidelberg-Mannheim Health and Life Sciences Alliance, Heidelberg has made a great leap forward in innovative research, patient care and health economy.

In addition to cross-regional cooperation, transnational cooperation is also an important means to upgrade Heidelberg's technology. In 2013, a cooperation agreement was signed between André Domin (Illinois Institute of Technology, Chicago, United States of America) and Dr. David Baker in the presence of Rita Athas, President of World Business Chicago and Ralf Kindervater, President of BIOPRO Company in Baden-Wurttemberg. Dr. Eckart Würzner, the Mayor of Heidelberg and X Scharff, his counterpart in Palo Alto, signed the Smart Cities Alliance at Heidelberg City Hall to cooperate on economic matters, science and the environment.[17]

Reference experiences

1. Promote industrial diversification to strengthen urban economic resilience

Although Heidelberg initially faced a lack of economic sustainability and resilience due to the composition of its industrial structure, the process of industrial diversification through the integration of creative industries was key to laying the foundations for the emergence of additional industry, creating a more heterogenous and resilient economic base. Despite its position as a traditional tourist city, Heidelberg quickly ushered in economic recovery following the outbreak of COVID-19 due largely to the introduction of a series of emerging industries in recent years. Other cities with varied resource endowments can therefore use the example of Heidelberg as a reference for industrial diversification based on local characteristics and foundations.

2. Understand the value of industrial upgrading through the integration of quaternary sector industry

Heidelberg has seen significant transformation throughout its history and the city has undergone an extensive process of industrial development and diversified industry integration. Where Heidelberg first developed a business conference and exhibition industry based on local assets and cultural heritage, this was followed by the incorporation of biomedicine and other emerging industrial clusters due to the advantages created by science and technology talent from the local universities and industrial bases. The progression in knowledge and technology has strongly influenced life in the city, and has been key in bolstering the capacity and sustainability of Heidelberg's local economy and the wider Rhine-Necklar metropolitan region. In particular, knowledge and innovation among urban and regional industries aims to innovate the spatial compositions of industry, unlock and provision key resources, and drive the advancement of technology and economies to boost the competitiveness of regional industry. Consequently, in an era in which knowledge, technology and innovation are the powerhouses that enhance competition between quaternary industries and therefore, economies, it is important to understand the role of such industry in boosting economic growth and competitiveness.

3. Facilitate the integration of industrial clusters and cross-regional coordinated development

Heidelberg's high-quality industrial clusters and cross-regional coordination strategy help accelerate the city's development. Whilst industrial diversification is a gradual process following the formation of specialized industries, it is necessary to build a cross-regional cooperation network to further accelerate industrial development. According to relational economics, industrial innovation and upgrade is dependent on

17 City of Heidelberg. URL: https://www.heidelberg.de (Accessed: 11/08/2022).

local and external knowledge combined; neither local nor external resources can be overlooked. Cross-regional cooperation in the traditional sense emphasizes the optimal allocation of material factors to promote economic growth. Although the role of technological factors is valued, it emphasizes the importance of technology in driving economic growth in an exogenous way. Cross-regional innovation cooperation states that intellectual capital formed by knowledge spill-over and human capital flow will directly impact the cost of new knowledge capital in a region, thus making technology an endogenous driver of regional economic growth. Facilitating cross-regional innovation cooperation will greatly improve a city's ability to acquire external knowledge resources and establish new knowledge networks so as to improve the city's economic momentum and economic growth potential.

Shanghai, China: Inheritance and Innovation of Century-old Brands in Shanghai's Huangpu District[18]

Case background

The core premise of SDG 8 – promoting inclusive and sustainable economic growth, employment and decent work for all, is essential for sustainable development. SDG 8.2, in particular, emphasizes the importance of achieving higher levels of economic productivity through diversification, technological upgrading and innovation including through a focus on high-value added and labour-intensive sectors. SDG 8.3 promotes development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourages the formalization and growth of micro, small and medium sized enterprises including through access to financial services. Since 2015 in an aim to better reach these targets, the government has released new policies that explore innovation and entrepreneurship. On 11 June 2015, the state council issued *Opinions on Implementing Several Policy Measures to Vigorously Promote Mass Entrepreneurship and Innovation* (GF [2015] No. 32). This noted the need for mass entrepreneurship and innovation as a driver for development, a strategy to enrich people, promote fairness and increase domestic prosperity. This is a significant approach to promoting economic restructuring in which a new engine is introduced to drive momentum for development along an innovation-driven development path, and a major initiative to stabilize growth, expand employment and stimulate the wisdom and creativity of hundreds of millions of people to promote vertical social mobility, equity and justice.

China has a population of more than 1.3 billion and a labour force of over 900 million. Every year there are large numbers of college graduates, rural migrant workers, urban residents and retired military personnel out of work hence the potential to transform human resources into human capital is vast. National overall employment is under pressure and structural contradictions are prominent. Mass entrepreneurship and innovation via transforming government functions, and the development of a service-oriented government

Source: Photo provided by the Shanghai Huangpu District Employment Promotion Centre

Figure 3.18 The Old Brands, New Vitality innovation and entrepreneurship campaign

18 Many thanks to the Huangpu District Human Resources and the Social Security Bureau, the Shanghai Huangpu District Employment Promotion Centre, Tongji University, the Shanghai Society of Sustainability, the Shanghai Public Welfare Entrepreneurship Base, the Shanghai New World Co., Ltd., Yuyuan Inc., the Hengyuanxiang Group, the Shanghai Huaihai Commercial (Group) Co., Ltd., the Shanghai Yimin Commercial Group Co., Ltd., Laofengxiang Company Limited and other relevant departments and old brands for supporting the development of this case.

to create a fair entrepreneurial environment and restructure income distribution have become highly necessary throughout the country. As an international metropolis with a population of 25 million, Shanghai lies at the heart of China's international economic, financial, trade, shipping and technology innovation centres. The Huangpu district, Shanghai's central urban area, has acted as a political and business hub since the establishment of the city with booming economic, financial and trade activities. And with the precipitation of history it contains many 'century-old' brands. The city is now looking at solutions to stimulate the innovative vitality of traditional brands, providing them with new visions in the context of mass entrepreneurship and innovation to ensure they can drive and influence more new entrepreneurs, increase employment and better innovate the entrepreneurial ecology of the area. Through years of exploration and practice, the Huangpu district has accumulated valuable experience in this regard.

Implementation process

On 20 May 2017, the Old Brands, New Vitality innovation and entrepreneurship campaign was launched in the Huangpu district, aiming to stimulate the vitality and power of enterprises, talent and resources. In addition, it aimed to facilitate high-quality development of the economy and society promoting innovation and entrepreneurship. Over several iterations, the influence and service scope of this campaign has grown, and in the past five years many recognized brands have joined in, releasing hundreds of innovation needs. Some teams are from the districts in Shanghai while others are from the Yangtze River Delta or other regions of China. The campaign has generated nearly 1,000 solutions, forming a new innovation and entrepreneurship ecosystem in the district, see Figure 3.18. Within the ecosystem, resources from public companies, renowned enterprises, social service institutions, universities and entrepreneurial organizations interact establishing a distinctive 'double cycle' model of internal and external innovation, improving employment through entrepreneurship and attracting new talent, activities and projects to Huangpu to stimulate the construction of an entrepreneurial urban district and community as shown in Figure 3.19.

According to the Shanghai Special Action Plan to Encourage Entrepreneurship for Employment Promotion (2018—2022) issued by the General Office

Source: Photo provided by the Shanghai Huangpu District Employment Promotion Centre

Figure 3.19 The four components supporting the innovation and entrepreneurship ecosystem in the Huangpu district

of Shanghai Municipal People's Government on 25 June 2018, Shanghai has promoted the Old Brands, New Vitality innovation and entrepreneurship campaign to make local traditional brands more competitive and help them play a leading role in promoting employment. Based on the actual needs of entrepreneurial enterprises, Shanghai has capitalized on policies to establish a cross-regional entrepreneurship service platform and a collaborative innovation network. The process of the Old Brands, New Vitality innovation and entrepreneurship campaign is explained in three steps.

1. Establish specific goals for the revitalization of old brands

In the past five years, the Huangpu district has not only devised specific goals for the revitalization of time-honoured brands, but also optimized and upgraded goals in changing contexts. The initiative set a number of core goals for the first round of the campaign:

- New Partner: the Huangpu district aims to attract and cultivate talent needed for the innovative development of old brands and search for entrepreneurial partners who can develop old brands by releasing demands and sharing resources
- New Skill: the Huangpu district aims to promote the teaching and learning of new skills for development by providing diversified modes of training and practices to support the development of talent with high technical skills for the industry
- New Mission: the Huangpu district aims to improve the entrepreneurial competence of young people and foster their innovative ideas to vitalize old brands by establishing employment and entrepreneurship bases, and practical training bases for the young, setting up venture capital as support
- New Mode: the Huangpu district aims to introduce new marketing approaches, new promotional channels and new packaging to expand the influence of old brands
- New Vision: the Huangpu district aims to demonstrate the long history and cultural charm of old brands by holding themed forums for old brands and establishing interaction platforms between the younger generations and old brands

A number of goals have also been established for the second round of the campaign:

- New Partner+: the Huangpu district aims to establish a characteristic one-stop innovation and entrepreneurship resource centre for old brands by introducing talent and techniques and integrating brand new demands in innovation for old brands, entrepreneurship policies, entrepreneurship activities and innovative strengths within Shanghai and the Yangtze River Delta
- New Skill+: the Huangpu district aims to cultivate talent and make them more competitive by offering practical support for improving young people's entrepreneurial abilities and old brands' transformational capacity by focusing on new skills and innovation and entrepreneurship capacities
- New Mission+: the Huangpu district aims to promote collaboration and complete the public entrepreneurship bases of old brands. Old brands are encouraged to play a leading role in the collaboration to guide young people in entrepreneurship
- New Mode+: the Huangpu district aims to attract talent and creative strengths. The district promotes an in-depth integration of old brands' innovations and the industry-university-research cooperation and introduces more comprehensive innovative resources to facilitate external transformations and encourage and support the internal innovations of old brands
- New Vision+: the Huangpu district aims to promote cooperation and sharing. The district establishes platforms for communication between old brands and between these brands and young talent who engage in entrepreneurship, and encourages cooperation to make innovative ideas practical, bringing vitality for regional development

2. Encourage entrepreneurship-driven employment through special actions and initiatives

Within Huangpu there has been a clear value to advocate mass entrepreneurship and innovation, and to further cultivate and optimize it into an entrepreneurial urban district. Optimization of the entrepreneurial environment, stimulating entrepreneurial vitality, integrating resources and supporting more young people in launching start-up businesses in Huangpu, was also key in the district. To achieve this, the Human Resources and Social Security Bureau, the Finance Bureau and the Education Bureau of Huangpu district jointly formulated implementation guidelines to facilitate new entrepreneurship.[19] The guidelines cover a series of subsidies: ① Subsidies in lump sums for first-time start-ups; ② Rent for entrepreneurship space (stations); ③ Interest for small-sum guaranteed loans; ④ Social insurance premiums; ⑤ Special subsidies for encouraging entrepreneurship and those for employment, entrepreneurship and probation; ⑥ Subsidies for purchasing entrepreneurial services and entrepreneurial guidance expert service, and those non-profitable entrepreneurship parks and nurseries; and ⑦ Subsidies dedicated for the Old Brands, New Vitality innovation and entrepreneurship campaign. These measures aim to encourage local distinguished enterprises to actively participate in the campaign, and award certificates to enterprises, groups and individuals that have made outstanding performances or contributions to the plan. To support development, a subsidy of RMB 50,000 to RMB 100,000 is available for enterprises whose innovative solutions are adopted and realized. Upon passing the annual performance evaluation, key enterprises identified as public entrepreneurship training bases, can be provided an annual operational expense subsidy of USD 27,500 ~ 70,000 (RMB 200,000 ~ 500,000) based on grading to utilize entrepreneurial resources and organizations including their own premises, equipment and technology. On this basis, the Huangpu district is also exploring the need for an announcement mechanism for traditional brands, establishing technology and skills cooperation with related universities and secondary vocational schools. It integrates strategies to promote innovation and entrepreneurship, whilst building the innovation and entrepreneurship public benefit platform for traditional brands to strengthen the connection between the regional economy and entrepreneurship, employment, talent, skills and other specific initiatives so as to inject new blood to such brands and achieve entrepreneurship-driven employment (see Figure 3.20).

Source: Photo provided by the Shanghai Huangpu District Employment Promotion Centre

Figure 3.20 The Huangpu district Old Brands, New Vitality innovation challenge

19 Huangpu District People's Government. Opinions on Encouraging Entrepreneurship for Employment Promotion in Huangpu District (Valid by December 31, 2022).

3. Unify actions and launch three Old Brands, New Vitality innovation camps

The Huangpu district provides different types of innovation camps for entrepreneurs at different stages such as those for start-ups as well as those in growth phases with accelerated operation. The start-up camp fuses innovative ideas to enhance entrepreneurial capabilities and is dedicated to serving students at both the Huangpu Innovation College and additional colleges/universities as well as secondary vocational colleges and entrepreneurs through visits to distinguished brands, lectures and other training.

The growth camp leverages practical training platforms to propel growth among entrepreneurs, and relies on public entrepreneurship training from distinguished brands to provide broader practical training, a more diversified and practical experience, and richer training resources. The acceleration camp enhances demand and enables innovation cooperation. It contains a series of modules including those on: ① Old brands' demand publicity; ② Project evaluation and screening; ③ Industry training and on-site visits to release the innovation demands of old brands; ④ Organizing directional industry training for old brands; ⑤ Customizing demand matching for old brands; and ⑥ Contributing to the cooperation between old brand enterprises and entrepreneurial organizations. Following the onset of COVID-19 in 2020 under the guidance of the Human Resources and Social Security Bureau of Huangpu district, the Huangpu district Employment Promotion Centre restarted the Old Brands, New Vitality campaign (see Figure 3.21), in an attempt to grasp prevention and control of the epidemic and limit the issues of small and medium-sized enterprises. They organized the Innovation Acceleration Camp for Huangpu Old Brands 2020 to boost the innovation of old brands and provide more opportunities for small and medium-sized enterprises to cooperate with time-honoured companies, in which a firm balance was found between epidemic control and support for small and medium-sized enterprises.

Source: Photo provided by the Shanghai Huangpu District Employment Promotion Centre

Figure 3.21 Young entrepreneurs involved in the Old Brands, New Vitality innovation and entrepreneurship campaign

Reference experiences

1. Promote interconnected mechanisms to stimulate creative ideas for time-honoured brands

Shanghai's time-honoured brands are representative of excellent national brands and traditional business culture, embodying the craftsmanship and culture of the nation. In light of a broad consumer base, they possess significant economic and cultural value. With a high concentration in the Huangpu district, the district undertakes major responsibilities to ensure the effective revitalization of these key enterprises. The establishment of a platform for dialogue with young people; matching the needs of time-honoured enterprises to youth entrepreneurship; expanding the social brand effect of time-honoured enterprises; developing teams of mentors from time-honoured enterprises; and establishing public entrepreneurship training bases named after old brands have all been highly significant. Importantly, these initiatives are interlocked with the corresponding mechanism design which ensures innovative ideas can be implemented at pace.

2. Enhance the quality of public services to accelerate the incubation and empowerment of old brands

The Huangpu district accommodates nearly half of the oldest brands in Shanghai. To provide higher-quality public innovation services in addition to the public practical training base for old brands, the district has built a series of bases including those for business incubation demonstration, entrepreneurial apprenticeships and public practical training in addition to investment service platforms and other types of entrepreneurial carriers and service institutions. By the end of 2020, the district had developed 14 business incubation demonstration bases which are now working with over 1,200 businesses and have generated over 10,000 jobs. Serving the need for public entrepreneurial services, the business incubation demonstration bases, practical training bases for old brands, and other entrepreneurial service institutions are increasingly important as a means to gather talent and drive entrepreneurship-based employment. These institutions release their respective functions and accurately serve entrepreneurial groups at different stages of their development, and promote the transformation and implementation of entrepreneurial results. They serve to jointly construct an ecosystem in Huangpu that incubates and empowers old brands through innovation.

3. Focus on the double cycle of innovation and entrepreneurship to iterate Huangpu brands

In 2020, in Huangpu's new three-year plan, the district released the 'five new goals' for the Old Brands, New Vitality innovation and entrepreneurship campaign: new partners, skills, missions, models and vision. To achieve these new goals, Huangpu leverages scientific research and evaluation to introduce and cultivate talent, lead and coordinate, gather intelligence to form momentum and share for co-construction. The campaign not only boosted the innovation 'inner cycle' of old brands but more importantly created an 'inner cycle' mode for the overall innovation and entrepreneurship effectiveness of the region. The well-established innovation double-cycle mode adopts the unique characteristics of Huangpu to innovate the entrepreneurship across all processes and fields of regional development, and effectively advance the quality, efficiency and impetus of the public entrepreneurial service system, therefore ensuring that century-old brands are passed down in innovation.

Policy Suggestions

Create Business Environments that Encourage the Agglomeration of Enterprises and Capital

Cities, as the core of business activity, are increasingly important in terms of inter-city cooperation. This requires a better urban environment suitable for enterprise development to promote long-term economic growth. New legislation and regulatory mechanisms that understand the business environment can simplify the process of incorporation to bring about an influx of new business, investment and capital. To improve economic prosperity, the government should introduce business procedures, reduce red tape, ensure consistency in policy making, create an approachable government image and nurture

businesses in the development process.

Integrate Spaces and Mechanisms for Efficient Community-industry Linkage

In the knowledge economy and era of innovation, the goal of university space planning is changing. Campus spaces should today be integrated, open, innovative and ecosystem-based for better collaboration. More attention should be paid to the research-investment-entrepreneurship ecosystem form based on university talent, and university campuses should focus on creation and manufacturing instead of research and innovation to interact more frequently with surrounding industrial spaces while local commercialization of achievements is also emphasized. It is necessary to actively change the closed, conservative patterns that dominate vehicular traffic into one in which campus environments prioritize pedestrians. Creating an environment that attracts significant R&D investment in the campus context will be conducive to future investments, local industry innovation and upgrades, and local entrepreneurs. Transforming communities into vibrant, integrated and attractive zones ensures a closer relationship between campus, community and urban industrial innovation.

Leverage Knowledge and Technology to Accelerate Industrial Innovation and Upgrading

Knowledge and technology, when used to move to an urban economy, will influence urban life so as to achieve quality sustainable development of a city. A city should first use the local natural environment and cultural heritage to develop cultural and creative industries. Following this, a city should prioritize its local science and technology talent and its industry foundation to form emerging industry clusters. The knowledge innovation of regional industries aims to innovate regional industrial spatial forms, resource endowments, various economic and non-economic factors, and technological and non-technological factors to enhance the competitiveness of each regional industry and the regional industries in general. In an era where global competition is increasingly fierce, knowledge innovation is the powerhouse driving regional industrial development.

Share Internal and External Resources to Drive Cross-regional Coordinated Development

After the local specialized industries are formed, it is necessary to build a cross-regional cooperation network to further improve the level of industrial development. According to relational economics, industrial innovation and upgrading is dependent on combined local and external knowledge: neither local resources nor external resources can be overlooked. Cross-regional innovation cooperation states that intellectual capital formed by knowledge spill over and human capital flow will directly impact the cost of new knowledge capital in a region thus making technology an endogenous driver of regional economic growth. Developing cross-regional innovation cooperation will greatly improve a city's ability to acquire external knowledge resources and establish new knowledge networks so as to improve the city's economic momentum and level of sustainable development.

Chapter 4

Environment

Introduction[1]

Where unsustainable urbanization has gained pace in many parts of the world, surging populations in combination with climate change, more frequent and intense natural disasters, pollution and the continued deterioration of natural environments have presented profound challenges on urban life. Cities and human settlements are braced to face these impacts head-on but significant transformations are required in regard to the functionality and operability of cities. Urban development is now pressed to promote a more symbiotic and harmonious relationship with natural systems, embedding environmental sustainability into urban planning and design. Proactive urban environmental governance will be critical to respond to the issues of climate change and environmental deterioration, and smart policy is now required to tackle the complicated socio-ecological issues that are emerging in cities.

As clusters of intensive industrialization and human activity, cities are the primary emitters of waste and pollution, disproportionately contributing as much as 70 percent of the world's greenhouse gas (GHG) emissions whilst occupying just 2 percent of the global land area.[2] Exacerbating this issue, the capacity of vegetation and the oceans to absorb harmful pollution is reducing. Accelerating the transition to low-carbon pathways is therefore key, and cities must initiate bold action to eradicate harmful pollutants from urban activity. The integration of blue-green infrastructure has long been a movement in cities and urban planning to tackle these issues; however, the adequate application of greening measures still remains lacklustre in many cases globally. Innovative strategies to re-naturalize and green the city will serve as key factors in urban planning and design to achieve sustainable urbanization, in particular to help reduce pollution but also to bridge the gap between urban inhabitants and nature, enhance the quality and experience of the urban landscape, support climate change adaptation and mitigation, and replenish natural ecosystems and biodiversity. Cities and urban practitioners are thus encouraged to re-imagine the city in line with these principles, understanding green and blue resources as multi-functional infrastructure that offers a diverse range of ecosystem services across social, economic and environmental dimensions of development.

Cities are equally well positioned to pioneer the movement towards integrating circular systems that encourage the recycling and reuse of materials to minimize waste and alleviate the associated costs on the environment. Increasing traction on the development of 'reusable cities' that incorporate circular design approaches into urban regeneration through material reuse in areas such as construction and building processes, and value chains is thus increasingly important. It is important to note that in this sense the principle of circularity is implicitly connected with climate neutrality and constitutes a key element in comprehensive decarbonization strategies. Where the impact of climate change is now felt stronger than ever before, it is the responsibility of all cities to integrate DRR measures into urban development plans. The relationship between poor settlement planning and heightened risk exposure is clear whereby urban practitioners are challenged to ensure hazard mitigation on a city-wide scale, ensuring the protection of those communities at greatest risk, leaving no one behind.

This chapter will interpret practices and experiences relating to urban environmental development from various dimensions. Firstly, in the case of Weihei, China, focus is given on how the city has implemented a series of urban greening measures including pocket parks and coastal greenways, as well as aquaculture pond rehabilitation to build an 'exquisite city' that integrates environmental sustainability in its core. Secondly, the case of Minawao, Cameroon

1 This chapter was compiled through the joint efforts of UN-Habitat, Tongji University, the Shanghai Academy of Social Sciences, the Shanghai Society of Sustainability and other institutions and departments. We would like to express our gratitude to the cities included for their support and provision of information, and to the experts and scholars whose research provided important inspiration and references. The Dr. Chen Haiyun team from Tongji University is the lead author of this paper.

2 United Nations. URL: https://www.un.org/en/chronicle/article/addressing-sustainable-urbanization-challenge (2012) (Accessed: 11/09/2022).

highlights how the principles of greening and circular resource use in the Minawao refugee camp have helped to maintain a balance between protection of the local ecological environment and promoting sustainable livelihoods, improving the community's ecological resilience and long-term prosperity. The case of Yokohama in Japan focuses on the city's piloting of blue marine resource use and carbon fixation to conduct experimentation into achieving carbon neutrality, as well as the city's use of an innovative carbon credit mechanism and carbon offset trials. Lastly, the case of Dar es Salaam in Tanzania exemplifies the value of Big Data in which, via the Rumani Huria project community-driven flood mapping, vulnerability assessment and early warning system integration has helped to bolster resilience in the city's most vulnerable communities.

Case Studies

Weihai, China: Building an Exquisite Green City

Case background[3]

From many years, multiple cities in China have been exploring paths towards sustainable urban planning and green development. A key objective of city managers has been to achieve sustainable urban social and economic development alongside the protection of blue sea and sky, green mountains and clear waters offering urban residents a sense of satisfaction and happiness. This aligns with the principle that a city should not only consist of cold, tall reinforced concrete buildings but also greenness and warmth imbuing residents with a sense of identity and belonging. Situated in northern China, Weihai city has, through years of development, become an exquisite city of great warmth. Weihai is located at the eastern end of the Shandong peninsula. With the Yellow Sea to the north, east and south the peninsula covers 5,800 km^2 spanning 135 km from east to west and 81 km north to south, with a total of 985.9 km of coastline and a population close to 3 million.

Multiple factors are involved in the construction of an exquisite city; however, this section will focus on greenness and warmth. During his visit to Weihai in 2018, Chinese President Xi Jinping proposed that Weihai should aim to develop into an exquisite city, advocating for the city's sustainable development. Over the past five years, the exquisite city concept has guided all aspects of Weihai's politics, economy, culture, society and ecological civilization at the institutional design level, as the city has strived to manage the relationships between its construction as an exquisite city, economic development, rural revitalization, ecological environment and maritime development, visibility and other important areas. At the implementation level, Weihai has stressed the importance of appropriate planning, meticulous design and construction, precision in management and services, and smart growth in order to improve the city's quality and content, creating a model city. In 2020, the city promulgated the 'Regulations on building an exquisite city in Weihai' which were designed to support and promote the construction and development of a city of the highest-quality and improve the quality of life for urban residents.

Weihai has valued the creation of distinctive urban characteristics and the appearance of that of an 'exquisite human habitat between magnificent mountains and sea' to cater for its new era. Refining the six elements of its cityscape, mountains, water, sea, city, bay and islands, it has maintained excellent natural spaces, particularly between the mountains and the sea, providing citizens with a green liveable city that they can explore, feel and experience, as shown in Figure 4.1. Since beginning its construction

3 Many thanks to the Weihai Refined City Construction Office, the Bureau of Commerce, the Marine Development Bureau, the Ecological Environment Bureau, Tongji University, the Shanghai Academy of Social Sciences, the Shanghai Society for Sustainable Development, and other departments for their strong support on this case.

Source: Weihai Tourism Development Commission. URL: http://wlj.weihai.gov.cn/ (Accessed: 20/06/2022)

Figure 4.1 Weihai lighthouse and surrounding high-quality green space

as an exquisite city, Weihai had established itself as the first pilot city of the Beautiful Cities programme, and in 2020 and 2021 was awarded the title of China's Happiest City. As its urban functions have improved, the happiness and satisfaction of local inhabitants have also increased. During its construction, Weihai carried out a series of innovative explorations thereby accumulating a unique 'Weihai experience' of referential significance.

Implementation process

Weihai has developed many innovative practices and accumulated valuable experience across the fields of social, economic, environmental, cultural development and urban governance. Via a strategy of 'urban greening' Weihai has integrated green infrastructure to create a sense of warmth in the city, increasing not only the attractiveness of the landscape but its sustainability and functionality.

1. Connect residents and green space through the use of pocket parks

The term 'small street garden' or 'pocket park' refers to green spaces created on small or irregularly-shaped independent plots of land. Offering functional space for recreation, these parks are highly accessible to local residents. Scattered around the city, pocket parks not only enhance the urban visual appearance but add interest to the life of Weihei's inhabitants and are thus highly popular features. The parks play an important role in enriching the quality of life with healthy leisure spaces, enhancing the urban environment, improving the functionality of urban spaces and promoting urban restoration. Weihai adopted a garden design concept for pocket parks, envisioning 'blooming flowers in three seasons and bright colours in all four', alongside the concept of creating ecological sponges which enable water seepage, storage, retention, purification, use and discharge. In efforts to harmonize design with local conditions, the city has sought to better integrate pocket parks by promoting a variety of forms, reasonable layouts, useful functionality, ecological beauty, safety and comfort in order to emphasize the characteristics of 'exquisite city, happy Weihai' into its urban landscape(see Figure 4.2).

Source: Weihai Daily. URL: https://www.whnews.cn/ (2021) (Accessed: 21/06/2022)

Figure 4.2 Zhongxing Youyuan pocket park in Weihai

The construction of pocket parks commenced in 2017. In March of that year, the Municipal Bureau of Housing and Urban-Rural Development together with the Municipal Bureau of Finance issued the Opinions on Strengthening the Construction and Management of Urban Small Street Gardens (WZJTZ [2017] No. 21). Subsequently in December, the two bureaus jointly issued the Regulations on Subsidies for Excellent Small Street Garden Construction Projects in Weihai (WCY [2017] No. 98). These two documents require that bodies constructing 'excellent small street gardens' involving large investments, high technical capacity and significant ecological benefit should be subsidized appropriately. The construction and management standards for Weihai's small street gardens includes pocket parks. In 2018 and 2019, the standards for planning and design, engineering construction, plant configuration, service facilities and maintenance management were further refined, and Construction Standards and Scoring Standards for Exquisite Pocket

Parks formulated. The 2020 technical guidelines for the construction and management of Weihai's small street gardens offers a guide for the construction of pocket parks in the city (see Table 4.1) Today, Weihai's

Table 4.1 The overall design rules for Weihai's small street gardens

Clause	Content
Basic Requirements	1. Site selection of small street gardens should conform to requirements for land use planning, including overall urban and rural planning, and for green space system planning in order to ensure that the relationship with urban construction is properly handled 2. The designs of small street gardens should be based on investigation and evaluation of the current situation and the surrounding environment, coordinate with the surrounding cityscape and functions, and take the protection and development of unique local culture and landscapes into account 3. Gardens' functional zoning, landscape layout, path system, planting design, architecture, ornaments, engineering pipelines and other features should be designed as a whole in accordance with varying construction requirements 4. The designs of small street gardens should be people-oriented, functional, safe, comfortable, ecological and beautiful, and offer good spaces for activities, recreation and viewing 5. The main entrances and exits, main roads, important landscape nodes and buildings of small street gardens should feature accessible design and accessible facilities, and should comply with the provisions of current national standard Codes for Accessibility Design (GB 50763)
Site Handling	1. The design of small street gardens should be based on analysis of the local environment, surrounding businesses, users, natural environmental conditions, historical and cultural conditions, traffic conditions and utilities around the proposed site. The current topography, waterways, buildings, vegetation resources, above-ground or underground pipelines and engineering facilities within the design scope should be investigated, evaluated, dealt with and records filed 2. Land used for a small street garden should not pose a risk of potential pollution. Where a pollution risk could exist, safe and appropriate technical measures should be taken to eliminate it in accordance with the results of the environmental impact assessment 3. Valuable garden buildings or garden ornaments (if any) within the design scope should be protected and integrated into the landscape design of small street gardens 4. Ancient/famous trees (if any) within the design scope of small street gardens should not be cut down or transplanted, and protective measures should be taken. Pre-existing healthy trees, shrubs and creepers should be retained and utilized as much as is reasonably possible 5. For designs near existing underground pipelines or engineering facilities, protection measures and construction requirements relating to these pre-existing objects should be proposed
Overall Layout	1. The overall layout should coordinate the current conditions and characteristics of the site with the functions, facilities and landscape of the small street garden 2. Functional zones should be reasonably divided, with the size and layout of each zone determined based upon the scale of the site, functional requirements and landscape characteristics 3. Site topography should be reasonable in form and have a basis in functional requirements such as landscaping, spatial organization, and rainwater control and utilization 4. The layout of garden path systems should determine the locations and sizes of entrances/exits, the routes and hierarchy of paths, and locations and forms of paved areas in accordance with the garden's scale, zoning and management needs. Garden paths and paved areas should be coordinated with the design theme in style and function 5. Planting design and plant configuration should be determined taking into account site conditions, landscape conceptions, functional requirements and local residents' viewing habits. Local plants should dominate in adherence with the concept of 'blooming flowers in three seasons, bright colours in all four' to create plant landscapes with diverse community structures and richly varied views 6. The style, location, volume and spatial layout of garden architecture and garden ornaments, as well as their coordination with garden paths and paved areas, should be determined in accordance with functionality, landscaping requirements and municipal utility conditions 7. Electrical, water supply, drainage and communication engineering installations, along with other supporting facilities of small street gardens, should be visually beautified while meeting technical specifications, reducing visual pollution 8. Small street gardens' emergency evacuation functions and arrangements for the corresponding facilities should be determined based on Weihai's comprehensive disaster prevention and reduction planning in terms of scale and safety conditions

245 pocket parks have greatly reduced the distance between local residents and green spaces.

2. Returning aquaculture ponds to the sea: coastal zone environmental restoration and coastal footpath construction

Weihai has carried out a phased, zone-based comprehensive renovation and restoration of its shoreline in recent years, and has completed the expropriation and relocation of coastal aquaculture ponds, the ecological restoration of shorelines, and the construction and improvement of coastal footpaths. A number of key areas have been renovated and restored including the Shuangdao Bay Coastal Zone Renovation and Restoration Project (in which approximately 7.3 km of aquaculture pond cofferdams were demolished and approximately 1.5 km of ecological revetments newly built); the Shuangdao Bay Blue Bay Project (in which approximately 3 km of shoreline has been restored, 100,000 m^3 of marine waste cleared and 250,000 m^3 of aquaculture ponds demolished); as well as the Rongcheng Chengshan Town Malan Bay Shoreline Renovation and Restoration Project (where 4.4 km of revetments have been newly built, 15,000,000 m^3 of earthworks and waste cleared, 76,000 m^3 of structures demolished, 36,000 m^2 of beach restored and 119,000 m^2 of vegetation restored). In addition, the Rushan Langnuankou-Heshangdong coastal zone Protection and Restoration Project has restored 3 km of sandy shore and 1.4 km of reef shore, and constructed 158 m of ecological seawall, whilst a total of 14 km of coastline along the eastern section of the Binhai New City was comprehensively renovated and restored achieving the goal of marine ecological civilization construction: 'clear water, green shores, clean beaches and beautiful bays'. In the western urban district from Yuehai Park to Haibu Road, a 20 km stretch of coastal footpath has been constructed offering the public a continuous, green space that serves as a shared leisure venue whilst promoting ecological health.

Following the reconnection of aquaculture ponds to the sea, the city has also worked to reconnect local citizens and urban life to the sea, actively improving public service facilities in coastal green spaces, constructing footpaths along the shoreline, and creating coastal walking experience zones and routes with natural scenery designed to allow citizens the experience of 'facing the sea, feeling spring come and flowers blossom'. Details attest to the degree of effort that the city has exerted in its incorporation of these design concepts into every corner, project and action during implementation(see Figure 4.3). Huancui district's Haiyuan Park renovation project, the Oil Painting Town Fashion Sports Park renovation project, the Huanhai road sea viewing platform and the Banyue Bay landscape improvement project have all been completed in the last two years.

Source: Weihai Tourism Development Commission

Figure 4.3 Weihai Park

A number of footpath renovation and improvement projects have also been completed including those in Shuangdao Bay, Gaoqu District (2.7 km of footpath); Rongcheng City's Jinshiwan Art Park and Hutoujiao (0.51 km of footpath); Xiaowudui rental vehicle (RV) Camp (1.6 km of footpath/greenway); Chunfeng Coast to Wanguocheng South Line (1.2 km of greenway); Rongchengwan (9.91 km of footpath); and Rongli Road (5.59 km of footpath) totalling 18.81 km of new footpaths and greenways. In addition, 2.05 km of footpaths along Chaoyanggang bridge, the coastal park and the seaport have been developed using a permeable concrete construction, as well as the foundations of a 1.5 km greenway from Shuangbangzi to Hekou Wharf. In the Xiaowudui RV Camp area, facilities such as the Diamond Wedding Square, beach tents, an infinity swimming pool, 32 RV yards and 4,500 m^2 of ecological parking lots have been integrated.

Reference experiences

1. Understand the value of Weihei's three-in-one (legal, indicator index and standards systems) top-level design in the creation of an 'exquisite city'

Legal system developments and improvements played a key role in Weihei's transformation. Since obtaining local legislative power in 2015, Weihai has formulated nine sets of local laws and regulations including four related to urban and ecological civilization construction predominantly involving cityscape protection, water source and coastal zone protection, and hazardous waste management. In 2018, the city initiated the formulation of China's first regulations for an exquisite city – Regulations on Construction of an Exquisite City in Weihai. The Regulations came into force in November 2020 and set out general rules for urban construction from the perspective of urban planning and design, construction management and service guarantees, providing a legal basis for urban examination and an evaluation system, guiding the development of the city's vision. The development of an outline indicator index system also served as a key mechanism in driving Weihei's green development. In 2019, the city issued a three-year action plan for exquisite city construction, laying out a roadmap in the form of 385 exquisite city construction projects and 68 annual key demonstration projects. Refinements made to the standard system and pilot planning also aided design in Weihei.

The Weihai Exquisite City Evaluation Index System sets out 50 indexes covering 5 themes (the ecological environment, urban characteristics, public services, development momentum and social governance) along with target values for 2025 and 2035. The document provides a quantified answer to the question, 'What makes an exquisite city?', rendering every work programme quantifiable and implementable. A series of technical guidelines have been compiled for each stage of urban planning and construction management including comprehensive road renovation, greenway construction, construction and management of small street gardens, and landscaping maintenance. Stricter and more detailed than the national norms, these guidelines are ensuring refined, meticulous execution at all stages in the entire urban construction and management process. Preparation of the city's first 'physical examination' report which includes 85 indexes covering 8 themes (ecological livability, health and comfort, safety and resilience, transportation convenience, cityscape features, neatness and orderliness, diversity and tolerance, and vitality of innovation) was entrusted to a professional third-party team. The underlying problems detected have not only become the priorities of the Housing and Urban-Rural Development Department but were also reported to the Natural Resources, Planning and other departments in order to guide improvements in the relevant top-level design.

2. Focus on content and quality and ensure development in line with sustainable planning principles

In the construction of an exquisite city, Weihai has attached great importance to the improvement of both content and quality, advocating intensive land use and creating a more compact, efficient and sustainable urban model, increasing the dynamism, liveability and recognition of the city. Based on the blueprint 'mountains in the city, city in the ocean', the city has aimed to construct Weihai as a 'big scenic area' without boundaries. First, it promoted full urban design coverage, and as early as 2017 the city began to explore state-of-the-art urban design methods, transforming two-dimensional urban design data provided by the central city's 16 management areas and 63 management units into three-dimensional models, achieving an integrated compilation of urban planning. Designing each area and building from the perspective of an artist, the city has carefully created elements such as themed streets, landscaping, landscape lighting, street interfaces and urban sculptures, and initiated construction of the Seaport Park, Jinxianding Park and coastal footpaths in order to create Weihai's distinctive 'painting style' coastal landscape.

Weihai has continuously carried out comprehensive improvement of the environment along its 'three lines' – the mountains, coast and railway. Altogether, 141 km of coastal ecological footpaths have been completed incorporating events, consumption and other functions while maximizing the protection of beaches, reefs, pine forests and other ecological components, ensuring they are kept in a natural state with minimal traces

of artificiality. A 22.6 km greening project along the mountain view line has been completed using diversified varieties, colours and layers of plants matching and coordinating with trees, shrubs, flowers and lawns to ensure a natural appearance. In addition, reflecting the city's adherence to green, low-carbon development, sponge city construction requirements were incorporated into project construction stages including construction drawing design and review in projects including old residential area renovations and pocket parks construction. Over 25 percent of urban built-up areas have achieved relevant planning and design values, fulfilling the goal of 'no ponding in light rain, no waterlogging in heavy rain'. The city integrated green, low-carbon concepts in the development of its construction industry developing safe, energy-efficient, green and prefabricated buildings, and promoted the application of prefabricated concrete and other environmentally friendly materials as well as green building standards in all new buildings in the city planning area. This resulted in Weihei's inclusion in the first batch of green city demonstration projects of China's Ministry of Housing and Urban-Rural Development, and recognition as a model green city.

3. Understand the value of Weihei's 'exquisite governance' model based on operated measures and innovation

Weihai was the first national-level Sanitary City, and a recipient of honourary awards such as the UN-Habitat Scroll of Honour Award and the China Environmental Protection Award. In addition, it was approved as the only pilot 'Waste-Free City' and 'Beautiful City' in the Shandong province. Over the years, Weihai has prioritized ecology in regard to its economic and social development, cherishing the city's 'blue and green' backdrop. The city has long adhered to a system of 'four maximums': the strictest environmental supervision; most active ecological construction and intensive resource utilization; and the most stringent responsibility assessment. With dozens of berths in excess of 10,000 tons and many deep-water ports, Weihai is well-suited to petrochemical, cement and other port-vicinity industries, and has thus attracted many investors; however, none were accepted. In addition to implementing a strict access policy to maintain environmental integrity, Weihai has been earnestly advancing mountain restoration, river management, river and reservoir greening and other environmental action plans, with ecological civilization construction expenditure accounting for 17.3 percent of its general public budget expenditure in recent years. The city's environmental air quality has reached national level Ⅱ standards for five consecutive years, and 100 percent of its primary drinking water sources and water located in environmental functional zones in immediate offshore areas is compliant with water quality standards. The city has also promoted the ecologicalization of industry, pioneering new business models including ecology and leisure tourism and ecology and cultural creativity to drive average annual tourist growth numbers of 9.3 percent and total tourism revenue of 12.2 percent. In order to further the modernization of Weihei's urban governance capacity and provide citizens with more considerate and satisfactory public services, the city has implemented an innovative mode of social governance incorporating aspects such as grid management, community autonomy, and credit-based measures, ensuring the application of modern ideas and scientific methods to enhance the quality of urban governance. Subject to rapidly increasing digitalization, Weihai has developed the integration of various e-government platforms, construct efficient, convenient and satisfactory service platforms, collect public opinions from multiple channels, create internal linkages between government organizations and handle feedback from individual departments.

Landscape Upgrading of the East China University of Political Science and Law: a Century-old Campus Embracing Waterfront Greenspace[4]

The Huangpu River and the Suzhou Creek are the mother rivers of Shanghai and have had a presence in the city since it was opened to the outside world as a commercial port reflecting the natural ecological landscape of the city. In recent years, the municipal government has committed to waterfront construction as well as water quality management, reconnecting riverside walkways with historic buildings and developing a greener, more culturally rich waterfront for citizens.

Located next to the Suzhou Creek, the East China University of Political Science and Law (ECUPL) changning campus landscape upgrading project has marked an excellent example of this effort. This century-old campus, which used to be closed to the public, is surrounded by the Suzhou Creek on a wedge-shaped peninsula (see Figure 4.4). In 2021, the campus was subject to a major renovation in which old school buildings were refurbished with their historical features carefully preserved. The campus then removed its fences and was opened to the public, fully integrating itself into the surrounding green spaces along the creek, allowing local people to enjoy and benefit from

Source: East China University of Political Science and Law

Figure 4.4 Aerial view of ECUPL's changing campus landscape

4 This column was written by experts from the Shanghai Library (Shanghai Institute of Scientific and Technical Information) with the support of East China University of Political Science and Law (ECUPL) by Guo Weilu, Secretary of the Party Committee; Ye Qing, President; Zhou Lizhi, Vice president; and the planning and promotion team of the Changning Campus.

the natural ecology. A number of key measures were undertaken:

Firstly, the area along the river was set back and the campus was integrated into the waterfront space. Prior to renovation, the ECUPL waterside trail could only accommodate two people side by side, and at its widest the trail was less than 2 m, separated from the campus by a fence. Following renovation, the fences and 18 temporary buildings were demolished and the public riverside area was opened and extended at its widest point to approximately 98 m, providing public access to the historic buildings for the first time.

Secondly, trail greenspace was optimized to create an ecological space with clean water and trees: the total green area on the 900 m long shoreline now reaches 6,600 m^2. These green habitats were carefully designed. Any shrubs that intruded or affected the landscape of historical buildings were completely removed. Suitable flowers and trees were then planted along the entirety of the waterfront, including the trail, with consideration given to diversity. Indigenous plants more acclimatized to the local environment were also introduced along with plants in harmony with the architectural landscapes to improve the appeal of the space.

Building facades were repaired ensuring their historical features were preserved to maintain their traditional and low-carbon vision. In this case, the public waterfront space has the distinct local advantage of being a historical building complex at ECUPL – a feature that has been highlighted by paying close attention to the historical features of the buildings and structures. The construction team collected an extensive range of historical photos and materials in an effort to restore the original appearance of the buildings while capitalizing on the know-how of traditional, low-carbon architectural technologies. One example is that of the Gezhi building which contained original clear brick walls covered with less breathable red and grey coatings that prevented the original brick from breathing. Experts from the Shanghai Cultural Relics Bureau were able to guide the construction team in their adoption of a series of traditional processes that included paint removal, cleaning, polishing, repairing, jointing, pointing, strengthening and waterproofing to repair the surface of the wall, helping it regain its smooth, naturally breathable qualities. The construction team also discovered circular vent holes in the lower part of the Gezhi building which had managed to keep the building dry for a hundred years despite its location on the riverside, and renovations have further protected the elevated space to ensure the floor remains dry for even longer. These buildings perfectly illustrate the long human history and traditional local wisdom as it is expressed in architectural technologies that deserve to be continued.

This case highlights the power of integration, offering a green and open public space suitable for walking as well as connecting the campus with the surrounding communities. In terms of cultural inheritance, the local historical continuity is maintained by combining historic relics and modern restoration technologies. This optimized ecological environment with profound humanistic characteristics makes Shanghai a strong model for sustainable development.

Minawao, Cameroon: Creating an Environmentally Sustainable and Resilient Green Refugee Camp[5]

Case background

As global temperatures continue to rise, changes to socio-ecological systems are becoming increasingly pronounced intensifying the impact on both humans and the natural world. Coinciding with an unprecedented surge in human displacement, many migrants are today forced to inhabit some of the most inhospitable environments around the world, faced with extreme conditions in which cultivating sustainable livelihoods is near impossible. As much as 86 percent of the world's refugees are fleeing to countries where

5 This case was co-authored by the UN-Habitat experts and the team of Dr. Chen Haiyun from Tongji University.

resources are already scarce.[6] As this trend intensifies, the sustainable planning and management of refugee communities will be critical to increase livelihood opportunities for migrants and displaced individuals. Given the socio-spatial negotiations between the humanitarian agenda and refugees, refugee camps exist under an increasingly permanent humanitarian governance model whilst their inhabitants also organize themselves in ways that create space to sustain a livelihood within their communities, making them important forms of urban life. Refugee communities are therefore playing an increasingly important role in urbanization processes, highlighting their status as key components of sustainable urban development.

Since the Boko Haram insurgency in Nigeria in 2014, tens of thousands of refugees have fled the border to Cameroon to escape the conflict and extreme violence. The Minawao refugee camp opened in July 2013 in northern Cameroon, was first designed to accommodate 15,000 refugees; however, with a continuous influx of new refugees, the camp population has continued to grow receiving an average of 692 new arrivals and more than 287 births per month. As of January 2021, there were a total of 69,622 Nigerian refugees (of which 61 percent were under 18 years old, and 54 percent were women and girls).[7] Situated in Cameroon's far north, an arid region scarce in natural resources, the impact of climate change in Minawao has already been pronounced and the emergence of the rapidly expanding refugee community has only exacerbated the already pressing environmental challenges. Accelerated deforestation and desertification have brought about severe water shortages and damage to critical pasturelands. This ecological deterioration has led to inter-community conflict where there is a heavy reliance on local wood for energy with many families forced to sell the rations provided by the United Nations because wood grew so scarce it threatened their livelihoods.

To address these challenges, in 2017 the United Nations High Commissioner for Refugees (UNHCR) in cooperation with the Land Life Company and the support of the Dutch National Postcode Lottery, planned to transform the Minawao camp into a green, ecologically-sustainable community as part of a larger reforestation project. The cooperation aimed to reduce deforestation around the camp and in surrounding villages, mitigate soil erosion to maintain fertility, improve soil permeability and improve living conditions, creating a model best practice for other refugee communities within the Sahel region. A green refugee community has since been developed in Minawao addressing the two most pressing challenges of today, transforming the plight of refugees and improving the environmental health of their communities via a sustainable approach. The project demonstrates unique methods with which to minimize the environmental footprint of humanitarian work, reduce costs, improve the health of refugees, and enhance the environmental quality of host communities. It has transformed the relationship between refugees and their host community, providing a more prosperous environment with new livelihood opportunities, whilst empowering and protecting women and girls (see Figure 4.5).

Source: The Lutheran World Federation - (photo by Justin Toukap). URL: https://www. lutheranworld. org/news/cameroon-protect-environment-create-employment (2020) (Accessed: 04/08/2022)

Figure 4.5 Green space number 1, one of the 26 green spaces within the Minawao Refugee Camp

6 United Nations Human Settlements Programme. URL: https://www.urbanagendaplatform.org/best-practice/building-green-refugee-camp (Accessed: 30/07/2022).

7 United Nations High Commissioner for Refugees. URL: https://data.unhcr.org/en/documents/details/84914 (2021) (Accessed: 30/07/2022).

Implementation process

In 2017, UNHCR, the Lutheran World Federation (LWF) and the Land Life Company received a donation of USD 2.7 million from the Dutch National Postcode Lottery and subsequently initiated work on the Minawao camp, facilitating proactive greening measures to tackle the social and environmental crisis at hand. Cooperating under a public-private partnership model, the support of all three entities produced staggering results over just a few years developing a sustainable, green refugee camp model which integrated innovative ecological preservation techniques. In order to create a more sustainable lifestyle for the refugees and their host community, the focus was given to four core elements: guaranteeing environmentally sustainable shelter; reforesting degraded land; transition to sustainable cooking alternatives; and capacity building for local refugees.

1. Developing eco-friendly housing and energy production methods

Emergency shelters had originally been built using wooden poles and plastic sheets but these temporary solutions were quickly damaged, eventually becoming sources of litter polluting the community and surrounding areas. The project facilitated a movement towards eco-friendly alternatives for sustainable housing solutions. Under the green refugee camp model, transitional shelters were introduced incorporating sustainability principles via the use of locally-produced non-baked bricks (produced sparing wood and other fuels). Local sourcing of these bricks also eliminated the carbon footprint resulting from conventional production and transportation. Subsequently, a total of 14,850 community members were offered sustainable shelters with 22,445 people benefitting from UNHCR's efforts to construct eco-friendly family shelters throughout the camp.[6]

In addition, where 95 percent of people living in the northernmost part of Cameroon have been reliant on wood for cooking and heating,[8] the project facilitated the transition to eco-friendly alternatives manufactured within the camp itself. Previously, the use of firewood would spark conflict between refugees and locals due to the scarcity of trees, but the project alleviated this issue through the introduction of locally-produced energy-efficient, pollution-reducing charcoal briquettes made from agricultural waste such as peanut shells or wheat husks. Besides providing more sustainable cooking fuel, this also eliminated the toxic fumes emitted by traditional wood stoves. And critically, it also reduced internal friction caused by fuel shortages and reduced the risks faced by refugees when embarking on dangerous trips outside of the camp to source fuel where women and girls, in particular, were exposed to attacks.

LWF also established an energy-efficient stove production centre along with two eco-friendly briquette production centres in which families can transport their waste for recycling via conversion into usable briquettes; promoting the circular use of materials. As of 2020, 11,460 energy-efficient stoves had been distributed to families in the camp, and over 5,000 families had received training in briquette production. Specific efforts were made to train local women in briquette and stove production, as shown in Figure 4.6, to empower them through income-generating opportunities. In return, they played a key role in educating the local community on the use of eco-friendly energy/stoves, for example through three

Source: United Nations Human Settlements Programme. URL: https://www.urbanagendaplatform.org/best-practice/building-green-refugee-camp (Accessed: 30/07/2022)

Figure 4.6 Community members making energy-saving stoves

8 The Lutheran World Federation. URL: https://www. lutheranworld. org/news/cameroon-protect-environment-create-employment (2020) (Accessed: 04/08/2022).

community fairs in 2018 including National Youth Day and International Women's Day. Where 1,019 of the planned 5,100 households had access to alternative and/or renewable energy as of January 2021, this highlighted that solid foundations had been established; however, further work is required to expand access to a greater number of homes.[7]

2. Enhancing ecological resilience through reforestation and education

Where a 18 km (approximately) radius of land had been cleared around Minawao, the project's reforestation pillar as led by LWF was subject to underlying tension around the Gawar community and in the nearby Zamay Forest Reserve – a site of strong cultural significance to the Zamay people. Afforestation has remained a key activity with over 300,000 trees planted since the project's launch in 2017.[7] Using 'cocoon technology', a novel method developed by Land Life, planted seedlings were provided the best chance of survival in the harsh conditions. The process involved burying donut-shaped water tanks made from recycled boxes, encircling plant roots and feeding them with a steady supply of water via a string that connects to the young shoot as shown in Figure 4.7. Previously, due to a lack of technical knowledge, the tree survival rate was less than 10 percent leading to largely unsuccessful reforestation efforts. However, the introduction of this new technique has increased their survival rate to 85 percent while reducing water consumption by 61 percent, with some trees growing up to 3 m in height.[8] These trees are providing invaluable protection from sun and wind in the face of extreme heat and windstorms. In subsequent years, the tree canopies are expected to continue to grow, forming mini-forests between houses that will further bolster living conditions and environmental protection by reducing soil erosion and increasing carbon sequestration.[6]

Source: Land Life Company. URL: https://landlifecompany. Com/projects/minawao-refugee-camp-cameroon/ (Accessed: 05/08/2022)

Figure 4.7 Residents in the Minawao refugee camp plant trees using cocoon technology

To date, 119 hectares of land has been reforested and 26 tree nurseries developed within the camp and in nearby villages.[9] These have provided job opportunities for local community members and also allowed residents to come together and learn new skills. Gaining knowledge on seedling growth and maintenance has enabled the Minawao refugees to become more self-sufficient. A five-year tree planting cycle is ensuring that the local community has a continuous supply of wood, which can be used as firewood while the vines are used in roof construction. Fruit from trees donated by LWF can be harvested after two years, and after three years most of these trees are large enough to be pruned. Over the next 20 years, it is projected that 2,160 tons of cashew nuts will be produced, as well as 8,400 tons of neem oil and 160,000 tons of fodder over the next 40 years allowing for a long-term local food production system.[9] In addition to providing job opportunities for men and women, the planting activities have also opened up educational opportunities for children with 12 new nature clubs established in local schools. These clubs help care for the community's newly-planted vegetation and educate the children about the importance of protecting the environment.

As a highly replicable initiative, the project has been designed to permit a flexible and transferable approach to environmental restoration in similar environments. The project has demonstrated the role of afforestation in rebuilding and empowering refugee communities, combining ecological conservation with agroforestry and vocational skills training to cultivate an eco-

9 The Lutheran World Federation - (photo by Justin Toukap). URL: https://www. lutheranworld. org/news/cameroon-protect-environment-create-employment (2020) (Accessed: 04/08/2022).

friendly living environment with new socio-economic opportunities to improve quality of life (see Figure 4.8). However, it must be acknowledged that the project's scalability relies heavily on funding and donations from external organizations, and these remain the main obstacles to project continuation. It is key to note that interventions undertaken by international institutions such as those in Minawao should be conducted in close collaboration with local authorities to help streamline institutional ownership and facilitate long-term sustainability making more impactful change to these local communities.

Source: United Nations High Commissioner for Refugees - (photo by Xavier Bourgois). URL: https://www. unhcr. org/uk/news/stories/2021/9/614854b14/refugees-cameroon-help-build-great-green-wall-combat-desertification. html (2021) (Accessed: 05/08/2022)

Figure 4.8 Women from the Minawao refugee camp working in the fields

Reference experiences

1. Understand the protection of natural assets and ecology as a priority for the sustainable management of refugee communities

While refugee communities often face extremely harsh conditions, natural resources also remain a precious commodity and equal consideration must be given to the accessibility and quality of these assets. As exemplified in Minawao, the continuing influx of refugees led to severe environmental degradation depriving what was already barren land of its essential ecological capital, destabilizing living conditions even further.[10] In order to accommodate highly marginalized populations, the planning and development of refugee communities should prioritize environmental management through conservation and restoration efforts, understanding ecological resources as critical components to sustain the livelihoods of local inhabitants and foster more resilient communities. In addition, as highlighted through the development of renewable energy sources in which local products were regenerated to create eco-friendly briquettes and stoves, the protection of natural capital can feed into circular systems creating long-term sustainability achieved through the recycling and reuse of organic materials. Building on the project to date, it is equally important that greening activity is extended to neighbouring villages in order to more effectively combat desertification and in this regard, the careful selection of reforestation species will help to prevent imbalances in local ecosystems.

2. Promote green infrastructure as a multifunctional tool to enhance livelihoods in refugee communities

When deployed on the metropolitan scale, green infrastructure has proven its value in creating a diverse range of benefits for municipalities and their inhabitants. As emerging urban environments where initial transience often transpires into long-term settlement, green infrastructure integration should also be sought as a key tool to build socio-environmental resilience and sustain livelihoods in refugee communities. With an array of benefits, the value of reforestation in Minawao was apparent, improving soil quality and water retention, and facilitating shade and wind protection. It also enabled local food production and associated job creation in a more self-sufficient and adaptive community. The use of innovative technology to improve afforestation is also impactful where state-of-the-art reforestation cocoon technology, global positioning system (GPS) tools and drones used in the planting, tracking and monitoring of individual trees, enabled the facilitation of sustainable agroforestry creating a greener, more prosperous community in which refugees and their hosts can build secure livelihoods.[8]

10 Land Life Company. URL: https://landlifecompany. Com/projects/minawao-refugee-camp-cameroon/ (Accessed: 05/08/2022).

3. Raise awareness among refugee communities on the importance of environmental protection and build skills to foster local action

Refugees often lack education and knowledge concerning the critical value of ecological systems and a lack of resources hampers their acquisition of important skills.[11] Concerted efforts should be made to reduce this deficit, mainstreaming environmental protection education into refugee communities, in particular for children and youths, to encourage a long-term role in protection efforts. Where environmental protection has created jobs and income in Minawao, it is important to understand the intrinsic connections between environmental protection and local economic development in which skills transfer – cutting across key areas such as reforestation, eco-friendly stove and briquette production, and land management – contributes to the formation of symbiotic relationships between environmental sustainability and livelihood prosperity. In this regard, the greening of the Minawao community has also empowered local women and girls, improving their position in families and increasing their safety and independence.

Yokohama, Japan: Blue Carbon Project[12]

Case background

As a major port city situated in eastern Kanagawa-ken[13] on the western coast of Tokyo Bay, Yokohama is afforded an abundance of blue resources and marine ecosystems, covering an area of 437.78 km^2 with a population of approximately 3.7 million people. Along with numerous associated industry and warehousing facilities, the Yokohama port, as shown in Figure 4.9, is often viewed as Tokyo's 'outer port' and thus plays a key role in the city's economy, in addition to the fishing industry. In 2018, Yokohama was selected as a 'SDGs future city' and a 'local government model project for the SDGs', as part of the Japanese government's larger SDG Action Plan, where the city has declared its determination to reach carbon neutrality by 2050.[14] This declaration has positioned Yokohama at the forefront of Japanese cities in tackling climate change and promoting environmental integrity, and has enhanced traction on progressive initiatives in urban

Sourse: Carbon Neutral Cities Alliance. URL: https://carbonneutralcities.org/cities/yokohama/ (Accessed: 10/08/2022)

Figure 4.9 Yokohama's port area

11 The Lutheran World Federation. URL: https://www.lutheranworld.org/news/nigerian-refugees-cameroon-transform-desert-land-great-green-wall (2021) (Accessed: 08/08/2022).

12 This case was co-authored by the UN-Habitat experts and the team of Dr. Chen Haiyun from Tongji University.

13 Kanagawa-ken: A prefecture of Japan located in the Kanto region of Honshu.

14 Open Yokohama. URL: https://businessyokohama.com/sdgs/future-city-net-zero-carbon/#:~:text=Yokohama%20was%20designated%20an%20%E2%80%9CSDGs,those%20efforts%20into%20the%20future (2022) (Accessed: 20/08/2022).

development to further implementation of the SDGs in the city.

As one of the city's core pilot projects to promote low-carbon transitions and ocean health, Yokohama council is currently implementing the Blue Carbon Project which is explicitly concerned with 'blue carbon' and 'blue resources'. Blue carbon is the carbon credit stored in coastal and marine ecosystems and blue resources denotes another type of carbon credit from the effective use of coastal and marine resources. The concept of blue carbon originates from the *Blue Carbon: The Role of Healthy Oceans in Binding Carbon* report released by the United Nations Environment Programme in 2009 which largely focuses on carbon fixing in marine ecosystems such as mangroves, salt marshes and seagrass beds or coastal wetland blue carbon ecosystems. Compared to forests, coastal wetlands are modest in area; however, their carbon fixation capacity per unit area is far greater, at ten to a hundred times that of forest land. The high carbon fixation capacity of coastal wetlands stems from their special geographical locations whereby along the land-sea interface, periodic tidal inundation form hypoxic local environments, reducing the activity of soil microorganisms, greatly slowing the decomposition of organic matter and thus reducing carbon emissions (see Figure 4.10).[15]

In order to tackle climate change, Japan adopted the goal in December 2020 of achieving carbon neutrality by 2050 clarifying that it would also accelerate R&D supporting innovation in the practical application of related technologies. To this end, the Japanese Ministry of Economy, Trade and Industry has proposed a strategy of 'creative environmental innovation' clearly advocating 'exploration of blue carbon'. Japan has also calculated the CO_2 uptake of seagrasses and algae at 125 major ports for incorporation into decarbonization plans from 2022 onwards in order to promote the protection and restoration of algae beds and shoals. The Japanese Ministry of the Environment has released a draft policy on green economy and social change in order to integrate the development of the blue carbon sink economy and to tackle environmental challenges through centralized investment, while creating new tax categories and relevant measures providing the necessary conditions and environment for the development of blue carbon sinks.[16]

Sourse: Circular Yohohama. URL: https://circular.yokohama/en/projects/yokohama-blue-carbon/ (2020) (Accessed: 11/08/2022)

Figure 4.10 The Yokohama Blue Carbon Project experimental area

15 People's Daily. URL: https://news.china.com/internationalzq/13004216/20220127/41080987.html (2022) (Accessed: 10/08/2022).

16 URL: http://www.hycfw.com/Article/231244 (Accessed: 11/08/2022).

The Blue Carbon Project is on course to bring about a range of environmental benefits. Firstly regarding the use of marine resources, Yokohama's focus on marine resources imbues blue carbon with particular significance for the port city. Given the potential for the environment surrounding Japan's island territory, blue carbon resources seem set to increase in the future. Yokohama council has developed a carbon neutral certification system seeking to protect the local environment and generate employment whilst also regenerating marine ecosystems and fisheries and the Blue Carbon Project provides the means. This all helps increase carbon fixation and create new jobs in local fisheries, while also forging new local relationships. Yokohama council is sharing its information about the project with other local authorities. Yokohama's carbon neutral certificates, for example, were disseminated with Hyuga city in the Miyazaki prefecture and Hannan, Osaka in order to spread the knowledge and create new relationships.[17]

Implementation process[18]

In order to standardize implementation of the Blue Carbon Project, Yokohama council formulated the following detailed principles and rules.

1. Key principles for ensuring reliability

In order to ensure reliability in the implementation of the Blue Carbon Project, the project's plan implementation, monitoring, calculation, verification and other procedures should abide by the following principles to the greatest extent possible while setting boundaries for each of them. ① In line with the principle of integrity, the project should ensure that no GHG emission activities related to the baseline and the project are omitted; ② To ensure consistency, projects should adopt the same methods and data for quantities absorbed and reduced, ensuring that these are calculated and compared using the same scale; ③ To ensure accuracy, projects should avoid calculations based on assumptions. Limit measurement and calculation error and uncertainty to within acceptable ranges; ④ To promote transparency, adequate, appropriate procedures are required to allow any third party not using the rules to make for reasonable judgments; and ⑤ Regarding maintainability, trackable procedures and models should be used in order avoid overestimating quantities absorbed and reduced.

2. Project applications are required to meet the relevant demands, their implementation is the exclusive responsibility of the Operation Affairs Bureau

Projects should meet the following four requirements: ① Their actions should absorb or reduce the sum of blue carbon and blue resources in Yokohama; ② The sources of GHG emissions within the scope of the project should be determined and a list of sites and methods related to emission supervision for each source should be formulated; ③ The monitoring period should not exceed 12 months but can be updated through application; and ④ The environmental value of the absorption/reduction cannot be reused in excess of the rules herein. In addition to this, the implementation process is the sole responsibility of the Operation Affairs Bureau. This includes project registration, credit authentication for project implementation, verification procedures for credit certification application, operations and management related to certified credit trading, certification of carbon neutrality, certificate issuance and other matters necessary for system operation.

3. Integrating a detailed credit certification system

A detailed carbon credit certification system should be developed during implementation of the project. A scientific calculation of carbon emissions and absorption should be conducted which involves implementation of monitoring whereby personnel performing project registration should conduct monitoring in accordance with the plan specified in the project registration application. In addition, it requires emissions calculations in which monitoring personnel calculate the amount of GHG emitted during project implementation based on baseline conditions in conjunction with their knowledge. Carbon credits

17 Circular Yohohama. URL: https://circular.yokohama/en/projects/yokohama-blue-carbon/ (2020) (Accessed: 11/08/2022).

18 City of Yokohama. URL: https://www.city.yokohama.lg.jp/kurashi/machizukuri-kankyo/ondanka/etc/ygv/carbonoffset.html (Accessed 12/08/2022).

certificates, as shown in Figure 4.11, are issued in units of 0.1t-CO_2, specified at the time of issue and during certification, fractions smaller than 0.1t-CO_2 should be rounded off. During the certificate application process, personnel implementing project registration should calculate the absorption/reduction in accordance with data from project implementation in case of acceptance of a certificate as a letter of credit. The submission of a project's application for credit certification must take place within one year after the date of its completion. After the certification process is complete, strict carbon credit management must be carried out. This mainly includes record keeping in the credit management book, credit trading procedures, registration of carbon credits and certificates, application to purchase carbon credit certificates, confirmation with carbon credit certificate holders, accounting and tax processing for carbon credit transactions, and control of purpose of use of payments from carbon credit sales. Finally, the implementation rules clearly stipulate processes for carbon offsetting based on carbon credits.

Source: City of Yokohama. URL: https://www.city.yokohama.lg.jp/kurashi/machizukuri-kankyo/ondanka/etc/ygv/carbonoffset.html (Accessed: 12/08/2022)

Figure 4.11 The Yokohama Blue Carbon Project carbon offset certificate

Reference experiences

1. Blue Carbon Project: from concept to industrial implementation

In addition to involving carbon credits, the exploration of the Blue Carbon Project should seek to improve its adaptation to industrial, economic and social development needs. Japan's New Energy and Industrial Technology Development Organization (NEDO) has called for bids for projects related to its Energy and Environmental New Technology Pilot Research Programme aiming to construct development systems for related technologies within its supply chains. Nippon Steel has announced that together with its chemical materials company and metal materials research and development centre, the company had bid successfully. Consequently, NEDO initiated a project to construct a supply chain-related technology system targeting the exploration of blue carbon, commissioning the above three companies for technological development. The project leverages the geographical advantages of seafront steel plants to produce marine biomass (seaweed) – a carbon-neutral material – with the purpose of establishing a novel supply chain featuring 'stand-alone production and marketing of biomass' for use in steel production. Regarding the utilization of marine biomass, the flexible utilization of carbon sources (carbon and carbon materials) for use in steel production will be explored. On the steel production side, the slag produced as a byproduct can serve in the construction of seaweed farms. Research will also be conducted on carbon-neutral marine biomass materials and measures including analysis of their overall economics and carbon reduction effects, and rough demonstration stage plans formulated.[19]

19 Green Innovation and Carbon Neutrality. URL: http://www.hycfw.com/Article/231244 (2022) (Accessed: 14/08/2022).

2. Cities can capitalize on ocean resources to address global climate change

Yokohama council's strategy of focusing on ocean resources highlights its unique and innovative approach to promoting environmental sustainability. The Blue Carbon Project is promoting decarbonization whilst creating jobs and demonstrates reverence for the ocean's value to humanity. In an interview by Alpatent with Japan's Blue Carbon Project Company,[20] Mr. Keiji Yoshikawa, Alpatent's director, stated that: "The attention attracted by blue carbon reflects its ability to alleviate global warming. CO_2 is easily soluble in water and 2.5 billion tons of CO_2 are dissolved in the ocean every year. Forests, on the other hand, absorb only 1.9 billion tons of CO_2 every year worldwide. So more CO_2 is actually absorbed by the ocean than the land. Global warming, mainly the result of GHG, has been a major problem for a long time. Blue carbon can be understood as CO_2 absorption by the ocean, and is very important for mitigating global warming". According to Mr. Yoshikawa, the high hopes for blue carbon reflect the current energy supply structure. At present, the world relies mainly on thermal power generation using fossil fuels such as oil and coal. This burning of fossil fuels releases large amounts of CO_2 into the atmosphere every year. Replacement of thermal power generation via vigorous development of solar and wind energy would reduce CO_2 emissions. However, in both financial and technological terms, the transition to renewable energy is difficult to achieve quickly. Nonetheless, reducing global CO_2 emissions remains an urgent need and this is one reason the world is pinning its hopes on the ocean's ability to absorb CO_2. As an island country surrounded by oceans, Japan in particular is emphasizing using blue carbon towards their goal of achieving carbon neutrality by 2050.

3. Promote coordination on blue carbon and green carbon projects to ensure a green, low-carbon transition[21]

While global forest coverage exceeds 30 percent, this only applies to the earth's land area and where over 70 percent of the planet is covered by ocean, blue resources have significant potential to help drive sustainable development which can be tapped in particular by coastal cities. In recent years, excessive deforestation and forest resource degradation has reduced the carbon sequestration capacity while desertification has also degraded the carbon sequestration efficiency of other terrestrial vegetation. Despite the ocean's significant size, blue carbon is facing huge challenges due to rapid urbanization and anthropogenic damage and pollution, especially island reefs close to shores, and to important plant species such as mangroves. If the terrestrial environment can be improved – particularly forest coverage and quality – and grassland resources can be expanded, the terrestrial ecological environment will be restored and improved. This will in turn endow the water flowing from land into the ocean with increased nutrition, expanding the ocean's microbial content and improving the health of seagrass and algae. Blue carbon will then naturally increase. At the same time, dead seagrass and algae can be converted into fertilizer and used for soil enrichment on land. Therefore, if the natural environments of both ocean and land can be protected, a low carbon world can surely be created.[20]

Dar es Salaam, Tanzania: Community-Driven Flood Resilience in Dar es Salaam's Informal Settlements[22]

Case background

As a commercial port city on the Indian Ocean, Dar es Salaam is considered to be one of the fastest growing cities globally with a projected 10.79 million inhabitants by 2030.[23] Where the Msimbazi River runs through the city and due to its lowland coastal orientation, it is especially prone to flood events as shown in Figure 4.12; however, such instances have been made more

20 Alpatent. URL: https://weibo.com/ttarticle/p/show?id=2309404787931176108654 (Accessed: 14/08/2022).

21 Carbon Neutral Cities Alliance. URL: https://naturebasedclimate.solutions/resource-database/yokohama-urban-blue-carbon (Accessed: 13/08/2022).

22 This case was co-authored by the UN-Habitat experts and the team of Dr. Chen Haiyun from Tongji University.

23 Population Division of the Department of Economic and Social Affairs of the United Nations. World Urbanization Prospects (2018).

frequent with rapid urbanization where 70 percent of its inhabitants live in informal settlements.[24] Issues such as clogged drainage channels due to inadequate solid waste management, a lack of outflow points to natural drainage areas, unplanned construction of housing, poor sanitation infrastructure, and reduced municipal capacity to issue flood warnings and evacuate communities, all amplify flood risk further exacerbating impacts to some of Dar es Salaam's most marginalized inhabitants. Critically, climate change and rapid urbanization are only exacerbating these issues. In April 2014, three consecutive days of torrential rainfall caused extensive flooding across the city causing 19 fatalities and displacing 20,000 people from their homes.[25] During intense rainfall events, many roads become impassable in these informal settlements whilst deep mud makes even short school walks virtually impossible and schools are forced to halt their operations. This affects the lives of thousands of people, hitting the urban poor the hardest through infrastructural damage and loss of livelihoods; highlighting the fundamental socio-environmental inequalities in the city.

Where flood-induced losses to human and economic capital are compounded by a lack of adequate infrastructure planning, this has in turn slowed the development of Dar es Salaam. Accordingly, it has reduced opportunities for its most marginalized inhabitants to find a way out of poverty, and has served as a major barrier where the city is transitioning into a regional commercial hub. The generation of effective urban disaster risk and response strategies has been a pivotal area of development for the city to embed environmental resilience into its vulnerable neighbourhoods and enhance the urban quality of those local communities. Despite being a key tool for informed decision-making and flood prevention, high-quality mapping is still lacking in developing countries including Tanzania as many local companies lack sufficient incentives to gather quality data. Maps that are produced remotely are often inaccurate, outdated, or do not contain sufficient data for urban decision-makers to plan in the event of disaster. Access to detailed, up-to-date maps is vital to improve disaster planning and response in urban flood zones, and to increase the adaptive capacity of Dar es Salaam

Source: Thomas Reuters Foundation - (photo by Kizito Makoye). URL: https://news. trust. org/item/20170104070454-rd34w (2017) (Accessed 16/08/2022)

Figure 4.12 Informal settlements along Dar es Salaam's Msimbazi River flooded after intense rainfall

24 National Bureau of Statistics (2013).

25 Reliefweb. URL: http://reliefweb. int/disaster/fl-2014-000053-tza (2014) (Accessed: 26/08/2022).

council and its local community in the face of shocks and stressors.

Following a request from Tanzania's Commission of Science and Technology (COSTECH) in 2011 to better address issues of flooding, the World Bank confirmed their support for the community-based mapping innovation Dar Ramani Huria (open mapping) in Dar es Salaam with funding from the Department for International Development. From July 2015, the Tanzanian Red Cross partnered with the World Bank through the Zuia Mafuriko (prevent flooding) project bringing a range of partners on board. With a common vision, they aimed to mobilize local communities to collectively map the city's vulnerable neighbourhoods to minimize flood impact in the most at-risk locations, enhance local knowledge and understanding on flooding and natural disasters, and inform evidence-based city and institutional planning. The municipality mandated the minimization of natural disaster risk, ensuring authorities and communities were equipped with the necessary tools and mechanisms to respond.

Implementation process

1. Establishing partnerships and roles: Dar Ramani Huria and Zuia Mafuriko

The primary management of Dar Ramani Huria was conducted through the Humanitarian OpenStreetMap Team (HOT) with support from OpenMap Tanzania, a local organization. The Tanzanian Red Cross led the Zuia Mafuriko project which enabled the integration of a network of partners and knowledge transfer across sectors with technical support and funding secured from the American Red Cross and Danish Red Cross. Students from Ardhi and Dar es Salaam Universities were also instrumental in training community members during fieldwork operations whilst local government officers from Dar es Salaam city council were also closely engaged as were COSTECH; the Global Facility for Disaster Reduction and Recovery; the Red Cross Red Crescent Climate Centre; the Tanzania Meteorological Agency; Buni Innovation Hub, Deltares (an independent water knowledge institute); and Digital Globe (a geospatial information provider).

2. Community mapping for urban risk exposure: Dar Ramani Huria 1.0

Initiated in March 2015, Dar Ramani Huria 1.0 was launched following a workshop with COSTECH marking the first phase of the project in which mapping work was facilitated across Dar es Salaam's most flood-prone wards. Critically, this sought to enhance knowledge at institutional and community levels on flood hazards, vulnerability and exposure – the three components of the risk framework – whilst promoting sustainable water resource management. The World Bank contracted HOT to facilitate work, partnering with 165 students from Ardhi and Dar es Salaam Universities who carried out mapping operations through industrial placements. In parallel, the Tanzanian Meteorological Agency led forecasting work with the Red Cross Red Crescent Climate Centre to identify localized rainfall forecasts to integrate into forecast based financing mechanisms. The Dar Ramani Huria team introduced themselves to local ward officers explaining the project, and sent introductory letters to sub-ward officials to initiate local cooperation after which they were introduced to Wajumbe local leaders (operating at the most granular administrative level). To begin mapping, students first collected information on paper obtaining the GPS locations of buildings, rubbish collection points, drains and other important features, from which data was then uploaded onto OpenStreetMap (OSM) – a collaborative web-based platform working to create a free and open-source map of the entire world. OSM facilitated digitization of the data and generation of highly accurate flood maps, although some issues did arise in corroborating mapping where GPS locations were taken incorrectly. Never-the-less, this first phase of the project showed authorities and local community members the power of mapping as a key tool to integrate into urban disaster planning efforts providing flood extent information to advise urban disaster risk decision-making and flood mitigation strategies. The generation of printed maps also helped local community members to establish new waste management initiatives to unblock drains and educate residents on the detrimental impact of littering.

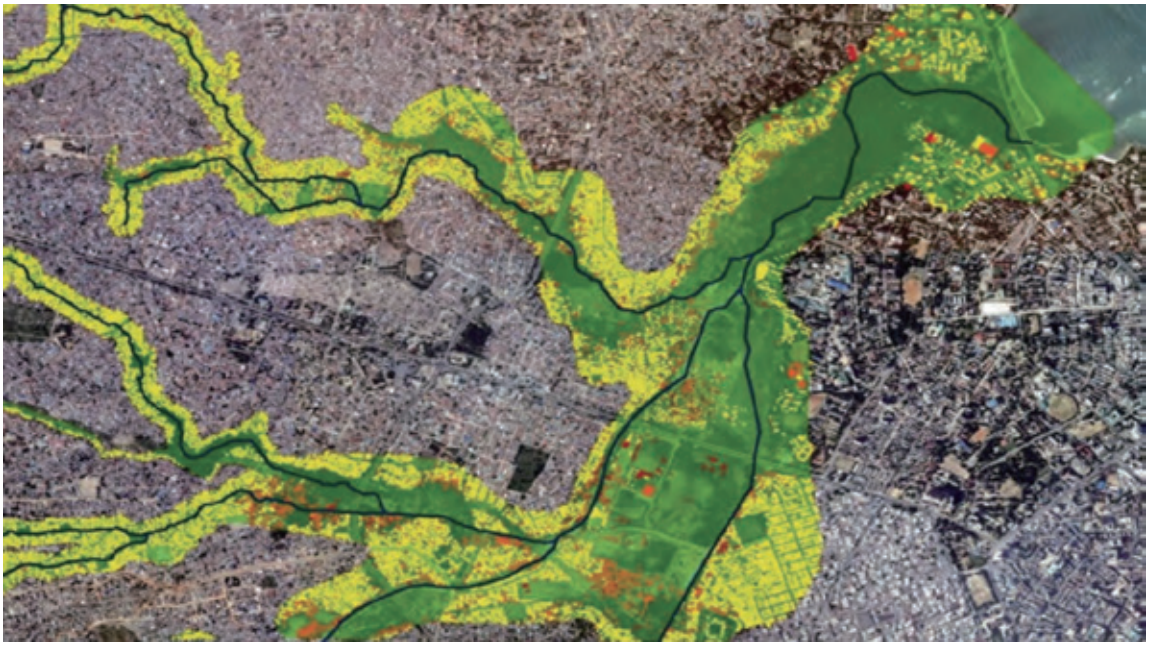
3.Developing flood early warning and response plans

Using the mapping and historical precipitation data, the Tanzanian Red Cross subsequently developed disaster preparedness and response plans for 3 of Dar es Salaam's municipalities (Ilala, Kinondoni and Temeke)

and 10 of the most flood-prone wards, cooperating with trained Community Disaster Preparedness and Response Teams. The plans set out critical early actions, preparedness, coordination and response strategies for disasters. Maps were combined with InaSAFe, a free software programme that enables users to run real-life natural disaster scenarios for improved response/planning. The Dar es Salaam Urban Forum was also established as a quarterly meeting enhancing coordination between relevant actors and bolstering long-term resilience planning. Collaboration between the World Bank (focusing on flood risk/community mapping and modelling) and the American Red Cross/ Danish Red Cross (funding community organization, flood preparedness/response planning) was essential, as well as direct engagement with local communities to ensure equitable resource allocation and gain local knowledge. Through the partnership, community mapping covered approximately 1.3 million inhabitants, 750,000 buildings and 2,000 km of road across the city enabling the production of a suite of flood maps, as shown in Figure 4.13, to aid local government planning. Community mapping and flood plans reached 540,834 individuals and 449 direct beneficiaries.[26]

4. Technological integration to improve data collection quality: Dar Ramani Huria 2.0[27]

In July 2017, Dar Ramani Huria 2.0 expands upon version 1.0 through a more sophisticated approach to data collection combining exposure and flood hazard data to perform disaster risk analysis. This new method integrated smartphone applications to aid comprehensive community mapping, leveraging OpenDataKit (ODK) and OpenMapKit (OMK) – intuitive applications equipped with imagery and forms for direct data collection – which allowed for monitoring field data in real-time and historical data collection tracing to identify any discrepancies. This resulted in a more systematic database stored on a central server, enabling users to access files remotely. Where OMK (an extension of ODK) was used initially, it was realized that data analysis was too complex in a polygon



Source: The World Bank. URL: https://documents1.worldbank.org/curated/en/694491555396781552/pdf/Volume-A-Strategy-and-Management-Framework.pdf (Accessed: 28/06/2022)

Figure 4.13 The flood buffer zone on the lower reaches of Msimbazi River

26 Tanzania Red Cross. URL: https://ctk.climatecentre.org/downloads/modules/training_downloads/A%20Partnership%20with%20Communities%20for%20Flood%20Resilience%20in%20Dar%20es%20Salaam.pdf (2017) (Accessed: 25/06/2022).

27 Dar Ramani Huria. URL: https://ramanihuria.org/en/2018/07/16/community-mapping-for-flood-modelling-2-0/ (2018) (Accessed: 28/06/2022).

format (particularly when developing heat maps where point data was required), so the team then switched to ODK (an open-source mobile data collection platform that replaces paper forms used in survey-based data gathering) which enabled data point collection and survey development to establish flooding trends in the wards.

As a first step, Wajumbe leaders selected individual community members who owned smartphones to install ODK Collect from which they could ensure that survey forms were downloaded from the server and check GPS accuracy (typically less than 4 m). Via a number of questions, ODK guided surveyors through a step-by-step process ensuring a high degree of accuracy. Dar Ramani Huria field teams could then train community members to collect data using ODK, teaching them analytical techniques to ensure a comprehensive assessment of all wards. Trained students also worked with local communities to perform ground surveys adding a range of data layers such as the type/dimension/condition of drainage networks, infrastructure and assets.[28] Field data was visualized according to Mjumbe[29] jurisdictional areas within which survey question coverage could be determined for each cluster.

The team was able to clearly show respondents answers regarding flood history in their area, from which they created new datasets for the reported flood years. Drains were remapped with a more detailed drainage model, placing attention on connectivity. A specialized Dar Ramani Huria team surveyed, cleaned and quality checked the drainage data, producing associated datasets for 20 wards (Buguruni, Hanansifu, Ilala, Kigogo, Kijitonyama, Kinondoni, Magomeni, Makumbusho, Manzese, Mburahati, Mchikichini, Mikocheni, Mkurumula, Msasani, Mwananyamala, Mzimuni, Ndugumbi, Sinza, Tandale and Vinguguti). Ward data was quality checked using Deltares Hydro – OSM quality data assurance model, a toolbox which identifies errors/warnings/missing information and which converts OSM data into individual data layers to use for hydrological and hydraulic modelling, and generates a topologically accurate 1D network.

5. Generating high-quality data maps

By combining digital applications with locally available tools, Dar Ramani Huria successfully generated high-quality data maps as shown in Figure 4.14.[27] This data then fed into maps highlighting inundation and flood extent, drainage connectivity, rubbish points, community assets and community vulnerability and exposure. Additional activities such as soil sampling and the development of elevation tools to improve flood forecasting models were also undertaken. These later helped to inform municipal agencies and communities to better prepare for floods understanding water flow routes, channel widths and capacities, the location of businesses/assets and critical facilities (e.g. schools, hospitals, shelters, etc.). Dar Ramani Huria has since worked on new solutions, deploying drones which can be used in cloudy conditions. This has made it simpler to map different features, monitor infrastructure and river basins leading to quicker flood response times. Where over 1,000 students and 300 community members were involved, they acquired invaluable knowledge across a suite of open mapping tools, enhancing their technical skills and awareness on data. The project has developed stronger, more prepared communities, cultivating a greater desire for data-driven urban policies and decisions.

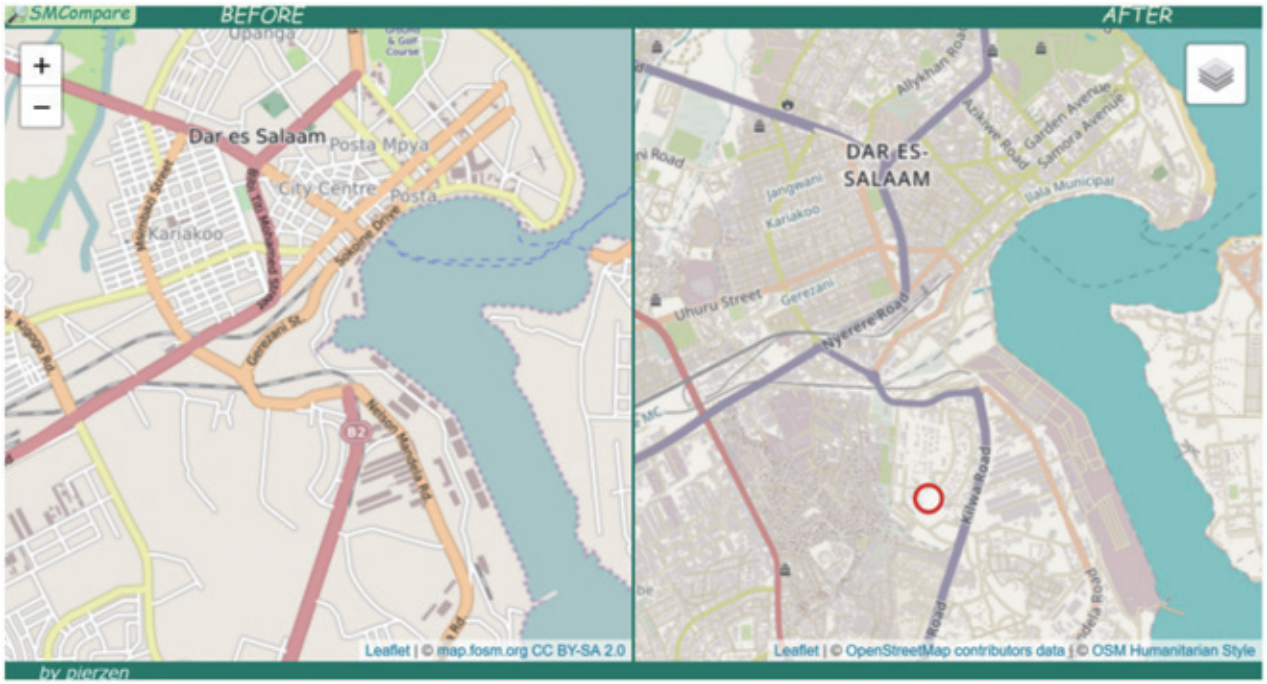
Reference experiences

1. Assess socio-environmental inequalities in urban disaster risk and prioritize those at most risk in resilience building measures

The case of Dar es Salaam has made the intrinsic vulnerability that poorer, marginalized urban communities are faced with in regard to natural disaster risk visible. A combination of poor infrastructure, reduced adaptive capacity (e.g. a lack of early warning systems/awareness and mitigation components) and geographic susceptibility to flood events in Dar

28 Winsemius. H. URL: https://medium.com/@h.c.winsemius/using-community-mapping-for-flood-modelling-c04976d3e982 (2017) (Accessed: 29/06/2022).

29 Mjumbe: Singular of Wajumbe.



Source: Dar Ramani Huria. URL: https://ramanihuria.org/en/ (Accessed: 30/06/2022)

Figure 4.14 A comparison of maps of Dar es Salaam before and after the Dar Ramani Huria initiative

es Salaam's informal settlements reinforces the importance of targeting high-risk neighbourhoods within city resilience strategies, areas which accommodate the most socio-economically marginalized dwellers. In line with the SDGs leave no one behind principles, cities and municipal governments must equate socio-environmental justice as a core component to sustainable urbanization to build resilience and prosperity in such vulnerable urban communities.

2. Understand the value of community maps as a key tool to inform urban resilience strategies and strengthen local adaptive capacity to disasters

Within the context of flooding and natural disasters, community mapping can serve as a powerful tool for change to create more environmentally resilient communities. As exemplified through Dar Ramani Huria, the generation of accurate, highly detailed maps can guide municipal governments and urban practitioners to make more informed urban flood mitigation/DRR strategies. Throughout the project, community-based mapping captured key infrastructure and water bodies, helping to strengthen risk identification, raise awareness of climate risk, and build the capacity of institutions and local communities to better withstand flood events. This collaborative approach to mapping helped transfer knowledge to neighbourhood leaders and local community members equipping them with highly valuable skills for mapping, digitizing, and modelling risk. As versatile skills, they are widely applicable to a number of areas and have promoted self-organization within the respective communities and increased the ability of local citizens to diversify their livelihood options and adapt to change whilst also enhancing the capacity of Dar es Salaam council's planning sector to innovate and generate data through community involvement.

3. Build partnerships between urban practitioners and communities that promote the integration of Big Data with local action to build resilience

Where Dar Ramani Huria worked directly with neighbourhood/area leaders and community members, the creation of partnerships was crucial to ensuring Big Data translated into local-level action (see Figure 4.15). The deployment of geocoded data layers developed in tandem with local communities fed into

Source: Reliefweb. URL: https://reliefweb. int/report/united-republic-tanzania/ramani-huria-atlas-flood-resilience-dar-es-salaam (2016) (Accessed: 02/07/2022)

Figure 4.15 Community residents actively participating in the project

more extensive community dialogue, DRR strategies and planning processes. In this respect, Big Data played a catalyzing role in stimulating new cooperation and partnerships, fostering the articulation of mapping efforts among a range of development stakeholders. Urban practitioners should understand the potential of Big Data to build urban environmental resilience and bolster development pathways, building local capacity and driving evidence-based decision making.

4. Ensure that data is accurate, accessible and actionable for its effective use in urban risk management

Where it is essential that data is of high-quality, data vetting through quality assurance mechanisms was essential to gain trust and ensure informed decision-making in the city.[30] Dar Ramani Huria continually tested new technology and methodologies to review data quality, enabling local teams to detect any issues efficiently and ensure the highest-quality of data possible. Capitalizing upon open-source software enabled a cost-effective, flexible approach to data collection in which mapping was made accessible, performed remotely with the aid of GPS devices and smartphone applications. The project provided a robust capacity-building programme for local mappers whereby data could be integrated into OSM allowing for high-quality digitalization and visualization during assessment. Data could also be easily applied to guide strategic disaster planning whereby its combination with additional software (e.g. InaSAFe) generated realistic flood scenario models, whilst direct training in disaster preparation across local communities further increased data actionability. Urban practitioners should therefore prioritize data that is accessible, easy to analyse and effective to integrate into disaster-related decision-making processes.

30 Humanitarian OpenStreetMap Team. URL: https://www.hotosm.org/projects/community-mapping-urban-risk-exposure-in-dar-es-salaam-ramani-huria-extension/ (Accessed: 02/07/2022).

Policy Suggestions

Cities Need to Bring Residents Closer to Greenery through the Construction of Pocket Parks to Enhance More Intimate Green Spaces for City Dwellers

In the context of rapid urbanization and increasing urban populations, green development is pivotal to improve the quality of cities and quality of life for urban inhabitants. In recent years, many cities globally have been building large 'mega' parks and green public spaces; however, there is an increasing demand for green spaces that can be reached within 10 to 15 minutes walking distance from the communities in which they live under the concept of the 15-minute city. Similarly to the case of Weihai, the key objective, therefore, remains in how to ensure green spaces are accessible to all individuals who use urban space – an essential requirement for everyone in the city. Critically, this requires government regulators from the initial stage of developing plans to make the purpose of building such parks clear. Are they vanity projects or for practical use? Are they close enough for people to travel there on foot or does reaching these spaces require a car or public transport? These orientations directly determine the implementation of the concept of 'people orientation' in the urban development process. Cities must work to facilitate innovative approaches to urban greening.

Promote Ecosystem Restoration and Green Development to Rebuild Livelihood Opportunities for Vulnerable Communities

Vulnerable groups are frequently subjected to survival in deprived areas with degraded ecosystems – a typical phenomenon in urban refugee communities in which natural resources constitute a key component to ensuring their prosperity and livelihoods. The greening of Minawao's refugee community has enabled local people to find employment and secure more stable livelihoods where ecosystem restoration has acted as a multi-functional catalyst to create jobs, enhance living conditions, create longer-term sustainability and improve safety within the community. With a particular focus on refugee communities and those in transient human settlement contexts, actors working to enhance the prosperity of these communities must understand the importance of ensuring environmental integrity and green development as a key means to enhance local prosperity. The promotion of the circular use of natural resources can foster self-sufficiency in these communities via the recycling and reuse of materials, a principle that aligns with caring for the natural environment whilst also using natural resources to maintain livelihoods.

Disaster Risk Reduction Strategies Must Be Mainstreamed into Urban Development Plans

Where climate change impacts are increasing in frequency and intensity in many cities, natural disasters are posing significant threats to urban populations. Establishing early warning systems and integrating mitigation and adaptation measures into urban development strategies are key to reducing losses from these disasters. Technological instruments and data serve as key tools in order to effectively deploy counter-responses to threats and protect vulnerable urban communities. Where the impact of natural disasters varies across different urban socio-economic and socio-environmental contexts, the development of appropriate application tools must respond to local situations and account for the most vulnerable populations, actively collaborating with local community members to merge bottom-up and top-down action in DRR plans. As highlighted in the case of Ramani Huria in Dar es Salaam, community mapping offers a powerful tool to drive collective action on urban flood resilience whereby people can work cooperatively with different interest groups to prepare and enhance the capacity of communities to manage floods. Moving forward, it is now imperative that cities and municipalities integrate contextualized DRR strategies into their development plans to ensure resilient and sustainable urbanization.

Chapter 5

Culture

Introduction[1]

As an often overlooked component of the SDGs, culture and cultural diversity enrich humankind and play an important role in the sustainable development of cities,[2] becoming integral to the SDG localization process. For cities to effectively accelerate SDG implementation, it is vital that they take into consideration the local cultural contexts of their communities including their values, customs, practices, spaces, tacit knowledge and tangible and intangible heritage, acknowledging that cultural diversity requires a sensitive approach to management through the contextualized lenses of individual cities and territories. Local communities may have deeper resonance with the SDGs when they are appropriately 'translated' from their global forms in which sense, culture – as the 'internal part of human experience, the oxygen of spirit'[3] – is key to achieving localization of the SDGs. Based on this, and although not all of the 17 Goals are semantically related to culture, several SDGs possess targets explicitly relating to culture and cultural development, and there is an integrated and indivisible link between culture and the wider SDG framework.

Urban governors around the world are increasingly acknowledging the importance of culture, reflected in recent VLRs. As of May 2021, 74 percent of the cities had incorporated culture into their local policy frameworks for SDG implementation.[4] Many local governors view culture as a crucial element to achieve sustainable development emphasizing the need to highlight regional cultural identities, values and historical endowments to increase residents' awareness of sustainable development and promote broader civic engagement. However, it is still an under-represented tool in the global development agenda. Where traditionally the focus has been solely on building restoration, it is important to recognize that heritage conversation has far broader contributions to sustainable urban development and is highlighted in different capacities across several Goals. SDG 4 which seeks to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all', explicitly recognizes the need to promote and appreciate cultural diversity and culture's contribution to sustainable development in relation to education. SDG 8, to 'promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all' promotes the integration of development-oriented policies that support productive creativity and innovation namely 'creative economies', as well as policies that promote local culture and products. As a more overarching target focused on cities and municipalities more directly, culture's contribution in SDG 11 to 'make cities and human settlements inclusive, safe, resilient and sustainable' is the largest and most intuitive, and calls to strengthen the world's cultural and natural heritage within sustainable urbanization processes.

The four case studies selected in this chapter all relate to the promotion and protection of urban cultural heritage, highlighting contextually unique strategies that are helping to incubate local traditions and values, strengthen social and community bonds, increase and diversify employment opportunities, and enhance livelihoods and prosperity. The cases highlight the introspection of cities and urban actors, drawing light to local challenges in leveraging and managing cultural heritage in the face of transitioning urban conditions, showcasing how innovative, future-oriented solutions can protect this fundamental component of the city.

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1 This chapter was written by Yang Rongbin, Shi Wen, Sheng Yang, Ouyang Chen and Tang Yingying from Shanghai Library (Institute of Scientific and Technical Information of Shanghai). The authors are grateful to the UN-Habitat, Shanghai Municipal Administration of Culture and Tourism for supporting materials.

2 United Nations, United Nations Conference on Housing and Sustainable Urban Development (Habitat Ⅲ). The New Urban Agenda. Quito, Ecuador (2017).

3 United Nations Educational Scientific and Cultural Organization. Culture and Sustainable Development (2019).

4 Culture 2030 Goal Campaign. URL: https://cultureactioneurope.org/files/2022/01/af_culture2030goal_2021.pdf (2021)(Accessed: 01/07/2022).

Case Studies

Aden, Sana'a, Shibam and Zabid, Yemen: Cash for Work – Empowering Urban Youth through Cultural Heritage Rehabilitation in Yemen's Historic Cities[5]

Case background

Yemen is situated at the conjuncture of the Arabian Peninsula, East Africa and the Indian Ocean, and boasts a long history and splendid cultural heritage. The Old Walled City of Shibam, Old City of Sana'a and the Historic Town of Zabid are all UNESCO World Heritage Sites. The castle in Shibam, built on a cliff in the 16th century, is one of the oldest and best examples of urban planning based on the principle of vertical construction. The Old City of Sana'a has more than 2,500 years of history with a rich religious and political legacy: it was once a major centre for the propagation of Islam. And the Historic Town of Zabid was the capital of Yemen from the 13th century to 15th century; its domestic and military architecture, and unique urban plan makes it an outstanding archaeological and historical site.

Aden is also rich in history and historical sites; however, the ongoing armed conflict in Yemen has posed significant threats to the unique cultural heritage with many buildings damaged by protracted fighting. In addition, the destruction of cultural heritage is further exacerbated by climate change, a long-term lack of maintenance, poor repair technology, funding shortages for restoration and the lack of capacity among local governments to ensure preservation of the ancient city due to the political security crisis. And at the same time the urban cultural environment has deteriorated with a loss of dignity and identity of the Yemeni people. The humanitarian crisis, famine and high unemployment rate has deprived young people of hope for the future which in turn increases the likelihood of their involvement in conflicts.

In this challenging context, the Cash for Work: Promoting Livelihood Opportunities for Urban Youth in Yemen project was officially launched in September 2018, aiming to create cultural heritage preservation-related jobs for local Yemeni people and in particular urban youth. It has strived to support sustainable, community-led, youth cultural and creative initiatives to promote cultural and creative industries, increase employment in the cultural sector and improve the cultural heritage management capacity of local government and civic groups, thereby strengthening social cohesion and economic resilience.

Implementation process

Cash for Work is a supportive measure in which the government invests in the construction of public infrastructure projects and the recipients are paid for their labour instead of direct relief. The project has been structured across four years (2018—2022) and is implemented by UNESCO, the Social Fund for Development (SFD), Yemeni government agencies and local heritage institutions, and civic culture organizations with EUR 10 million in funding contributed by the European Union (EU). The project has implemented a range of initiatives to promote the conservation of urban cultural heritage in Sana 'a, Shibam and Zabid, and the restoration of historic buildings in Aden, co-facilitating the development of cultural and creative industries and employment and capacity-building opportunities for local youth in the four historic cities.

1. Guiding youth participation in the development of ancient city restoration plans

UNESCO, in collaboration with SFD, the General Organization for the Preservation of Historic Cities in Yemen and the General Organization of Antiquities and Museums, completed a comprehensive urban heritage damage assessment survey of the city as a key first step. The survey used cutting-edge methodologies, combining rapid-assessment tools and digital applications developed by UNESCO along with satellite visualization techniques. A classified evaluation was carried out examining the cause and extent of damage

5 Many thanks to UN-Habitat for the recommendations and reference material supporting this case.

to buildings and public infrastructure from issues of armed conflict, lack of maintenance, shortage of repair funds and poor administrative supervision. Local inhabitants – notably a large proportion of young people – participated in the survey and field trips were made to communities for consultation with local residents. UNESCO used the results of the final survey as an important reference for the next step in the preservation and restoration of the city's heritage, and as a basis for identifying priority sites for future cash for work projects.

Based on the damage assessment, urban rehabilitation guidelines were designed aiming to help all staff involved in the project to conduct the necessary surveying, planning, maintenance, rehabilitation and monitoring operations for buildings, public facilities and urban landscapes in the old city in compliance with recognized conservation standards and principles. Overall, the aim has been to ensure the preservation of historic structures and their use as a living environment with the highest possible level of authenticity and safeguarding. The guidelines take into consideration the extremely challenging local context with issues of armed conflict, the COVID-19 pandemic, economic decline, humanitarian crises and fragmentation in local governance. The guidelines, therefore, do not set out explicit requirements for action as previous guidelines did but instead outline the principles and main methods of heritage preservation encouraging the local building industry to put its own restoration experience to work. It is worth noting that since most residents generally lack any knowledge of building conservation and cannot digest complex expertise, the resident-oriented guide uses more accessible language to explain conservation and restoration knowledge.

2. Providing heritage restoration-related work opportunities for the urban youth

Years of war and frequent natural disasters have resulted in a weak economic base and a long-term high youth unemployment rate in Yemen. Urban heritage conservation work is providing many job opportunities for local youth such as strengthening the structures of historic buildings; repairing the roofs, facades, windows and other building details; and restoring and optimizing the old bazaars, public squares, sanitation facilities and other infrastructure in the ancient city (see Figure 5.1).

The youth who have gained employment not only have a steady income but also gained professional training in traditional construction skills and the restoration of cultural heritage.

Most importantly, the project is directly benefitting the local community. As of March 2021, 151 historical buildings have been maintained and rehabilitated with employment opportunities provided to 2,350 young people (10 percent of whom are women), helping to improve their family situations (over 8,000 family members are beneficiaries), with more than 8,000 urban heritage elements across the four cities subject to survey and assessment (see Figure 5.2).

Source: United Nations Educational Scientific and Cultural Organization. URL: https://en.unesco.org/news/unesco-and-its-partners-save-78-historic-buildings-collapse-yemen (Accessed: 18/07/2022)

Figure 5.1 Local residents restoring an urban cultural heritage site

Source: United Nations Educational Scientific and Cultural Organization. URL: https://whc.unesco.org/fr/canopee/yemen (2020) (Accessed: 27/09/2022)

Figure 5.2 Local women engaged in rehabilitation work

3. Establishing a small grants programme to promote the creative economy

To increase access to employment opportunities for youth in the four cities, the Cash for Work project is not limited to the cultural heritage field but also aims to more comprehensively explore the potential of the cultural and creative economy. UNESCO, together with EU and the Small and Micro Enterprise Promotion Service (SMEPS), launched a small grants programme to help select CSOs improve their cultural development planning and income generating capabilities. This provided more job opportunities for young local artists and cultural industry practitioners, improving their income levels and enhancing the vitality of the country in the field of cultural creativity. The small grants programme selected eight pilot projects – ensuring geographic diversity to cover all four historical cities – including documentation of heritage architecture in private houses, preservation of heritage documentary collection and gender-focused training in handicrafts. The small grants programme will offer to fund pilot projects varying from USD 10,000 to USD 40,000, distributing it to young cultural practitioners under the Cash for Work methodology. More than 500 young people (both male and female) have already benefited from the programme.

A series of cultural and creative training sessions were also organized by UNESCO and NGO RNW Media to provide small grant recipients and local cultural industry practitioners with key knowledge and skills on the sustainable management of urban heritage, museum collection conservation, the use of grants, communication, monitoring and assessment skills, and digital participation (in which 10 residents from Aden participated) (see Figure 5.3). In addition, online courses, including those on how to better use social media tools, were offered for creators to strengthen their understanding of local heritage diversity and tell Yemeni stories. The training directly benefited 244 young Yemenis, with direct compensation for their participation in the workshop and subsequent work.

4. Promoting visibility on the effectiveness and benefits of urban heritage conservation

To enhance visibility on the potential of heritage preservation as a core tool for sustainable development, the Cash for Work project has capitalized

Source: United Nations Educational Scientific and Cultural Organization. URL: https://en.unesco.org/sites/default/files/event_booklet_reduced.pdf (Accessed: 18/08/2022)

Figure 5.3 Workers in the cultural and creative industry participate in a training workshop

on the media to unlock value. Firstly, it has produced publicity content online and short documentaries with UNESCO, RNW Media and SMEPS joining forces to launch a campaign covering 84 topics and reaching 6 million people to raise awareness on cultural heritage conservation. On Manasati30, a content platform run by RNW Media, multimedia content was viewed approximately 3 million times with 17,700 comments and 11,400 shares. With the support of popular Yemeni vlogger Somaya Jamal as a host, a five-episode video series was created illustrating Yemen's cultural heritage through a personal journey, taking viewers on a tour of the historic cities showcasing local architecture, handicrafts, traditional practices, and investment in and protection of cultural heritage. The series, Turathna (Our Heritage), had reached over 1.3 million views by June 2022, educating many young people on the Cash for Work programme.

Secondly, organization of youth representatives to participate in cultural heritage thematic campaigns in the different cities was also undertaken. Activities included: ① Taking part in online surveys about cultural heritage and thinking about issues including the current risks to cultural heritage, methods to raise awareness on cultural heritage, strategies for its protection and methods for young people be involved in protection efforts; ② Creating and posting cultural heritage-themed audio-visual content on social media; and ③ Organizing two interactive seminar training sessions where experts led young people on a field

trip to experience intangible cultural heritage elements such as music, dance, food and to discuss how to start cultural entrepreneurship. A video produced by RNW Media received over 800,000 views.

Thirdly, creative activities were encouraged through film production. To promote engagement among young people in creative activities and use the power of culture for personal growth and industrial development, UNESCO, in collaboration with EU, SMEPS and the New York Film Academy, produced documentaries on Yemen's cultural heritage. Twelve young Yemenis (6 men and 6 women) received professional guidance from internationally renowned filmmakers to produce 12 documentaries on cultural heritage representing the unique and diverse culture of the region from different perspectives. The documentaries have served as a key means to promote visibility on these elements.

Reference experiences

1. Promoting a Cash for Work project methodology that educates and upskills local people on cultural heritage protection is key to promoting local employment and generating livelihood opportunities

As core components, buildings, infrastructure and public spaces constitute the tangible cultural heritage of the four ancient cities. Restoration and protection work has created a large number of jobs for residents in particular youth, integrating them into formal employment thus improving their livelihood opportunities and long-term prosperity. As a key measure, the project emphasized the principle of 'training for skill and expertise' and provided young people with practical skills in construction and restoration, training workers locally. It also offered extensive cultural and creative industry training for young people engaged in this arena, enabling them to establish their own business or gain employment in the field; a measure that has reinforced the critical importance of enhancing the skills and capacity of individuals to ensure their ability to flourish independently in the long-term. It is important to note that to avoid unemployment following completion of the project, the authorities should continue skills training to enhance employment stability and sustainability.

2. The Cash for Work model helps to strengthen social participation and social cohesion in local urban communities

Engaging local youth in the protection of endangered cultural heritage not only provides young Yemenis with jobs to sustain livelihoods, but also offers substantial social significance. It helps to create economic value for unemployed youth, gain them social recognition and enhance their self-realization, thus providing more incentives than direct financial assistance. Where 70 ~ 80 percent of Yemen's urban heritage is comprised of private residences, ensuring local communities are one of the main actors in urban heritage protection is paramount. Community-led expertise training can effectively compensate for the inadequacies of the traditional top-down model which leverages governments and professionals solely. Residents may gain economic benefits and enhance their understanding and recognition of heritage values and conservation concepts. Working in cooperation to protect their own community can help to bind people closer together, enhancing their sense of belonging and identity, and subsequently bolstering community cohesion and promoting more open dialogue and peaceful interactions. This human-oriented model pays more attention to the livelihood significance of individuals and the improvement of community living environments, and strives to maximize the number of direct beneficiaries of heritage conservation for local residents.

3. Cultural heritage preservation efforts should mainstream gender equality to improve women's rights and promote equitable development

Women's participation and equal pay for equal work are both important objectives in the Cash for Work project. Although much physical restoration work has been undertaken by male employees, the project also ensures the equal participation of women. Creative solutions were deployed to maximize female involvement. Their employment in cutting and removing sesame trees which threatened local agricultural resources and urban heritage is one example. In addition, with the increasing acceptance of new jobs besides traditional services and textile work, women are also encouraged to join cultural and creative industries and develop their skills into sustainable long-term career ventures. Of the 500 creative industry

workers who acquired creative entrepreneurship skills, 200 were women. Despite the progress made, challenges in ensuring women's equal participation in the workplace remains with female participation in the online world still comparatively low, thus limiting the introduction of new perspectives and ideas, and hindering promotion of their digital and media literacy. In order to further break down gender barriers in the workplace, SFD established a gender-focused working group to provide online training on gender equality for people involved in the Cash for Work project and have planned to introduce gender equality checklists in future projects.

Belo Horizonte, Brazil: Creative Horizon – Renewing Belo Horizonte's Historic Cultural Neighbourhood of Centro-Lagoinha

Case background[6]

As Brazil's first planned capital, Belo Horizonte has long been one of the nation's most important cities. The birthplace of architectural modernism and cultural heritage, the city is today a dynamic hub of fashion and gastronomy, accommodating an eclectic mix of culture and art, and enmeshed with culturally historic buildings and activities. The city boasts several striking cultural features including the Pampulha Modern Ensemble – a UNESCO recognized World Cultural Heritage Site as of 2016 – which combines architecture, landscape design, sculpture, painting and other art forms in an innovative fashion. In addition, Belo Horizonte is renowned for its innovative cuisine containing flavours and cooking styles passed down for generations, and which reflects the local cultural understanding and respect for the natural environment. Possessing a rich history, Belo Horizonte's creative urban outlook and inner vitality laid the foundation for the development of a creative economy which attracted 104,000 creative industry jobs to the city in 2017.[7]

With this respect for the intrinsic value of the city, Belo Horizonte seeks to use culture as a tool for sustainable urban development. Accordingly, the city's Economic Development Bureau established the Creative Horizon project, a strategic cross-departmental programme to help create an environment in which creative activities can flourish in the city. It is implemented in two different aspects. Firstly, through creative projects (e.g. culture, entertainment, fashion, design, gastronomy, and technology and innovation) it identifies talent in the city's neighbourhoods and promotes projects that contribute to the formation of the creative economy chain. And secondly and simultaneously, the city is divided into different communities to identify the challenges and obstacles each community faces, helping unlock its potential as a creative economy investment destination.

Centro-Lagoinha, located in the north-west of the city, is the first community to benefit from the project. A neighbourhood of great disparities, as the city's first working-class neighbourhood, Centro-Lagoinha was the cradle of Italian immigration during Belo Horizonte's construction, accommodating a large number of immigrant families who traded as vendors and artisans, it was a hotspot of creativity, culture and history; rich in bars with a thriving samba and Bohemian music scene. However, due to its close proximity to the city centre, the neighbourhood has experienced a series of unplanned urban development projects over the past 50 years which has had a detrimental impact on the local environment, most notably the Lagoinha Road complex built in the 1980s which strengthened the connection between downtown Belo Horizonte and the city's periphery. Fearing that entrepreneurs might invest in the site at any time, the inhabitants gradually moved away reducing the number of formal cultural venues and performances. Compared with the prosperity of new infrastructure, historic buildings are today long deserted and used by the homeless, drug abusers and illegal trades which has led to an increased rate of crime. This area has

6 Many thanks to UN-Habitat for the recommendations and reference material supporting this case.

7 Metropolis Urban Sustainability Exchange. URL: https://use.metropolis.org/case-studies/creative-horizon#casestudydetail (Accessed: 30/06/2022).

since become a microcosm of the marginalization of the city, facing challenges including the absence of historical heritage preservation; inadequate protection for vulnerable groups; and a lack of community security.

Viewed as an urban heritage area since the 1990s, Centro-Lagoinha's historical and cultural values have been vastly underestimated. It was designated as the first location for attention under the Creative Horizon project which aims to restore and revitalize the area to allow creative activities to prosper once again.

Implementation process

As the main facilitators of the project, Belo Horizonte's Municipal Secretariat for Economic Development, along with additional areas of the City Hall (e.g. culture, tourism, urban policy, social assistance, technical, information and social communication, and security departments), the private sector and the local community have all played major roles. The project team received free consulting from SAP Social Sabbatical whereby participation in the SAP Social Sabbatical and Pyxera Global Programme provided knowledge and structure for the Creative Horizon project through the integration of specialist guidance, bolstering technical capacity within the team across the project development phase. Several common interventions were identified as the main elements for development to revitalize and stimulate creative sectors promoting culture and tourism; improving the business environment; promoting socio-productive inclusion; increasing public security; and urban requalification and renewal.

1. Diagnosing the cultural and touristic potential of Centro-Lagoinha

To promote greater dynamism in local tourism and culture, efforts have been articulated between the Municipal Department of Culture and Beltour, a municipal tourism company from the city. This collaboration has helped to map traditional cultural manifestations and contemporary cultural production across the neighbourhood, gauging the potential of local infrastructure for investment and tourism opportunities. In addition, they have worked to promote the performance of local actors that provide new experiences and forms of interaction between tourists and local residents. Accordingly via cultural cartography, activities such as the mapping of services, local attractions, cultural economic sectors and cultural events plus historical surveying were all highly valuable to help contextualize the importance of local cultural heritage. It was found that the integration and promotion of gastronomy into Centro-Lagoinha was of high value (with 66 gastronomic establishments found present following reporting). In addition, to draw in visitors and tourists, sightseeing tours and cultural events were also expanded.

2. Prioritizing cultural preservation through the requalification of Centro-Lagoinha

Through Creative Horizon, the assurance of logical spatial transformation that preserves cultural heritage in line with the generation of a creative economy has been key. As part of a series of physical urban interventions, Centro-Lagoinha's requalification proposal has thus sought to re-establish the relationship between the existing material heritage of the neighbourhood and the city whilst enhancing local dynamism through the recovery of its existing cultural heritage. Strong physical barriers such as the railway, the Lagoinha road complex and the Ribeirão Arrudas canal which separates Lagoinha from the central region, have been major hurdles for development. To reconnect Centro-Lagoinha, a pedestrian terrace that establishes a connective zero point and an architectural and conceptual landmark is planned, with the establishment of commercial activities such as restaurants, nightclubs, garden areas amongst other uses envisioned to drive creative sector integration. Through the Lagoinha and Bonfim Cultural Corridor Programme (one of the oldest and most traditional pericentral regions of the city), cultural assets are under protection to help transform the area into a new regenerated space. Combining the preservation of cultural assets and promotion of creative sectors through spatial transformation has therefore been central.

3. Revitalizing urban spaces through art

Art has been viewed as an instrumental tool to help regenerate neglected urban spaces in the neighbourhood. As a movement to help transform

unfriendly parts of the urban environment into more welcoming and beautiful spaces, and better connect the city with its citizens, the Gentileza (kindness) Lagoinha project was initiated. Here, over 100 local artists were involved in painting murals and street art across different parts of the neighbourhood in a process of renovating urban infrastructure through art (see Figure 5.4). The internal walls of the Liberalino Alves de Oliveira Cultural Centre located inside Lagoinha market, as well as the walls surrounding the IAPI complex on Araribá and José Bonifácio streets, were painted in March 2019 in a day of art and leisure for the local community. In addition, to acknowledge the neighbourhoods historic, secular relationship with Italy, the renowned Italian urban artist Alice Pasquini was invited to paint a 400m long walkway and its surroundings, creating an open-air art gallery along the footbridge that connects Praça Vaz de Mello to the Lagoinha bus station.

4. Increasing the visibility of local culture

To increase awareness and understanding of the value of Lagoinha's local cultural heritage, several key activities were promoted. In cooperation with NITRO Histórias Visuais, the Municipal Department of Culture and the Municipal Foundation of Culture launched the Residents – A Heritage Humanity project. Running from June to July 2019, the project integrated an art installation across public spaces, mixing audio-visual production with photographic exhibitions and storytelling to facilitate education on cultural heritage. Through the revival of memories of former and current residents, workers and regular visitors, the project helped to awaken the realization that Lagoinha is part of their own history and encouraged them to become valuable custodians of the neighbourhood. Marquees were set up in five different local areas creating inviting spaces for people wishing to share their version of Lagoinha's history, values and aspirations, and

Source: PúBLICA. URL: https://publica.art/en/portfolio/gentileza-lagoinha-en/ (2019) (Accessed: 05/07/2022)

Figure 5.4 Street art developed through the Gentileza Lagoinha project

participants were also called upon to celebrate their contribution to cultural heritage in the neighbourhood. Subsequently, through Moradores (residents) da Lagoinha all materials (photos/videos/testimonials) were transformed into a photographic exhibition with 12 panels of portraits of the characters of Lagoinha, a short documentary film, a photographic clothesline as shown in Figure 5.5, and several interventions in the streets and buildings of the community. Activities such as these have helped to increase an appreciation of local cultural identity, and it was an important event in heritage education through exchange, interaction and memories. Following this, the Cura Lagoinha Cultural and Historic Festival was set up (running from 5—15 September 2019) which included a gastronomic fair, shows, exhibitions and the chance to follow the creation of urban murals in real time.

Source: Belo Horizonte City Hall. URL: https://prefeitura.pbh.gov.br/noticias/lagoinha-recebe-o-projeto-moradores-humanidade-do-patrimonio (2019) (Accessed: 18/05/2022)

Figure 5.5 The community enjoys the photos in the Moradores da Lagoinha project

5. Inspiring tradition, culture, creativity and innovation through creative sector development

With 104,000 jobs in the creative economy, Belo Horizonte is the third largest creative hub in Brazil, comprising 2.26 percent of the nation's total creative economy jobs (21.5 percent of Belo Horizonte's companies). As a rapidly emerging sector, the promotion of local entrepreneurship through creative industry was made central for socio-economic development in Centro-Lagoinha, leveraging cultural heritage to attract investment and business. A creative economy map was also produced in June 2019. Through the Creative Horizon programme, courses and workshops were offered to the local population – specifically those in vulnerable situations – to provide professional opportunities in the creative sector and foster socio-productive inclusion. Building on its historic heritage as a gastronomy hub, vocational courses were opened across the food industry in December 2020 with 40 vacancies in confectionary, 50 vacancies in gastronomy and 60 vacancies in the baking industry. The professional school Raimunda da Silva Soares was opened offering 831 spots for professional qualification courses. The reoccupation of locally listed properties was also promoted, most notably in Rua Itapecerica, home to many antique stores and precious houses most of which are under preservation orders due to their degraded state. A women's civic-service centre was established on Rua Itapecerica with 80 spots opened for entrepreneurship and qualification courses.

Reference experiences

1. Identifying the strengths and weaknesses of local cultural heritage is crucial to leverage culture as a sustainable development tool for urban revitalization and prosperity

As integral elements of the city and urban life, cultural heritage and creative activities have spearheaded the development of Belo-Horizonte's regeneration model in the Centro-Lagoinha neighbourhood. Where cultural strengths were locally identified and diagnosed, the process of mapping and understanding local cultural heritage was central to facilitating responsive urban development in tune with the values of local people and the community. In addition, the role of cultural heritage in advancing socio-economic growth can be seen as significant, further highlighting the potential of historic cultural assets to unlock business opportunities, stimulate investment and create socio-economic value. However, it is important to note that the process of urban regeneration is complex, and only by fully understanding the factors hindering the development of local culture can we know the deep-rooted issues. The process of the mapping, identification and diagnosis of local culture is thus not only crucial for promoting urban development but also essential to building sustainable local development paths. Culture and heritage should be considered as key metrics in

the delivery of socially equitable development and in the paradigm of sustainable cities.

2. Strengthen the interaction between urban inhabitants and cultural spaces to promote a greater human connection to the city

In driving sustainable urban development, this case attached great importance to the role of cultural space based on historic heritage and the use of open spaces. Residents were encouraged to participate in the micro-transformation of space, providing them with a full understanding of undeveloped resources and emphasizing the concept that true cultural spaces are those that are used by people. This has enhanced the sense of community by cultivating a stronger connection to the culture and history of the neighbourhood. Where the role of culture in urban regeneration is still poorly understood, it is important for cities and urban decision-makers to go beyond traditional top-down urban cultural strategies and rediscover the spaces in which local culture and mobilization capacities are attached. Through this process, community members can be centred as core actors in the promotion of culture-led development, and hence empowered to participate in and shape the process of sustainable urban development. The integration of street art (such as murals and paintings) in underutilized or neglected parts of Centro-Lagoinha's urban fabric has improved the quality of the urban space and the living experience of local inhabitants, encouraging a closer interaction to their environment. Urban street art is a powerful tool in reflecting urban experiences, provoking engagement between people and their environment and consequently helping to re-socialize urban spaces. By increasing encounters with art in everyday city life, cities should seek to incorporate street art and other art installations to help create social interstices and unlock new ways of experiencing the city. Engaged urban art should be encouraged both as a mechanism for beautification and for reconceptualizing deprived urban spaces. As exemplified by activities in Centro-Lagoinha, art can have a profound impact on the remembering and revival of cultural heritage, re-emphasizing its value in urban cultural development.

3. Understand the value of creative vocational training in driving inclusive and equitable urban development

In addition to enhancing the public awareness and recognition of cultural values, the Creative Horizon project has promoted vocational training and opened up job opportunities, especially for vulnerable groups such as women. Where the training started in cuisine, of which the city prides itself as a creative hub, it naturally attracted citizens and greatly increased the effectiveness of governmental intervention. In tandem, small and micro local food enterprises amalgamated, helping citizens who completed vocational training to enter the labour force. To develop local creative vocational training, it is therefore important to first determine the most favourable field where labour skills can quickly be applied into the labour force based on the specific conditions of the local creative market.

Shanghai, China: Stories of Shanghai Architecture – Revealing Culture through Historical Buildings

Case background[8]

The uniqueness of Shanghai is its intense collision of multiple cultures that have been skillfully transformed into the driving force of urban development forming the highly distinctive 'Shanghai culture'. Shanghai culture is multi-mixed, superimposed and eclectic providing Shanghai with a complex and diverse architectural form. The protection of architectural and cultural heritage in the city has been slow and a number of old buildings have already been demolished.[9] Following rapid, large-scale urban construction in the 1980s and 1990s, the city council began to think more carefully about the protection of architectural and cultural heritage. However, due to the differences in cultural traditions, management mechanisms, building regulations, building materials and the particularity of Shanghai's architectural culture, it is difficult to fully apply international standards of urban cultural heritage

8 Many thanks to the Shanghai Municipal Administration of Culture and Tourism for the material referenced in this case.

9 Shiling, Z. The Protection of Architectural-Cultural Heritage in Shanghai and its Reflection. Journal of *Architectural Heritage*, Inaugral issue 2016, Issue 1 (2016).

protection. This has consequently made it an incredibly urgent matter to find an appropriate local cultural heritage protection mechanism.

After nearly 30 years of exploration, Shanghai has now developed a cultural heritage protection method that conforms to the characteristics and reality of local historical buildings. However, along with the depth of conservation actions, the city is also facing another pressing issue of how to help residents living in traditional blocks realize the importance of maintaining architectural and cultural heritage, and how to encourage them to participate in maintaining the vitality of historic neighbourhoods. Compared to more modern areas in the city, traditional neighbourhoods are bound to face housing challenges such as mismatched infrastructure, aging buildings, and functional and structural deterioration over time. In this regard, residents are generally presented with two choices; to actively voice their poor living conditions and question the action of preserving and protecting old neighbourhoods; or to relocate to a new urban area. In this scenario, even if the old neighbourhoods are adequately maintained and repaired, the unique regional folk culture and collective memory carried by them will tend to dilute or even disappear due to the loss of the indigenous people.

To sustainably manage these challenges fundamentally requires improvements to be made to the realistic function of historic neighbourhoods and buildings based on the notion of 'restoring the old as the old'. Concurrently, Shanghai municipal council must also build an emotional connection between local people and the historical and cultural heritage, firstly to enhance public understanding as to the significance of the old buildings, and secondly to encourage a greater willingness among local people to participate in the renewal of the vitality of old buildings. It is important to note that these regulations are not within the capacity of urban planning programmes and therefore the council leveraged culture as a means to solve the issue of historical lineage continuation and proposed the Stories of Shanghai Architecture project.

Implementation process

Prior to the official launch of the project, Shanghai council designated 44 historical landscape preservation areas and committed to the protection of 64 roads. Protection measures will ensure the roads maintain their original width and scale, and strictly control the building height, volume, style and spacing of development plots along the routes. The initiative sparked the enthusiasm of local writers who consulted a wealth of historical material and traced back memories and stories from these neighbourhoods in a mix of reality and fictional words. Residents and visitors have subsequently followed these guides when visiting the streets, adding new personal memories to the old stories. The Shanghai-based writer Chen Danyan wrote in his book *The Streets Never Broadened* published in 2008: 'In this way, the memory and history of the city becomes a tangible part of city life, rather than disappearing without a trace.'[10]

The Shanghai Master Plan (2017—2035) launched in May 2017, firmly articulates the vision in Shanghai to build a city where buildings are enlightening, streets are stroll-friendly and communities are endowed with tenderness. The Master Plan gives great respect to the history of the city, and captured the interest and resonance of local people. A large number of books and online articles on Shanghai's historical buildings and monuments have since been published and in 2018, the Shanghai Municipal Government officially launched the Stories of Architecture in Shanghai project led by the city's Cultural and Tourism Bureau, recently upgraded from a pilot project into a more comprehensive undertaking.

1. Opening buildings and introducing scan code reading to enhance public knowledge on building history

The Stories of Architecture in Shanghai project covers a multitude of buildings across different historical periods with three core building typologies: ① Buildings at all levels of heritage protection units; ② Excellent historical buildings and preserved buildings; and ③ Landmark buildings built in modern times such as

10 Danyan, C. The Streets Never Broadened (2008).

private garden houses, Lilong folk houses and classic buildings on the waterfront. The Stories of Architecture in Shanghai project was gradually expanded from 6 downtown urban areas to all 16 districts across the city. More old buildings have been opened to the public freely, with quick response (QR) codes presenting visitors with bilingual introductions to enhance their understanding of the building's history in addition to video playback and virtual reality interaction. By early 2022, the number of open buildings increased from almost 100 to 1,056, and the use of QR codes from approximately 400 to 2,957.

2. Expanding project coverage through social participation and universal interaction

The Stories of Architecture in Shanghai project has led more citizens and enterprises to participate through five public activities: ① Via public comments by cooperating with Meituan, an e-commerce platform engaged in local retail and life services, citizens can make suggestions online. Nearly 10,000 people participated and the cumulative reads for the topic reached 88.6 million; ② Public storytelling was initiated whereby through cooperation with Dragonfly FM, an online audio platform, participants from 4 to 80 years old were invited to tell stories about old houses in Shanghai thereby gradually establishing an architectural story database; ③ In cooperation with Tencent, citizens were able to submit photos through the WeChat platform exploring stories around the architecture and gradually establishing an image database. The activity page had nearly 700,000 views with over 10,000 participants; ④ Public tours were established in cooperation with RED, an online shopping and social platform, making offline buildings a hot topic online and a popular photo spot for citizens attracting over 43,470,000 reads, and more than 2,000 participants; and ⑤ Public innovations were used whereby in cooperation with the local physical bookstore Dayin Book Co., Ltd., a culture and creative products design competition was held and the best 10 products selected. The activity attracted 321 units and/or individuals to participate and received more than 1,000 entries.

3. Forming culture and tourism cooperation through transformative innovations

Within the Shanghai Tourism Festival 2021, under the theme Stories of Architecture in Shanghai – Tour within the City, completed a 24-hour live broadcast jointly planned and launched by over 20 local audio-visual platforms, news media and social media outlets was completed. The live broadcast covered 24 hours from dawn to dark as the timeline, with footsteps travelling around the city introducing more than 150 outstanding buildings in Shanghai to audiences and listeners online (see Figure 5.6). The live broadcast interviewed several famous architects from China and other countries who spoke about their unique insights into the Stories of Architecture in Shanghai project. Designers included Benjamin Wood, the American designer of Xintiandi opened in 2003 as a pedestrianized zone of bars, restaurants and boutiques in the heart of the city; Kengo Kuma, a Japanese designer of Shipyard 1862 Renovation on the southern shore of Huangpu River in the financial district of Pudong in Shanghai where an old shipyard built in 1972 was transformed into a mixed-use complex with shops, a theatre and an exhibition space; and Yichun Liu, a Shanghai based designer of Long Museum West Bund, an art museum located on the bank of Huangpu River in Shanghai, the site of which was originally used as a wharf for coal transportation. Tour buses, temporarily serving as festival exclusive shuttle lines as shown in Figure 5.7, were equipped with professional guides, travelling along the Huangpu River, passing by classic city landmarks.

Stories of Architecture in Shanghai is becoming an important new cultural intellectual property (IP) and

Source: Xinmin Evening News. URL: https://wap.xinmin.cn/content/31868753.html (2020) (Accessed: 16/05/2022)

Figure 5.6 Citizens participate in urban walking activities as part of the Stories of Architecture in Shanghai project

therefore the city is attempting to fully utilize the creative value it offers in two ways. Firstly through holding the Stories of Architecture in Shanghai cultural and creative market annually in which almost 1,000 related cultural and creative products have been launched in the past two years; and secondly through the selection of classic buildings for piloting, which aims to promote the sales of unique gifts and souvenirs related to that building. The Wukang Mansion exemplifies this,[11] where various products such as pocket books, ice cream, coffee, biscuits, aromatherapy and a themed post office have been developed (see Figure 5.8).

Source: Shanghai Municipal Bureau of Culture and Tourism. URL: https://www.meet-in-shanghai.net/travel-theme/line/detail.php?id=5384 (Accessed: 30/07/2022)

Figure 5.7 A shuttle bus operating on a special bus line for the Stories of Architecture in Shanghai project

Source: Shanghai Municipal Administration of Culture and Tourism. URL: https://chs.meet-in-shanghai.net/travel-class/news-detail.php?id=35045 (2022) (Accessed: 18/05/2022)

Figure 5.8 A range of creative products based on the new cultural intellectual property

11 Wukang Mansion, formerly known as the Normandie Apartments, is a protected historic apartment building in the former French Concession area of Shanghai. Designed by the Hungarian-Slovak architect László Hudec and completed in 1924, the building has been the residence of many celebrities.

4. Promoting service system construction through resource integration and systematic management

To strengthen resource integration and improve the capacity of service management, Shanghai municipal government developed a service system for the project which included the establishment of a one-stop platform for public access to all relevant information in a WeChat mini programme. In addition, an alliance was established to connect more than 60 organizations and jointly promote the innovative development of the project including owners of the buildings; construction enterprises; cultural, business and tourism-related enterprises; scientific research institutions; cultural institutions and museums; social organizations; and new media platforms. The city also released an official logo for the project as well as unified service standards for the building opening process along with QR codes settings. Moving forward, management measures at municipal level will be instilled as well as a voluntary story-telling team comprising experts, citizens and guides from cultural heritage, architecture, tourism and media fields.

5. Enriching the connotation of waterfront public space by integrating culture and architecture resources

The Stories of Architecture in Shanghai practice is gradually being introduced into broader urban public space governance. It is important to highlight that the key project Huangpu River & Suzhou Creek has been promoted by the government for many years. This project aims to optimize the waterfront space environment around the river and creek, the main rivers of Shanghai. The river is the best vehicle for people to relive nostalgia and feel the sentiment and charm of the city. Enlightened by Stories of Architecture in Shanghai, the Huangpu River & Suzhou Creek project explored historical heritage along the river and signified the importance in harmonizing historical architecture and modern lifestyles by embedding new cultural and artistic functions into the city's heritage. Riverside in the Xuhui District exemplifies this where by following the 'culture first' principle, old factories were transformed and revitalized into galleries, art and design organizations; and abandoned docks transformed into public green spaces. The former site of the Shanghai cement factory and the workshop of an aircraft manufacturing plant were redeveloped to hold a series of cultural activities such as the Shanghai West Bund Music Festival and West Bund Art and Design. The Pudong New Area District strived to build a cultural cluster on the east bank of the Huangpu River, whilst the original coal silo and its corridor were transformed into the Modern Art Museum Shanghai. In addition, the Shanghai Shipyard locomotive building workshop is now a fashion art centre and the 80,000 ton silo at the Minsheng Terminal was opened to the public serving as the main exhibition hall of the 2017 Shanghai Urban Space Art Season.

Yangpu District has a long industrial culture of over a century, expanded by the restoration and renovation of historical buildings, compounding the functions of tourism, culture, sports and exposition. These remodelled industrial heritage sites, which integrate into the historical landscape organically along the riverside, not only serve a recreational function but also instil the community's sense of pride and belonging to Shanghai. Excellent examples include: ① The YONG AN textile warehouse completed in 1922 which witnessed the rise and fall of China's cotton textile and logistics industries over the past century, and the rapid development of Shanghai as an international city; ② The MAO MA textile warehouse, which has stood for more than 100 years, designed by the Palmer & Turner Group, a British-owned architectural and engineering firm with a long history in the far east; ③ The Tabaco Warehouse built in 1920 which is now restored as an inclusive urban complex with a transportation hub, park and public services; and ④ The Ming Hua Sugar Factory built in 1924 covering an area of approximately 51,159 m^2, originally designed by a Japanese architectural firm in which restoration and utilization of historical buildings have compounded tourism, culture, sports and exposition functions (see Figure 5.9).

Reference experiences

1. Promote measures that guide citizens to better recognize the value of local heritage and form a connection to the city through extensive participation

Through the Stories of Architecture in Shanghai, local writers, artists, professional scholars, citizens and enterprises have all participated in the collection, compilation, writing and dissemination of architectural

Source: TJAD/Original Design Studio. URL: https://www.gooood.cn/renovation-of-ming-hua-sugar-factory-china-by-tjadoriginal-design-studio.htm (2021) (Accessed: 27/09/2022)

Figure 5.9 The new exterior view of the Ming Hua Sugar Factory

historical materials to varying degrees. Professional groups used literature research, field research and oral history as methods to record the design and historical background of local buildings. Non-professionals incorporated their memories of architecture into historical material, enriching the emotional link to the past, and many resident volunteers shared their personal stories related to architecture to visitors. This has highlighted how extensive community participation helps residents to recognize and respect the value of their local heritage. Reading and sharing their own personal stories, a sense of belonging or a deeper connection to their home may resonate with them and can enhance emotional connections to old buildings when walking along roads and telling relevant stories. Citizens gradually become guardians and storytellers of the architecture, rather than visitors and readers, helping to revitalize and replenish the historical neighbourhoods. The trust established from their participation represents an effective resource for urban governance.

2. Understand the value of creating an aesthetic, 'readable' environment to strengthen attachment between inhabitants and the city

Shanghai itself is a city with a strong reading culture. The 2021 Citizen Reading Status Survey showed that 92.63 percent of the city's residents read physical books, and 91.90 percent read digital books. Across 76.54 percent of respondents, it was indicated that reading enhanced their happiness.[12] In recent years, the concept of 'greater reading' has become

12 Shanghai Municipal Press and Publication Bureau. URL: https://www.thepaper.cn/newsDetail_forward_17762805 (2022) (Accessed: 07/07/2022).

increasingly popular with reading expanding from that of solely physical books to a more comprehensive, multi-dimensional experience. Following this trend, the Shanghai municipal government chose to expand reading to cover buildings which greatly aroused the interest of the public and earned their support. Through multi-dimensional reading methods such as architecture-related book reading, audiobooks and online interactions with architecture, the council further deepened the reading experience and made it available to all. Thanks to the participation of local writers, artists, architectural designers and historians, the citizens' understanding of the historical context and architectural aesthetics of the city deepened and has helped to improve the quality of Shanghai's civilization, aesthetic cultivation and humanistic sentiment among the urban population.

3. Bolster creative intellectual property and accelerate the development of cultural tourism to enhance Shanghai's visibility

The Stories of Architecture in Shanghai project, in combination with the development of the tourism and creative industry, gradually formed a new cultural IP that had spillover effects and contributed to the city's economic development. The Shanghai municipal government used IP to establish unique tourism routes and develop cultural and creative products. The COVID-19 pandemic drastically impacted the tourism industry and local historic architecture became a supplementary resource that benefited citizens. The official logo of Stories of Architecture in Shanghai represents a visual symbol of Shanghai, reflecting the city's unique connotation. Critically, it built a new cultural brand and provided a new way to enhance storytelling in the city, broadening new possibilities for Shanghai's global visibility. Shanghai's historical buildings should be 'read' and appreciated in the context of the overall neighbourhood, in the context of the daily life of its citizens and the framework of the city's development moving forward. In this sense, to promote and publicize Shanghai's architecture is to enhance the visibility of the city and promote the origins, spirit and character of Shanghai globally.

East Jerusalem, Occupied Palestinian Territories: The Rehabilitation of the Dar Al-Consul Complex – a Journey from Endangered Historical Buildings to a Liveable Cultural Hub

Case background[13]

Jerusalem is an ancient city with a long history and rich culture; however, the city's growth and development has been slowed due to prolonged and complex conflict. Since 1967, rapid settlement expansion has resulted in the fragmentation of Palestinian space,[14] with many Palestinian neighbourhoods enclosed by settlements and service roads that have severely restricted their urban expansion and access to land. Where currently under occupation according to international laws, East Jerusalem is subject to ongoing issues of zoning and land grabbing, violations that affect the existence and livelihoods of Palestinians in the Old City.[15] According to the United Nations Office for the Coordination of Humanitarian Affairs,[16] 35 percent of East Jerusalem has been confiscated for Israeli settlement use with just 13 percent of East Jerusalem zoned for Palestinian construction, whilst at least a third of all Palestinian homes in East Jerusalem lack Israeli-issued building permits which are difficult to obtain, putting up to 100,000 residents at risk of displacement. Some 1,400 houses and other structures in East Jerusalem have been demolished by Israeli authorities,[17] and at least 180 Palestinian households

13 Many thanks to the UN-Habitat Regional Office for Arab States for their support in providing reference material for this case.

14 United Nations Office for the Coordination of Humanitarian Affairs occupied Palestinian territory. URL: https://www.ochaopt.org/sites/default/files/fragmented_lives_2016_english.pdf (2016) (Accessed: 10/09/2022).

15 The Old City represents a 0.9 km^2 walled area in East Jerusalem.

16 United Nations Office for the Coordination of Humanitarian Affairs. URL: https://www.ochaopt.org/content/west-bank-east-jerusalem-key-humanitarian-concerns (2017) (Accessed: 10/06/2022).

17 United Nations Office for the Coordination of Humanitarian Affairs in the occupied Palestinian territory. URL: https://www.un.org/unispal/wp-content/uploads/2017/12/OCHAFACTSHEET-211217.pdf (Accessed: 15/09/2022).

are at risk of forced migration due to settler activities, especially in the Old City, Sheikh Jarrah and Silwan neighbourhoods. Many families therefore lack sufficient space to live with some completely void of housing and at risk of displacement. In addition, many residents in East Jerusalem are short of public services and infrastructure including public spaces, adequate transportation systems, education and health facilities with 76 percent of residents living under the Israel-defined poverty line.[17] Compounding this, the dropout rate of students in East Jerusalem was 13 percent as of 2011—2012, far exceeding the 1 percent rate in the west of the city.[18] Clearly, multifaceted restrictions have deeply impeded local social, economic and environmental development, therefore calling for robust strategies to improve East Jerusalem's urban living environment, increase access to essential facilities, provide livelihood opportunities for the local youth and promote sustainable economic development.

Located in the heart of the Old City, as shown in Figure 5.10, the Dar Al-Consul (house of the Consul) civic and residential complex (DAC) lies at the crossroads of history. With its foundations established during the Mamluk period, arched halls accommodating the Prussian Consulate, and its rooftop currently home to multiple families, the complex is a living embodiment of Jerusalem's enduring richness. Operating as the Prussian Consulate for three decades, the upper floors served as the consul's domicile whilst the remainder was used as a political and cultural centre for Prussian activities. In 1882, the property was transferred to the Latin Patriarchate in Jerusalem.[19]

Source: Dar Al Consul – Jerusalem. Dar Al Consul: Growth & Opportunities. DAC Brochure Final Layout (2021)

Figure 5.10 Location of DAC in the Old City of Jerusalem

18 United Nations Human Settlement Programme. URL: https://unhabitat.org/sites/default/files/download-manager-files/Right%20To%20Develop.pdf (2015) (Accessed: 10/07/2022).

19 Taweel, A.K. URL: https://thisweekinpalestine.com/dar-al-consul/ (2021) (Accessed: 30/06/2022).

Today, DAC serves as a forum for the diverse community of Jerusalem; a hub for Palestinian culture and society, influencing and inspiring action to champion the Palestinian narrative and cultural world, connecting with local Jerusalemites to expatriate professionals and international travellers to share the cultural legacy of the city. As one of the custodial properties of the Old City, the complex is a powerful heritage site bringing significant cultural value to local people and visitors. The urgent need to protect and revitalize this symbolic area was further highlighted when the Old City of Jerusalem was put on the List of World Heritage in Danger by UNESCO in 1982.[20]

In April 2011, the twenty-third session of the Governing Council of UN-Habitat passed resolution 23/2[21] confirming the rehabilitation and urban renewal of the Old City with a specific focus on land and housing to improve the human settlement conditions of Palestinians. Since 2014, UN-Habitat has guided a complex rehabilitation project for DAC, initiated as an eight-year project to enhance Palestine's cultural and civic identity; integrate sustainable models of residential and urban environmental development within the Old City; enhance the Old City functionality and service offer to its residents and visitors; and promote education continuity and entrepreneurship among Palestinian youth. DAC's renovation has been vital to preserve the local heritage site, leveraging its unique historical architecture and archaeological features to meet modern, eco-friendly approaches to support sustainable development and management. The project has provided a model of preserving and illustrating history in a location which is already recognized as a world heritage site, revealing layers of history in the city, illustrating the Palestinian narrative and existence as well as increasing their cultural and civic identity. In line with the SDGs and the New Urban Agenda, DAC has worked to ensure the equal rights of all people to the benefits of the city through the provision of essential services to Palestinian residents, a marginalized community in the Old City. The project has especially benefited older families living in the DAC complex, providing them with access to public space, and youth through the provision of career services, business incubators and media centres.

Implementation process

The DAC rehabilitation project was initiated by the Custody of the Holy Land (CTS) and jointly managed and implemented with UN-Habitat and Al Quds University (AQU). A EUR 6.47 million grant was provided by EU to finance the project,[22] with project work staggered over three continuous phases of engagement. The primary task of CTS was to protect properties within holy sites and serve local communities through housing projects, ensuring properties were restored in line with their historical character. As an integral vision, rehabilitation work thus built upon the historic value of the complex, adopting a sensitive approach to enhance its history whilst suiting the contemporary requirements and specific needs of residents, users and visitors. As an education institution, AQU were primarily responsible for conducting high-quality research, providing solutions to any challenges that were presented and fostering talented members of youth through various projects and departments. Underlining the project, the cooperation between CTS and AQU promoted the common goal that the DAC rehabilitation project set out: to improve the living conditions of Palestinians in the Old City of Jerusalem, enhance Palestinian culture and civil identity, and revive the underperformance of the DAC complex as a real estate asset to become the cultural and social centre of Palestine.

1. Structural consolidation and rehabilitation of the DAC complex

The first phase of the project spanning January 2014 to September 2017, included works centred on the ground floor, originally a debris-filled 720 m^2 space with hazards including unstable foundations, dangerous structural beams and columns. Following structural

20 Hilal, R. Final Report for End-Term Project Evaluation of the Rehabilitation of Dar Al-Consul into a Residential and Civic Centre – Phases Ⅱ / Ⅲ (2022).

21 Governing Council of the United Nations Human Settlements Programme. URL: https://digitallibrary.un.org/record/706831(2011) (Accessed: 30/06/2022).

22 United Nations Human Settlements Programme Regional Office for Arab States.

interventions and consolidations as well as the unearthing of hidden rooms, passages and niches, the space was converted into a 1,200 m^2 civic centre acting as a hub for a range of visitors and youth (see Figure 5.11). Here, the business development plan and its associated actions included a package of activities and unique commercial uses, filling a gap in the services offered inside the Old City and helping attract tourists and visitors. Accordingly, the project made use of the premises' strategic location in the Old City's Islamic Quarter, as well as the historic character of the complex to promote Palestinian identity. Such a development vision merged a convenient living environment with the residents' original sense of identity and pride, building their resilience to ongoing local social and political stresses. In addition, 23 old residential units were fully restored with improvements made to their structural foundations, the rehabilitation of unsafe electrical and dysfunctional mechanical installations, as well as the provision of electricity, water, solar water heating, sanitation, tiling and painting work, and the installation of new aluminium windows and wooden kitchens. Three community courtyards in the upper floors were rehabilitated for indigenous Palestinian local culture, social and seasonal events. Open spaces were also integrated accommodating private courtyards and domestic gardens. With the integration of modern amenities and open space rehabilitation, these original houses became more liveable which positively impacted the lives of residents (particularly the elderly), affording them residency in Jerusalem at little to no cost whilst providing them with a safe and strong sense of community, increasing their sense of identity.

Phases two and three built upon phase one from May 2018 to October 2021. Phase two restored 13 residential units integrating additional families into the complex, affording them modern amenities within the rehabilitated ancient structures – a complete transformation from previous conditions where issues of humidity, hazardous tiling, electrical and mechanical installations, and worn-out carpentry, aluminium and plumbing fixtures were commonplace. Rehabilitation of the two remaining community courtyards was also finalized including their landscaping and integration of safety guards where located directly above Khan El-Zeit Street. These works unlocked a total of 208 m^2

Source: Taweel, A.K. URL: https://thisweekinpalestine.com/dar-al-consul/ (2021) (Accessed: 30/06/2022)

Figure 5.11 A sectional view of the complex that showcases the layering of multiple functions, the community and civic centre, residential units and open spaces

of replenished open space across the complex; key spaces in which residents and visitors can now interact in a safe environment.

Phase three concluded the archeological excavation and preservation, and five main findings are now on display onsite giving life to the Roman, Byzantine, late Islamic and Mamluk times through elements such as cisterns, mosaic floors, private baths and water channels. To conclude works on the ground floor, modern and unique eco-friendly systems were installed through a simple but tranquilizing interior finish, offering visitors an escape from the norms of the Old City. There is a firefighting system installed behind the stone vaults, underfloor heating and a geoplast layer to uplift the tiles allowing for ventilation, a smart electrical control system, and unique pointing and plastering techniques to minimize humidity. As a sustainable process, the rehabilitation actions have therefore ensured sustainability though an energy-efficient, eco-friendly design. The rehabilitation has also respected and promoted local traditions and indigenous materials and techniques. UN-Habitat worked closely with local Palestinian architects, engineers and other skilled-labour force of CTS technical staff and Palestinian sub-contractors. These professionals also worked in collaboration with families to ensure an inclusive process of restoration, taking in their considerations and ensuring them temporary relocation whilst works were underway (see Figure 5.12).

Source: United Nations Human Settlement Programme. Phase Ⅱ and Ⅲ: Rehabilitation of Dar Al Consul into a Residential and Civic Complex Project. Final Narrative Report (2022)

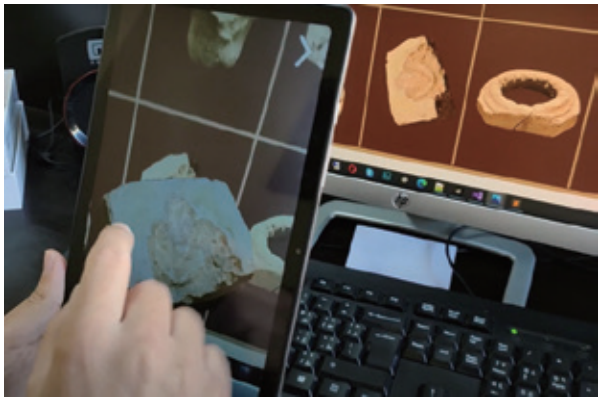
Figure 5.12 A DAC complex courtyard before (left) and after (right) rehabilitation

2. Integrating diverse operational facilities into Dar Al-Consul

To form the core ecosystem of the DAC community and civic hub, a local team initiated development of three interconnected operational spheres designed specifically for DAC in the second half of 2021 with the aim of providing unique learning opportunities, coaching and practical outputs to serve the Old City's future aspirations. In the first three months of operation, they served more than 1,000 beneficiaries (67 percent female, 42 percent youth and 5 percent senior citizens) in the form of community and civic services.[23]

The three operational spheres included the Tourism, IT and Media Centre (TIMe) which served 253 beneficiaries (98 percent of whom were children and youth). TIMe integrates a tourism centre, a virtual museum and museum gallery space, a retail and shopping area, and bookstore with activities revolving around virtual reality (such as extended reality) and

23 United Nations Human Settlement Programme. Phase Ⅱ and Ⅲ: Rehabilitation of Dar Al Consul into a Residential and Civic Complex Project. Final Narrative Report (2022).



Source: NMotion Studies / Intertech Co. URL http://www.intertech.ps/dac/ (2021) (Accessed: 30/06/2022)

Figure 5.13 An augmented reality display of cultural relics from DAC

augmented reality dedicated to DAC and the Old City conducted via lectures, clubs and interactive-based sessions as shown in Figure 5.13. In collaboration with UN-Habitat, virtual reality sessions were co-led by Intertech, a private sector company and local NGOs in Jerusalem.

An Education and Professional Innovation Centre (EPIC) was also established in which training and learning services were provisioned along with productivity and co-working, incubation, start-up, enterprise, entrepreneurship and career services serving approximately 650 beneficiaries. Elements such as digital marketing and social entrepreneurship were offered as well as a STEAM (science, technology, engineering, arts and mathematics education) summer camp led by AQU's Business Centre for Innovation, Technology and Entrepreneurship (B-CITE).

The third sphere was the Culinary and Food Experience (CAFÉ) providing practical experience to 8 young chefs via a series of 20 sessions headed by a renowned local chef in Palestinian cuisine. Including the creation of a full-service bakery, a bistro and a food festival, the programme served over 150 beneficiaries including rehabilitation site labourers, a senior citizens home and an orphanage, as well as participants at TIMe and EPIC training sessions and the DAC inauguration event. Support Services were also integrated as a supplementary service offering event space, a mini-auditorium and lodging (via private partnership).

As a key enabling component, the development of the civic centre was pivotal in facilitating knowledge and careers guidance facilities for young people. The centre provided them with an invaluable space equipped with modern communication tools to gain knowledge, skills and strengthen self-expression. Youth development programmes have helped to support careers pathways, guiding them through the process on entering formal employment. It is important to note that where many Palestinian youth suffer from isolation and limited opportunities for development, the design and functionality of the civic centre created a setting which afforded them an area to engage in diverse and free social and cultural interaction with the activities available. Interactions are directed to focus learning and education from Palestinian entrepreneurs and young professionals as well as operational staff and international visitors. The programme also enhanced exposure and connection to regional and international capacity building initiatives and employment opportunities, supporting those graduating from Palestinian universities to overcome some of the existing barriers that reduce their access to entering the formal job market. Such action leveraged the experience, existing programmes and networks of diverse stakeholders.

Through the provision of thematic services combining local and historic identity with modern functionality and interpretations, work helps to establish a new sustainable, economically viable and eco-friendly development and operational model offering a diverse variety of civic, commercial and tourism facilities. Focusing on providing civic services for commercial returns to local youth, services reflect social and cultural values and traditions. UN-Habitat's specialized team worked in close collaboration with the rehabilitation of CTS technical team as well as staff and students from AQU to establish an integrated programme of functions and activities based on the needs assessment of target beneficiaries and market surveys. Accordingly, programme development focused on the modern expressions of culture such as media, cuisine and arts, as well as contemporary gateways of knowledge exchange and exposure. The project established the foundation to connect and partner with local Palestinian entrepreneurs from the private sector and helped develop a business model

to ensure operational viability and sustainability. The implementation process exemplified a multi-layered approach to capacity building focused on Palestinian youth in particular. Such action was also key to help stimulate local economic viability and rehabilitation in the Old City and East Jerusalem.

3.Capacity building for Palestinian youth in East Jerusalem

The project placed strong emphasis on helping young people acquire new skills and knowledge to enable them to operate and manage a range of civic and business activities. With a concerted effort to build the capacity of new university graduates from AQU, the project formed a team of six local students living in the Old City whereby through weekly meetings with the project management team, they were chosen to lead research work for the DAC project under the guidance of AQU and UN-Habitat. Through the duration of the project's initial operational phase, five young people were employed in operational capacities at EPIC, TIMe and CAFÉ. Subsequently, across phases two and three, a large proportion of student and youth engagement was dedicated to on-site rehabilitation during operational work with participating students from the departments of archaeology, architecture, business and economics. AQU architecture students completed a 3D physical model of the complex, as shown in Figure 5.14, during the construction phase with a total of 37 students participating in the project renovation and 325 students in operations.

Where training was offered to newly graduated students to guide them into work placements, they were also provided with a UN-Habitat certified certificate of completion in addition to university accreditation for their involvement in the DAC project, opening up doors for their future employment. More specific careers guidance was also offered focusing on elements such as CV writing, interviews, internships, time management and public speaking as well as functional English speaking, project planning and report writing, of which the first session was conducted in July 2021 serving 109 youth beneficiaries.

Tailored job support programmes were also curated along with training opportunities affiliated to initiatives implemented by the AQU project department. Here, connections and co-training was made with university's ongoing initiatives with Informatica Company, Otermans's Institute, Jerusalem High Tech Forum, Intertech Company and Qasr Al-Hambra initiatives – the predominant centre of attraction for entrepreneurship initiatives in East Jerusalem. AQU's B-CITE incubation unit has provided professional development counselling services and training for

Source: Custodia Terræ Sanctæ. URL: https://www.custodia.org/en/news/jerusalem-dar-al-consul-complex-shines-once-again-old-city (2021) (Accessed: 09/07/2022)

Figure 5.14 A 3D physical model of the DAC complex produced by AQU Architecture Department

nearly 700 students in technical courses such as digital marketing, as shown in Figure 5.15, Python programming, the Internet of Things, web development and Microsoft AL fundamentals. Additional members of the labour force were also linked to the rehabilitation works where required, with ongoing training courses of the Welfare Association made available on historic building restoration.

Source: Taweel, A.K. URL: https://thisweekinpalestine.com/dar-al-consul/ (2021) (Accessed: 30/06/2022)

Figure 5.15 A digital marketing lecture organized by B-CITE

The success of the DAC complex rehabilitation project will serve and be promoted as a reference for similar projects in the future. Moving forward, the essence of the project has cemented itself on a higher scale in Palestine, where a new project – Quality Urban Development for Sustainable Interventions: Rehabilitation for Revitalization from 2022 to 2027, now aims to improve the socio-economic conditions for Palestinians in the Old City of Jerusalem through the rehabilitation and revitalization of further historic sites in a movement to catalyse integrated urban regeneration.

Reference experiences

1. Capitalize upon the potential of heritage buildings to replenish cultural and civic identities within historical urban communities

By prioritizing the preservation and renovation of historic buildings, the DAC rehabilitation project has showcased the importance of preserving and reinstating the cultural value and symbolism of the area's historical heritage infrastructure. Heritage sites around the world possess precious historical and cultural value and hence strong development potential. It is important for urban practitioners to adopt sensitive approaches to rehabilitation in regard to these key assets, placing great importance on their intrinsic value to local communities as well as their design and functionality. In this sense, urban practitioners must understand the value of regenerating not only the physical design of historic buildings in line with their original tradition but also their functionality, use

cases and connection to the community in which they belong. Where DAC has catalysed social change through its direct connection and contribution to social needs, it has also increased the voice of the Palestinian narrative in the Old City, and now serves as a core hub of programmatic initiatives led by stakeholders throughout Jerusalem. It can therefore be understood that protecting heritage buildings serves only as the foundation of heritage protection, and only by acknowledging people as the founders and guardians of such historic assets, can rehabilitation deliver long-term sustainability and impact on the ground.

2. Integrate dedicated spaces for cultural and civic exchange in local communities to cultivate inter-cultural exchange and social inclusion

The rehabilitated DAC complex provides a modern space for young people in the city to learn, acquire skills and freely express themselves through multicultural exchanges and interactions. Where issues such as social marginalization and isolation are widespread in urban communities globally, civic centres provide highly valuable spaces for local community members of all ages, backgrounds and gender. Where citizens can use DAC's modern facilities to organize and participate in a variety of activities as well as exchange ideas and learn from each other, this can not only help community members and visitors to better understand the cultural heritage and diversity of the city, but also help promote sustainable inter-cultural exchanges and social development on a wider scale.

3. Leverage cultural heritage rehabilitation as a tool to increase the skills and capacity of young people

The restoration of DAC has emphasized the importance of imparting skills and knowledge related to the protection of cultural heritage. This process stems from the open exchange, dialogue and cooperation of experts, scholars, front-line practitioners and local youth members. A team of international and local experts provided continuous professional exchanges and public activities on a local level. Participating scholars integrated their work experience into case studies and shared them in various classes on building rehabilitation whilst engineers involved in structural work also published a conference paper on the DAC project case.[24] In the process of project implementation, students were encouraged to carry out various activities related to their major subjects. These practical opportunities have promoted the continuous education, career development and entrepreneurial progress of local Palestinian youth, which are essential to reducing poverty, increasing resilience and enhancing long-term prosperity. The participation of students and diversified organizations also strengthens the connection of tourists, the DAC complex and the Old City. Where many of them have subsequently visited and worked with the local communities, DAC and the Old City have gained popularity, as well as increased visibility of the local culture.

Policy Suggestions

Capture a Full Understanding of Local Cultural Contexts to Accelerate Sustainable Urban Development in Line with the Cultural Heritage of Communities

As has been demonstrated throughout the case studies in this chapter, the identification and clarification of positive local cultural assets and community needs is key for cities to truly capture their unique cultural heritage. This involves applying an inclusive approach to understanding local cultural diversity, customs, traditions, knowledge and values as well as tangible cultural heritage assets such as buildings and structures. This requires an understanding of local community characteristics and a sufficient capacity within cities to formulate their own unique sustainable urban development strategies. Where sustainable urban development strategies integrate localized cultural aspects as a core component, it can help local communities to form a greater connection and resonance to their history. Urban cultural

24 Casarin. F., et al. The Dar al Consul Complex in Jerusalem: Improving the Living Conditions and the Structural Capacity. URL: https://www.scipedia.com/public/Casarin_et_al_2021b (2021) (Accessed: 21/07/2022).

heritage can become a 'living laboratory' to promote sustainable development, whereby the implementation of innovative experiments in the preservation and promoting of cultural heritage can increase prosperity and quality of life in urban communities.

Create New Channels to Increase Employment Opportunities and Develop Local Economies on the Basis of Cultural Heritage

Cities can seize the opportunities that are unlocked by replenishing and maintaining cultural heritage to provide employment and livelihood opportunities for local communities, and vulnerable groups in particular. While providing employment opportunities, cities can capitalize on cultural heritage preservation processes to co-facilitate capacity building in local communities and citizens, promoting aspects such as culture-related skills training, vocational education and entrepreneurship to forge pathways that provide long-term livelihood opportunities for local people. On the basis of cultural heritage, cities can explore broader opportunities in cultural industries, performing arts and creative economies to promote culture as a way to develop endogenous resources, create sustainable income and increase socio-economic development.

Prioritize Local Residents as the Participators and Beneficiaries of Cultural Heritage Protection

Cities should not only protect the appearance of cultural heritage but also safeguard the emotional connection between local communities and cultural heritage. Protecting the memories, habits and traditions of daily life in local communities who reside in historic buildings and communities is key to ensuring a sustainable approach to urban cultural development, understanding that those who are impacted the most in the promotion or dilution of urban cultural heritage are local residents themselves. Ensuring cities possess the capacity and ambition to mobilize citizens to become recorders, narrators and ambassadors of local cultural heritage stories marks important elements to facilitate bottom-up approaches in urban cultural heritage protection and promotion, understanding the importance of community participation in preservation and rehabilitation efforts.

Leverage Culture as a Tool to Enhance Social Cohesion and Promote the Localization of the SDGs

Culture plays an essential role in maintaining and strengthening social bonds and interactions both in and between local communities. It can be deployed as a tool to promote social cohesion and inclusivity, an important component in driving sustainable urbanization and leaving no one behind. Cities can also harness the potential of culture to coordinate dialogue and communication beyond that of just local communities, but to external actors and stakeholders in urban development processes. Utilizing culture as a means to strengthen connection and create collaborative partnerships based on a sense of belonging and trust can help to advance SDG localization. Cities must therefore understand the value of promoting intercultural dialogues to explore and innovate the methods in which cities can achieve the SDGs leveraging cultural diversity.

Chapter 6

Governance

Introduction[1]

As globalization and associated processes mature, cities around the world are faced with numerous challenges such as the rapid growth of urban populations and changes in economic, social and environmental conditions, as well as the need to respond to the diverse demands of multiple urban stakeholders. Consequently, urban governance, as the regulator of city development, has become increasingly complex. As the COVID-19 pandemic has swept the world and impacted local governance as well as social and economic systems, different regions have adopted coping strategies which reflect the diversity of governance entities. It has also revealed and exacerbated the inequalities within and between countries whereby the poor and most vulnerable groups remain at the greatest risk of contracting the virus, with issues such as the inability to obtain vaccines and socio-economic marginalization meaning they have borne the brunt of the impact.[2]

Urban governance is gaining increasing attention thanks to its pivotal role in responding to emergencies and risks. To prevent and respond to risks emerging from natural and social disasters such as urban emergencies caused by climate change and the COVID-19 pandemic, it is necessary to make adequate preparations and develop rapid response plans.[3] Appropriate governance which engages government and stakeholders to decide how to plan and manage urban areas, and how to distribute social and material resources as well as political power, will help cities to win 'battles' such as the COVID-19 pandemic which interfere with the normal operations of a city and globally.

What is appropriate governance in this era? Putting people at the centre of urban governance may be the first and foremost key. People are the direct stakeholders of social and economic development, their related challenges and consequences. However, there is a gap between people's needs and what the urban governance system can provide, especially at the community governance level. In many modern societies, cities have become mere locations for people to stay and many urban inhabitants do not have a sense of belonging to their city due to a lack of engagement at community level. Only when no one is left behind and everyone is included and supported by sound governance systems can the SDGs be realized at the local level. Therefore, good urban governance needs to take into account the diverse demands of local entities, engage its inhabitants, enable public participation that underpins inclusive development, and seek flexible and practical systems, mechanisms and technologies to ensure the effectiveness of urban governance.

Another key factor is the cooperation of urban governance systems beyond administrative borders. In the face of complex regional or global challenges, governments from different communities, cities and countries should work together while the world is going through global threats and challenges. Considering that it is impossible to resolve global and regional public issues like climate change and the COVID-19 pandemic through unilateral actions by a country or locality, development entities must cooperate to undertake common but differentiated responsibilities and facilitate the interactions and exchange among regions, thereby forging a shared future that benefits all. In the 2030 Agenda for Sustainable Development, the United Nations essentially calls for collective governance actions globally, aiming to promote cooperation and division of labour among various local players in the world to jointly respond to global risks and challenges. In this way, local actions can join forces and work beyond the limitation of administrative borders, which will ultimately support realization of the global goals.

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1 This chapter was written by the team from Tongji University led by Peng Zhenwei. The authors are: Peng Zhenwei, Chen Chen, Huang Yi, Li Lingyue, Tang Weicheng, Wang Haixiao, Wang Zhen and Wang Lie.

2 United Nations. URL: https://unstats.un.org/sdgs/report/2021/ (2021) (Accessed: 05/06/2022).

3 Liexuan, W., Kunsheng, W., Huajin, H.. Complexity Analysis of Urban Governance from the Perspective of Systems Theory. Computer Simulation (2022).

The purpose of this chapter is to probe into the question of how to improve governance capabilities by providing reference experiences for governance practices. Four different development scenarios have been selected. Each case study is composed of the background of the case, the implementation process and a summary of what can be learnt.

The first case is an example at the community-level. In Vancouver, Canada the Grandview-Woodland Community showcases how to preserve the valuable qualities of a community and continually improve its affordability, sustainability, inclusion, vitality and liveability while addressing the deterioration of the environment and the need for renewal. The second case demonstrates an experience at the city-level. Tehran launched the Smart Tehran Programme (STP) to build a people-oriented urban management framework through utilizing the potential of digitization, as well as to reshape the way cities deliver key urban services and how residents engage in everyday life. The third case demonstrates how urban governance can be managed at the regional level. The Yangtze River Delta Eco-Green Integrated Demonstration Zone in China is exploring the integrated governance mechanism featuring co-construction and sharing among regions beyond administrative boundaries. And the fourth case provides an example of how local experiences can be used at the global level. Los Angeles in the United States of America has combined its own development strategy with the SDGs development framework, carried out multi-party cooperation and made extensive use of open-source technologies to develop a relatively complete set of development systems and action guides.

Overall, the four cases illustrate good urban governance experiences at different levels, and the related policy suggestions jointly demonstrate how to build a systematic and people-oriented urban governance that facilitates realization of the SDGs. It is worth noting that cities remain as the main governing bodies that are close to communities and key to global governance. Implementation and practice of the SDGs reveals that their effectiveness will largely depend on actions at the city level.[4] On top of this, governments at other levels should also take immediate action to improve their governance capabilities, paying attention to the changes in human needs, allocating tasks and responsibilities according to the spatial scale, and adjusting specific governance methods. To a certain extent, improving urban governance is equal to improving the comprehensive strength of regional development.

Case Studies

Vancouver, British Columbia, Canada: Reconciliation with History to Move the Community Forward – a Path towards Sustainable Development in the Grandview-Woodland Community

Case background

Located in north-east Vancouver as shown in Figure 6.1, the Grandview-Woodland Community is one of several communities clustered around downtown Vancouver, one of the city's oldest settlements with a reported 29,175 inhabitants as of 2016.[5] The community is also an integral part of the traditional territories of the three First Nations[6] in Vancouver, whereby the territory is an ancestral and unceded territory of the Coast Salish people meaning that community residents are working and living in their own territory. British Columbia has the largest percentage of First Nations people accounting for about half of the country's total First Nations population. With more than 30 indigenous languages being used, it is

4 Chao-Feng, S., et al. Design of evaluation index system for sustainable development in China based on the SDGs. China Population, Resources and Environment (2021).

5 Vancouver City Council. URL: https://vancouver.ca/files/cov/social-indicators-profile-grandview-woodland.pdf (2020) (Accessed: 12/05/2022).

6 First Nations refers to the Aboriginal people in Canada, predominantly consisting of Indians with the exception of Inuit and Métis populations.

Source: Vancouver City Council. URL: https://vancouver.ca/files/cov/grandview-woodland-community-plan.pdf (2017) (Accessed: 12/05/2022).

Figure 6.1 The location of the Grandview-Woodland Community

also the most linguistically dense area in the world. The Grandview-Woodland Community is home to a significant number of urban Aboriginal people including members of the local Musqueam, Squamish and Tsleil-Waututh First Nations, as well as Métis and Inuit from across British Columbia and the rest of Canada. As of 2011, the community's 2,195 indigenous residents accounted for almost a fifth (18 percent) of Vancouver's off-reserve urban Aboriginal population, the largest number living in any neighbourhood.[7] The three Aboriginal peoples, Musqueam, Squamish and Tsleil-Waututh, were the first to inhabit the territory and utilize Grandview-Woodland and areas beyond. During the early development of urban transportation in the 1890s, the development of the intercity tram spurred the growth of the community into a vibrant part of Vancouver's eastern suburbs. In the 20th century, it further developed into a highly walkable and interconnected community and a popular destination for residents and tourists. However, at the same time the community has faced historical problems through the destructive legacy of European colonies. During the development of Vancouver as it is today, First Nations were dispersed to limited reservations and irretrievably eroded of the traditional food acquisition, rituals and culture of Aboriginal residents and their systems of governance.

Vancouver, in partnership with Reconciliation Canada, declared 2013 as the Year of Reconciliation. This included acknowledging negative cultural influences and stereotypes generated by Canada's residential school system through a process of reconciliation and healing that fosters a wider and shareable understanding of the historical influences that have so far shaped the aboriginal experience. However, reconciliation is an ongoing process that will continue well into the future. In 2014, Vancouver was declared as a City of Reconciliation in recognition that this mission was not limited to a certain year but instead required long-term effort over generations. The city stated that it would work with local First Nations and urban Aboriginal residents to continue acknowledging their long-standing existence, addressing the adverse effects of colonialism and building new, positive and constructive relationships wherever possible to the benefit of all residents of the community.

Clearly, the overall development of the Grandview-Woodland Community, a time honoured and diverse community, has a special historical symbolic significance for Vancouver. Today, the Grandview-Woodland Community still boasts a spectrum of heritage resources and a diversified social structure with approximately two-thirds of the residents living in rented housing.[7]

A long-term review shows that as cities continue to grow, so do the issues facing their communities. The challenges presented to Canadian communities have varied over time. In the 20 years after World War Ⅱ, the urban communities' sole focus was on accommodating their growing population, providing them with housing, utilities, schools and parks, and coping with the increased use of cars. From the 1960s, concerns focused on local environmental deterioration whereby community renewal became the desired solution until the 'bulldozer method' used to achieve this goal was questioned. In the 1970s, residents became concerned about the impact that new large-scale projects might have on existing residential and public areas including apartments, complexes, motorways, airports

7 Vancouver City Council. URL: https://vancouver.ca/files/cov/grandview-woodland-community-plan.pdf (2017) (Accessed: 12/05/2022).

and shopping centres. In the 1980s, management of growth and affordable housing captured most of the attention of community planners, whilst over the 21st century, climate change and potential deterioration of the natural environment are now put under the spotlight, with a priority on ensuring sustainable urban development.

The key question here is how to preserve the valuable qualities of a community whilst continually improving its affordability, sustainability, inclusion, vitality and liveability. Specifically, like other communities in Vancouver, the Grandview-Woodland Community is grappling with today's challenges such as environmental pollution and climate change; housing delivery for a diverse population; increasing access to affordable housing; ensuring business vitality; managing population growth stagnation; declining numbers of young and school-age children; an aging population; and addressing the needs of local urban Aboriginal residents and First Nations.

Implementation process

The practice of the Grandview-Woodland Community demonstrates how local communities localize the SDGs with the support and assistance of the government. More specifically, it shows how local governments can work with First Nations and urban Aboriginal residents to build new, positive and constructive relationships for sustainable development in local communities by supporting affordable housing, encouraging community-based retail businesses, promoting green building design including energy saving retrofitting and adopting sustainable transport schemes. In the spirit of reconciliation, they are and will continue to build a better future for the community.

1. Developing and implementing a community plan

Due to its historical background and social context, the Grandview-Woodland Community has compiled and implemented a community plan that illustrates its unique challenges and opportunities – an integral part of Vancouver's community planning system. In the mid-1970s in response to the pressure of urban growth and development, the Vancouver City Council approved the development of Local Area Planning in selected communities. Shortly thereafter, the City Council launched a comprehensive planning initiative called City Plan which marked the first integrated urban planning intervention since the 1928 Bartholomew Plan. City Plan: Directions for Vancouver was approved in 1995 and identified Vancouver as 'a city of neighbourhoods'. As part of the planning process, it was recognized that City Plan would only be truly effective if it included the neighbourhood at community level. As a response, the Community Visions Programme came into force in 1997. It called for cooperation between the community and the city government to create a vision for the future according to the direction of the City Plan and the needs and desires of the community. The Grandview-Woodland Community Plan was formulated under this context.[8]

Like other community plans in the city, the Grandview-Woodland Community Plan is comprised of four main stages: ① Initiation of planning; ② Formulation of the plan and policies; ③ Plan drafting; and ④ Plan approval. Multi-party participation is encouraged in the process of community plan preparation (see Figure 6.2), and opinions and suggestions from community members and other major stakeholders are collected to ensure an inclusive planning process that reflects the

Source: Vancouver City Council. URL: https://vancouver.ca/files/cov/grandview-woodland-community-plan.pdf (2017) (Accessed: 12/05/2022).

Figure 6.2 A thematic workshop in the Grandview-Woodland Community

8 Vancouver City Council. URL: https://vancouver.ca/files/cov/backgrounder-community-planning-101.pdf (Accessed: 13/05/2022).

diversity of the community.[9]

The plans and strategies related to sustainable development in the Grandview-Woodland Community Plan involve two aspects: social sustainability and environmental sustainability. The focus on social sustainability is targeted towards the inclusion, equity and resilience of the society, responding to the needs of urban aboriginal residents and First Nations as well as the challenges of housing delivery within a diverse population. Concerning environmental sustainability, the focus lies in environmental protection, most notably via the integration of green, sustainable transportation planning, sustainable energy generation and climate change.

Community planning began in 2011 and in March 2012, Vancouver City Council approved the terms of reference to guide the planning processes for four new communities, initiating the Grandview-Woodland Community as one of them. The community planning process was expected to take two years; however, after planning had been underway for some time, it was found that there was no consensus on many issues. The council convened a Citizens' Assembly[10] as an important tool to explore multiple options, address challenges and solve issues that arose in the community, and the plan was finally approved in 2016.

The Grandview-Woodland Community Plan sets out a thoughtfully managed framework for future change. Critically it responds to the challenges facing the community, guiding local development to ensure long-term sustainability and liveability. The plan covers the following topics:

- Support a range of affordable housing options: provide a range of housing forms, unit types and sizes, with a particular focus on the retention and managed renewal of secured market rental housing
- Foster a robust, resilient economy: encourage community-based retail activity, and enhance and support community vitality and the local economy
- Encourage green design and retrofitting of buildings to support energy conservation: encourage new construction to use passive design approaches and existing buildings to adopt energy-saving retrofits
- Support a range of sustainable transportation options: prioritize sustainable transportation choices such as walking, cycling and public transport; manage the road network efficiently to improve safety, and support the efficient movement and delivery of goods and services

2. Addressing long-standing community challenges and responding to the needs of local Aboriginal people and First Nations

The challenges faced by the First Nations have historical origins. Although Canada is a developed country, First Nations live in difficult conditions and their life expectancy is far below the national average. These conditions are caused by a complex range of factors including the dispersed population pattern in 'reserve lands' far away from cities, as well as inconvenient transportation access and extremely harsh natural conditions. In tandem, these communities suffer from poor infrastructure as well as a lack of access to reliable, clean drinking water, electricity, telecommunications, educational resources and housing. Due to the sluggish economy and few job opportunities in the communities, poverty was once synonymous with First Nations communities with issues of drug abuse, crime and suicide being major problems throughout recent history. Whereas the current population of First Nations is 850,000, (2.6 percent of Canada's total population) their suicide rate is five to six times higher than that of non-indigenous peoples.

9 Vancouver City Council. URL: https://vancouver.ca/home-property-development/neighbourhood-planning-projects.aspx (Accessed: 13/05/2022).

10 The Citizens' Assembly is a representative body of people whose task is to study, consider and reach a consensus on public policy issues. Usually its members are randomly selected from citizens who have committed themselves to represent all members of the community interested in the work of the Assembly. The recommendations of the Citizen's Assembly are based on the principle of decision-making by consensus and majority rule. This approach is considered an innovative model of democratic participation that contributes to the direct resolution and balance of current problems.

The existential crisis of First Nations is also a continuation of the suffering of Canada's Aboriginal people in modern times. Since the Confederation of Canada in 1867, the fate of the Aboriginal people has not changed and Canada's social practices over the past 150 years have been detrimental, destroying a vast swath of the nation's culture. Children of First Nations, for example, were forcibly taken from their parents to attend residential schools where they received so-called 'white education' and were separated from the influence of their families and traditions. The residential school system not only resulted in a large number of child deaths due to mental and physical abuse but also stripped the children of their culture. The residential school system marked the devastating history of the Canadian government's cultural genocide on the Aboriginal people, which continues to have a far-reaching and long-lasting impact on First Nations and other Aboriginal communities and families across British Columbia and Canada more widely.

More than 20 years ago, the Royal Commission on Aboriginal Peoples of Canada proposed to improve the living conditions of First Nations; however, successive governments have failed to address the root causes and take practical measures. Given the substantial investment and requirement for other Canadians to give up some of their interests, the government was faced with the need for authentic and effective actions to help enhance the long-term prosperity of First Nations.

In terms of community planning values, the Grandview-Woodland Community respects traditional cultural customs, highlights representation and diversity, hears the voices of residents in the community, pays attention to the needs of First Nations and indigenous people in the community, and focuses on maintaining the diversity of housing, facilities, land use and economic opportunities. One of the core planning principles is to support the goals of reconciliation in partnership with the Aboriginal community, whilst the community develops unique and respectful ways to acknowledge and celebrate the historic and current presence of Aboriginal people in the Grandview-Woodland Community and seeks opportunities to reference Musqueam, Squamish and Tsleil-Waututh First Nations by utilizing traditional place names, and through other placemaking activities and place-identifying efforts.

In terms of a social well-being strategy, the Grandview-Woodland Community carries out updates and planning based on the requirements of its indigenous people, and renews and expands venues and adds functions of service facilities for Musqueam, Squamish and Tsleil-Waututh First Nations to meet the growing needs of the community.

And in terms of art and culture, the community supports the artistic and cultural expression and activities of First Nations and urban Aboriginal people. Investments are made in local First Nations and urban Aboriginal cultural activities, as well as Musqueam, Squamish and Tsleil-Waututh First Nations and urban Aboriginal cultural expression and activities, and public art by creating a cultural landscape, combined with cultural activities and contemporary culture (see Figure 6.3).

Reference experiences

1. Take into account the social, economic and environmental aspects of sustainable community development

The sustainable development of communities mainly involves three aspects: economic growth, social development and environmental protection.[6] The Grandview-Woodland Community attaches equal importance to social equity and inclusiveness, community economy, and environmental protection and response strategies. It pays attention to the diversity and equity of the community, and the maintenance of the existing community network – especially the needs of vulnerable groups in the community – and accordingly guarantees a diverse supply of housing, employment, business development and services. The community not only considers attracting new residents but also pays attention to the retention and concerns of existing residents, and enhances the sense of belonging of residents to continue the existing community network. The community also pays attention to the application of green planning strategies and energy-saving technologies, formulates planning measures corresponding to future climate change, and evaluates and analyses the vulnerability of the

Source: Vancouver City Council. URL: https://vancouver.ca/files/cov/grandview-woodland-community-plan.pdf (2017) (Accessed: 12/05/2022).

Figure 6.3 The Aboriginal Friendship Centre

community to climate change in future development.

2. Encourage the public to participate in community planning in multiple ways throughout the process

The Grandview-Woodland Community stresses the active participation of the public in the whole process of compiling, implementing and supervising the community plan; collects the input of community residents through the Citizens' Assembly, exhibition days, seminars and questionnaires and pays attention to their vital interests; analyses and diagnoses the current situation of the community together with local authorities and professionals; efficiently allocates and invests limited resources in the critical or serious problems of the community; and in a joint effort, outlines a vision of community development. In this way, it has achieved democratic, transparent and inclusive public participation in community planning and affairs, and promoted sustainable community development.

3. Plan, evaluate and provide feedback on community planning and programme implementation

Vancouver aims to develop into a liveable and sustainable city. The practice of the Grandview-Woodland Community is of particular significance for the sustainable development of cities and regions which are home to indigenous people. In community planning and when implementing specific programmes, the community underscores openness, planning, evaluation and supervision, and updates the community plan in view of future development changes to achieve the goal of sustainable development.

4. Ensure community housing strategy and programme implementation

Providing housing options for households of all income levels and family sizes will ensure that a community remains diverse and resilient, and is critical to ensure the social and economic health of cities and communities. In line with existing city-wide policies

on affordable housing in Vancouver, the Grandview-Woodland Community proposes the following housing strategies: ① To increase housing supply and affordability, and enable the development of additional supportive housing through senior government funding and/or the provision of additional density; ② To allow for a gradual increase in the supply of secured market rental housing, non-market rental housing and ownership housing; ③ To work with non-profit organizations, housing service providers and urban aboriginal partners to maximize the housing supply for vulnerable community residents; and ④ To increase affordable housing options in response to the diversity of community needs including families, single people, persons with disabilities and seniors.

5. Promote green and sustainable transportation modes in the community

The transportation network fundamentally affects a neighbourhood's character and the interactions that take place within that community. Prioritizing sustainable transportation such as walking, cycling and public transport will help Vancouver address the challenge of continued growth without increased road space, creating a more vibrant urban environment and achieving its sustainability goals. In more detail this points towards: ① Adopting 'complete street' principles and designs; ② Improving transportation safety; ③ Optimizing the walking environment; ④ Refining cycling conditions; ⑤ Encouraging the use of public transport and; ⑥ Optimizing the road network and parking.

6. Enhance community energy and response to climate change

To help Vancouver achieve the goal of becoming the greenest city in the world and contributing to a reduced ecological footprint, the Grandview-Woodland Community has taken active measures: ① Land use policies maximize opportunities to reduce energy consumption and GHG emissions in the community through the integration of cluster and mixed land uses, transportation and energy; ② Energy and building retrofits encourage new developments to utilize renewable energy and related technology, and the implementation of energy conservation measures as part of the renovation of existing buildings to improve energy efficiency and health performance; and ③ Climate change adaptation enhances social connectedness, encourages stewardship of trees, green spaces and green storm water infrastructure, and improves the ability to respond to and recover from events. Develop green transportation to reduce CO_2 emissions and construct new buildings with environment-friendly materials for optimal environmental performance.

7. Understand the value of a public benefits strategy

A Public Benefits Strategy provides strategic direction for future capital investments in a community over the long term. It covers key areas that support liveable, healthy and sustainable communities including affordable housing, childcare, parks and open spaces, community facilities, civic facilities, transportation, utilities and heritage. The Public Benefits Strategy considers the existing network of amenities and infrastructure within the community, as well as district-serving and city-serving amenities located beyond the community's boundary. In light of the city's priorities and funding considerations, long, medium and short-term investments in the community are planned to facilitate the implementation of a sustainable community plan.

Good Governance in the Renovation of Old Housing: How to Guide Residents in Self-governance and Decision-making

Urban renewal is inevitable when a city reaches a certain age in its development. It is also an important means to promote continuous improvement of urban quality. The renovation of blocks of flats, including improvements to living environments and infrastructure, the optimization of supporting facilities such as lifts and parking spaces, and the integration of public service facilities for the elderly and children,

has become the focus of urban renewal with all of these being closely related to the quality of life for residents. Urban renewal is subject to complex and interlaced constraints across social, economic, spatial and environmental dimensions that can result in a range of governance challenges. What is particularly challenging is how to maintain social equity regarding the distribution of rights and interests, and how to ensure that the reasonable requirements of every household are satisfied.

The Yinhang sub-district in Shanghai is a large representative residential area with an aging population. As of April 2020, senior citizens over 60 years old accounted for approximately 46 percent of the sub-district's registered population creating a wide demand for the installation of lifts. Residents were effectively encouraged and guided to participate in the practice, exemplifying the benefits of inclusive governance. Although the implementation process is highly dependent on professionals, self-governance is at the core of lift installation in old buildings as the costs have to be shared by all residents. There are an array of problems that need to be overcome. For example, how can people with different needs be consulted effectively? How can buildings be identified for lift installation? How can residents who have reached a consensus finish the application and approval process in an efficient manner?

The Yinhang sub-district office launched a series of measures to guide and assist residents in independent consultation and methodical decision-making. As a first measure, the sub-district office established a service centre which helped residents to hold independent consultation meetings, share information on the application and approvals process, and assist in the implementation of the project: the service centre effectively acted as a counsellor guiding the process. Secondly, to help residents learn about the basic conditions needed for installing a lift in their building, the office engaged a professional team composed of experts in architecture, infrastructure construction and engineering to conduct a survey and analysis of 246 units in blocks of flats across 28 communities. The team analysed factors such as the surrounding environment, structural form, housing typology characteristics, road layout, greening distribution and pipeline conditions, and drew up a feasibility map. The map used green, blue, yellow and red blocks to indicate 'good', 'average', 'difficult or 'no' conditions respectively. Residents of eligible buildings under 'good' conditions were able to accelerate the consultation process, while residents of buildings with less favourable conditions could seek upgrading solutions from professional organizations. And in a third measure, after understanding residents' needs and suggestions, the sub-district office issued a Guide for Autonomy of Installing Lifts in the Yinhang Sub-district and Ten Factors Influencing Lift Installation in the Yinhang Sub-district and Solutions to show residents how to conduct democratic consultation, sign agreements, raise funds, fill in application forms and select suppliers. These two documents serve as the road maps for self-governance.

To install a lift, residents were generally required to hold around 10 consultation meetings. With the help of the guidelines, each meeting was more purposeful and decision-making more efficient. Residents even developed and piloted additional creative solutions such as installment payments with a 'free installment and pay on use' feature to address fund-related problems; different contribution ratios for residents living on different floors; and separation of powers in money transferring, bookkeeping and supervision to ensure security of funds.

This intervention demonstrates the value of inclusive, people-oriented governance. Such an approach emphasizes the importance for urban administrators to not only have a broad understanding of the needs of residents, but also to guide residents to actively participate in the consultation process. Innovation, in this scenario, lies in the fact that the administrators provided residents with a set of methods and guides for orderly self-governance and efficient decision-making, reducing the cost of trial and error approaches whilst motivating residents to participate in the governance process.

Yangtze River Delta, China: The Yangtze River Delta Eco-green Integrated Demonstration Zone – Building a World-class Model of Waterfront Human Settlement Civilization

Case background

The Yangtze River Delta region encompasses the Shanghai municipality, Jiangsu, Zhejiang and Anhui provinces. It is one of the regions with the most dynamic economic development, the highest degree of openness and the strongest innovation capacity in China. Comprising a twenty-sixth of China's geographical area and a sixth of its permanent population, the Yangtze River Delta generates nearly a quarter of the country's GDP. It has also been recognized as one of the six city clusters on the economic map of the world. But along with the robust growth of the regional economy, the Yangtze River Delta faces many problems and challenges.

The first challenge is balancing economic development with the protection of the ecological environment. The Yangtze River Delta, located in the lower reaches of the Yangtze River, is polluted by the upstream water due to industrial economic development in the region, and more attention needs to be given to environmental problems. Secondly, in the process of rapid economic integration as the regional industrial economy continues to expand, the problem of imbalanced regional development is revealed, the allocation of productive forces is disordered and the convergence of industrial structure remains a salient issue. Regional development entities are under local protectionism to a certain degree and seeking self-interests without leveraging their combined strengths. A third challenge is how to overcome the obstacle of administrative division, accelerate the improvement of regional cooperation mechanisms and promote the ecological transformation of regional development. As an important pillar of the growth of China, the development of the Yangtze River Delta region has received direct attention at national level. At the first China International Import Expo in 2018, Chinese President Xi Jinping declared that support should be lent to the integrated development of the Yangtze River Delta and its elevation to a national strategy. As economies of different regions become increasingly intertwined and interconnected, integrated development has become an urgent internal demand for regional economic transformation and upgrading.[11] This means that the integration of the Yangtze River Delta is promoted by both central and local governments.

To meet higher-level development needs and to implement national strategies with greater depth, how can central and local governments promote higher-quality integrated development of the Yangtze River Delta in a more coordinated way? Given the vast area of the Yangtze River Delta and the huge differences in the socio-economic development of the localities in the region, a plan for the Yangtze River Delta Eco-Green Integrated Demonstration Zone (the integrated demonstration zone or demonstration zone for short) was proposed as a breakthrough point for implementation of the integrated development strategy of the Yangtze River Delta. Through the innovative development system planning and construction project of the centralized space of the demonstration zone, the plan hopes to pilot the cross-administrative-division integrated governance model and explore ways to translate regional ecological advantages into socio-economic development advantages. If the pilot trials turn out to be successful, the development experience of the demonstration zone will be popularized in a wider range of the region to lead the overall regional development.

Implementation process

In October 2019, the state council approved the overall plan of the Yangtze River Delta Eco-Green Integrated Demonstration Zone. The plan supports Shanghai, and Jiangsu and Zhejiang provinces in jointly establishing the Council of the Integrated Demonstration Zone as a decision-making platform for matters such as plans, launch reforms and the roll out of supporting policies to collaboratively advance major projects in the development of the demonstration zone. In addition,

11 Zhibiao, L., Lingchi, K. Development Characteristics, Problems and Basic Strategies of Regional Integration in the Yangtze River Delta. Journal of Anhui University (Philosophy and Social Sciences) (2019).

the plan supports the establishment of the Executive Committee of the Integrated Demonstration Zone for the development, construction and management organization. The committee will be responsible for planning, institutional innovation, reform-related matters, major projects and supporting policies in the demonstration zone.

1. Selecting sites and planning beyond the administrative divisions

As an important carrier of China's integrated regional development strategy, the demonstration zone has carried out overall systematic design in site selection, construction, development orientation and spatial layout, laying a foundation for the governance of coordinated and regional development. The demonstration zone is located at the intersection of Shanghai, Zhejiang and Jiangsu in the Yangtze River Delta, spanning Shanghai, Jiangsu and Zhejiang including Qingpu district of Shanghai, Wujiang district of Suzhou, Jiangsu province and Jiashan county of Jiaxing, Zhejiang province. This location boasts a sound ecosystem, abundant historical and cultural resources, unique development advantages from the Yangtze River Delta, lakes and an intertwined water network, and deep cultural holdings of Jiangnan (regions south of the Yangtze River) culture. In terms of development orientation, the demonstration zone considers building a 'test field for integrated institutional innovation', a 'new paradigm for translating ecological advantages into socio-economic development advantages', a 'new highland for green and innovation-driven development' and a 'new model for liveability and harmony between man and nature' as its strategic focus; a 'world-class model of waterfront human settlement civilization' as its vision for development; co-contribution, shared benefits, common responsibility and win-win results as its governance model; and the principle of ecology first and green development as its development philosophy.

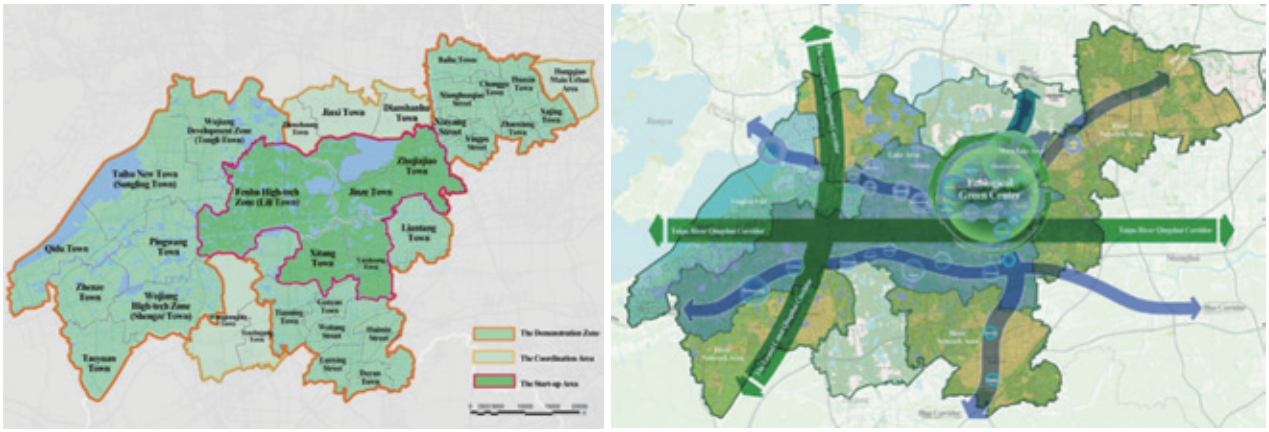
The overall territorial space plan of the Yangtze River Delta Eco-Green Integrated Demonstration Zone 2019—2035 was released in 2020. The plan was developed by the demonstration zone executive committee and representatives from Shanghai, Jiangsu and Zhejiang to ensure that local government takes an active part in the construction. This is China's first inter-provincial territorial space plan jointly prepared by provincial administrative entities.

The plan was designed under the perspective of ecological balance in the region. It has taken the environmental integrity of Dianshan Lake in the demonstration zone into account, established a coordination area outside the planned demonstration zone area, and conducted further research on and made plans for the area around Dianshan Lake. According to the plan, the demonstration zone encompasses protection of mountains, rivers, forests, fields, lakes and grasslands, carrying out environmental governance and ecological restoration in the whole region, and building an ecological security pattern. In terms of spatial layout, the demonstration zone pursues green transition and development. It has never engaged in the development of closely grouped areas only, has built a multi-centre, clustered, networked and intensive urban-rural development pattern, and ensured implementation of the plan, utilizing the unified planning indicator system, whole-area territorial space regulation and control, and whole-process integrated land management.[12] Based on regional cultural characteristics, economic foundations and location, the towns of Jinze and Zhujiajiao in Qingpu district, Lili in Wujiang district, and Xitang and Yaozhuang in Jiashan county have been selected to form a pilot start-up area to lead construction in the demonstration zone as shown in Figure 6.4.

2. Exploring an appropriate system and implementing the construction project at the same time

In terms of implementation and construction, the demonstration zone has focused on solving the problems in regional integration system and policies, and achieving the goal of eco-green development. This in adherence to the principle that institutional innovation should go hand in hand with construction, advance key projects through institutional innovation

12 Renkai, Z, Zhou Xiaoling. Practice and Reflection on Collaborative Innovation in the Yangtze River Delta Eco-Green Integrated Demonstration Zone _ Zhang Renkai. China Sci-Technology Business (2021).



Source: Announcement on the Draft of the Yangtze River Delta Eco-Green Integrated Demonstration Zone

Figure 6.4 Location of the planned demonstration zone (left)and the ecological pattern of the demonstration zone (right)

and provide more vivid application scenarios and practical cases for institutional innovation thus promoting various tasks in an orderly manner.

3. Institutional innovation

The most urgent problem facing the integrated development of the Yangtze River Delta is how to break through the administrative divisions and market barriers between regions to promote development. Based on the principle of 'reaching beyond the administrative boundary without breaking administrative affiliation', the demonstration zone is exploring the building of an integrated development system and mechanism for different regions in an innovative way under the established administrative divisions,[13] and optimizing policies and mechanisms to promote regional coordinated development.

Centring on regional development, the demonstration zone has focused on the institutional innovation of eight aspects: ① Establishing a planning and management system featuring joint formulation of development plans, joint submission for approval and joint implementation; ② Establishing a unified ecological conservation system; ③ Establishing a land management mechanism that coordinates land indicators across regions and puts space resources into good use; ④ Establishing a cross-regional integrated management and service mechanism for projects; ⑤ Making institutional arrangements that promote the free flow of various elements across regions; ⑥ Establishing a finance and taxation sharing management system to share investment and benefits across regions; ⑦ Launching public service policies featuring co-construction and shared benefits; and ⑧ Establishing a unified public credit management system. In terms of ecological conservation, for example, the demonstration zone needs to implement unified standards, environmental monitoring and law enforcement in a bid to lay an institutional foundation for joint protection and co-governance of the environment. In terms of establishing a mechanism to promote the free flow of market factors, a number of institutional arrangements have been made to promote the free flow of various factors across regions such as the unified enterprise registration standards, the mutual recognition of talent qualifications and the financial services accessible within city clusters.

4. Construction project

The exploration of specific mechanisms needs to be supported by practical carriers. The demonstration zone, which used to be a traditional township area in the south of the Yangtze River, needs to inject vitality into regional development and take innovation-driven construction projects as an important driving force

13 Xiaolei, Z.. Research on Institutional Innovation in the Yangtze River Delta Eco-Green Integrated Demonstration Zone. Scientific Development 2020.

for the development of the zone. In May 2021, the demonstration zone issued the Three-year Action Plan for Major Projects of the Yangtze River Delta Eco-Green Integrated Demonstration Zone (2021—2023) which identifies the latest major projects, proposes to follow the governance concept of 'wide consultation, co-construction, joint management, shared benefits and win-win results' through the implementation of projects, and calls for high-quality development of the demonstration zone.

Key projects are divided into centralized and classified demonstration. Centralized demonstration refers to the pilot start-up area in the demonstration zone which includes the high-standard construction of 'one living room and three areas'. One living room refers to the Water Town Living Room which is a model area for the practice of eco-green concepts in the demonstration zone. It implements inter-provincial unified planning, regardless of administrative affiliation, and serves as the public space of the Yangtze River Delta. The project, co-developed by Shanghai, Zhejiang and Jiangsu, adopts the mechanism of co-construction and co-investment, and a set of management standards will be applied in the future.[14] The three areas are Qingpu Xicen Science and Technology Innovation Centre, Wujiang High-speed Railway Technology and Innovation City, and Jiashan Xiang Fu Dang Innovation Centre. The Qingpu Xicen Science and Technology Innovation Centre focuses on advancing the construction of Huawei R&D Centre; the Wujiang High-speed Railway Technology and Innovation City is focused on accelerating the construction of the high-speed railway hub, Suzhou South Railway Station; and the Jiashan Xiang Fu Dang Innovation Centre is focused on the construction of innovative and intelligent water towns to build an innovation centre with distinctive features integrating institutions of higher learning, artificial intelligence, culture, tourism and creativity (see Figures 6.5 and 6.6).

Classified demonstration focuses on the key aspects of integrated regional development. Specifically it covers four categories: ① Cross-regional ecological co-governance; ② The inter connectivity of infrastructures such as rail transit; ③ Optimization of the business environment and promotion of industrial innovation; and ④ Co-construction and sharing of services for the benefit of the people. Taking cross-regional ecological co-governance as an example, the ecological governance of Yuandang in the demonstration zone is a typical case of the practice. Yuandang is an important provincial boundary lake between Shanghai and Jiangsu province, who naturally and geographically

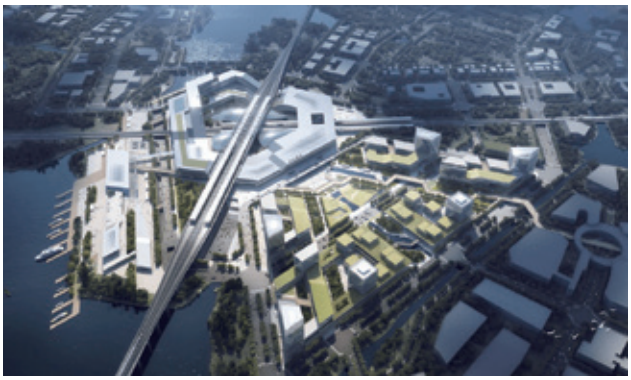
Source: The Official Social Media Account of the Shanghai Municipal Government. URL: https://mp.weixin.qq.com/s?__biz=MjM5NTA5NzYyMA==&mid=2654437332&idx=1&sn=ad04179b7f3fc097f5848abc4f83cdda&chksm=bd3e62af8a49ebb90aa4a8013fe0598c72fec41cab272ecb3f78430224b4d92a95a56e1c361d (2021) (Accessed: 13/06/2022)

Figure 6.5 The location of the 'one living room and three areas' key pilot start-up area of the demonstration zone

14 Xinhuanet. URL: http://sh.xinhuanet.com/2021-11/14/c_1310310269.htm (Accessed: 16/05/2022).

(a) Artist's impression of the Water Town Living Room

(b) Artist's impression of the Qingpu Xicen Science and Technology Innovation Centre



(c) Artist's impression of the Wujiang High-speed Railway Technology and Innovation City

(d) Artist's impression of the Xiang Fu Dang Sci-Tech Innovation Green Valley in Xitang, Jiashan

Figure 6.6 Artist's impressions of areas in the demonstration zone

share the same water source, the Dianshanhu Lake.

Before the establishment of the demonstration zone, the water body of Yuandang Lake (separated from the Dianshanhu Lake by silt) was under the jurisdiction of two respective administrative entities, Qingpu in Shanghai and Wujiang in Suzhou. Each entity often gave priority to economic benefits and few actions were taken with regard to environmental governance: the water quality in Yuandang remained below Class V – navigation, utility and industrial use – all year round. In 2020, the Executive Committee of the demonstration zone led local governments to jointly promote the launch of an ecological restoration and function improvement project for Yuandang. As a result, they abandoned separate governance and began to follow the approach of wide consultation, co-construction and joint governance of Yuandang Lake. Integration has now been achieved in a series of measures including connecting water systems, removing obstacles in river channels, clearing away silt and dredging waterways, restoring bank slopes and conserving water sources. A 10.5 km ecological shoreline has been built in Yuandang and the water quality has been significantly improved through joint protection and co-governance. On the basis of the success of Yuandang, the demonstration zone has summarized the results and released guiding opinions on the Implementation of the Integration of Cross-border Water Body Ecological Restoration and Shoreline Connection Project; and the Implementation Standard for the Integration of Cross-border Water Body Ecological Restoration and Function Improvement Project, providing a model for integrated joint protection and co-governance of the environment (see Figure 6.7).

Figure 6.7 Aerial view of the connected Yuandang shoreline and the Ecological Restoration Demonstration Project

5. Summarizing and popularizing the results of test trials

The demonstration zone has continued to play its role sharing results while forging ahead. According to the press conference for the second anniversary of the establishment of the demonstration zone, in October 2021 the demonstration zone had made 32 and 41 institutional innovations in the first and second years respectively in the cross-regional flow of market factors, and planning and management, together with other important fields. In addition, it has made considerable efforts to advance 65 major projects including the construction of the Water Town Living Room providing lessons in coordinated regional development for other parts of China to draw from. The leading team in the development of the Yangtze River Delta has twice issued documents to recommend a replicable experience of the demonstration zone to the whole Yangtze River Delta and other regions of the country where conditions permit. It has also held a seminar to recommend a replicable experience in the demonstration zone's institutional innovations. In the future, more institutional innovation experience from the demonstration zone will be practiced throughout the country.

Reference experiences

1. Conduct governance actions across administrative divisions to lay a foundation for the development of regional integration

Using its mission to promote a national strategy, the demonstration zone takes driving the higher-quality integrated development of the Yangtze River Delta as its orientation, and has promoted coordination and cooperation between central and local governments. It has also made an overall strategic plan for the site selection, planning management system, plan preparation, development mechanism and other aspects of the demonstration zone, laying a foundation for its integrated development. In terms of the management system, the demonstration zone has set up a three-level management structure of council,

executive committee and development corporation, which plays a role in the overall systematic design, resources planning, cross-regional coordination, standard formulation, etc., and guides the specific implementation in relevant regions. It not only connects national strategies from the top with the development of districts and towns but also draws forth a governance pattern of co-governance within the circle plus statutory institutions plus market operation.

The council comprises relevant government departments in Shanghai, Zhejiang and Jiangsu and the local authority of the demonstration area. Executive vice governors in Shanghai and Zhejiang and the executive vice mayor in Jiangsu take turns to chair the council so that the three areas can develop ways to accentuate the role of the government and local responsibilities while unifying planning and decision-making. To fully incorporate social suggestions, famous entrepreneurs and representatives of think tanks are invited to be special members of the council, playing a role similar to that of an independent director of a company. Attention is also paid to handling the relationship between the government and the market in the development and construction of the demonstration area so that the merits of both can be fully motivated simultaneously. In August 2020, the Developer Alliance of Yangtze River Delta Eco-green Integration Development Demonstration Zone was established in the demonstration zone with members such as enterprises and professional institutions, e.g. universities. With the Alliance as a link, the demonstration zone actively leads market entities to promote effective resource allocation, stimulate the self-motivation of enterprises, universities and other social entities, and help the Yangtze River Delta develop in quality and an integrated manner.

2. Promote cross-regional collaborative governance featuring co-construction, shared benefits, shared responsibility, and win-win solutions and support for the integrated regional development

The demonstration area is characterized by cross-administrative division in terms of spatial form but the administrative division cannot be changed. Therefore, it is necessary to change the barriers under the established administrative divisions and amend the original local development orientation independent of each other so as to form development synergy. This requires a consensus on development and governance as well as specific institutional arrangements for integration to provide a feasible development path for regional cooperation. The demonstration zone has carried out institutional innovation and systematic reform practices on common issues that need regional coordination such as cross-regional ecological governance, common construction and sharing of public services, and free flow of market factors. It summarizes and forms a new model of five to one cross-regional co-construction and co-governance: one blueprint to cover the whole region; one main body to manage development; one platform to manage implementation; one set of standards to manage quality; and an integrated system to standardize governance. For example, the development and construction of the Water Town Living Room project is an example of innovative practice and application scenarios in the light of this model.

The Water Town Living Room project is jointly financed by Shanghai, Jiangsu and Zhejiang, while Yangtze River Delta Integration Demonstration Zone New Development Construction Co. Ltd. (the Yangtze New Development Company) was also established with the same proportion of capital and the same shareholding. As members of the Developer Alliance, the Three Gorges Group and the Yangtze New Development Company have set up a joint venture called the Watertown Living Room Company to actualize the concept of one main body to manage development. Multiple local entities at many levels jointly prepare urban design and detailed control planning of the Living Room in order to actualize the concept of one blueprint to cover the whole region. The joint command of the project was established to realize the concept of one platform to manage implementation and a three-year action plan for the Living Room construction has been formulated to accelerate implementation of the planning and construction guidelines for the pilot area, so as to realize the concept of one set of standards to manage quality. An integrated system to standardize governance for planning management, land management, financial and tax sharing and other key areas has become the reality.

3. Promote quality and innovative regional development under the guidance of ecological and green concepts

The demonstration zone hopes to find a way out of the traditional homogeneous development model of inefficient regional competition at the expense of the environment, and instead promote ecologically sound economic and social development of a high quality by coordinating ecological protection and economic development, environmental quality and project development. In order to transform ecological advantages into soft environmental advantages that attract and gather various high-end innovation factors, the demonstration zone proposes to cultivate an industrial system in which the innovation chain and industrial chain make headway together and build a new economy with global influence, centring on five environmentally friendly economic systems: digital economy; innovative economy; headquarters economy; service economy; and lake economy. In terms of spatial organization, the demonstration area coordinates the three major spaces for ecological development, production and residents, and gives priority to ecological protection while declining concentrated and contiguous development. Weighing up the regional development mode of characteristic towns in the south of the lower reaches of the Yangtze River, the demonstration area builds a multi-centre, networked and integrated layout.

Tehran, Iran: Smart Tehran Programme – Promoting Inclusive, Integrated and Sustainable Urban Management with Smart City Functionality

Case background

A growing metropolis accommodating some 8.9 million inhabitants as of 2018, Tehran is a rapidly evolving city with the population predicted to grow to 10.24 million by 2030.[15] Spanning 61,562 hectares, population growth, unprecedented rates of urbanization and deficiencies in urban monitoring and management have aggravated issues of environmental pollution, traffic congestion and quality of urban life in Iran's capital.[16] To meet these new challenges head on, Tehran municipality launched STP in 2019, aiming to transform the metropolis into a more sustainable and liveable smart city for citizens, tourists and businesses (see Figure 6.8). Accordingly, the programme has envisioned a higher quality of urban life with more efficient transportation systems, integrated infrastructure and a dynamic, vibrant economy with human-centred urban management. The six core strategic objectives of the plan include: ① Improving transparency and public engagement; ② Increasing citizen satisfaction; ③ Promoting sustainable urban development; ④ Fostering partnerships and co-creation; ⑤ Advancing digital transformation; ⑥ Promoting urban innovation.

STP has sought the delivery of an integrated city-wide strategy for sustainable urban development, leveraging efficient information and communications technology (ICT) that enables citizens to more effectively contribute to urban management. In addition, it has looked to embed a culture of hi-tech, accessible digital platforms into Tehran's infrastructure and services, and develop an optimized system of automated processes and e-services for the city, its citizens and stakeholders. Knowledge-based, modern ICT platforms have been viewed as essential components to ensure more inclusive urban decision-making. STP is enabling Tehran to foster greater levels of collaboration through the engagement of all stakeholders within the smart city ecosystem (including businesses, policymakers, regulators, decision-makers, investors and innovation groups) thus shifting away from a traditional siloed approach in the delivery of Tehran's urban services towards an inclusive, integrated and innovative open-data approach. However, it is important to note that Tehran is not only aiming to enhance the city through ICT infrastructure, but also seeks to fulfil the six dimensions of becoming a 'smart city' achieving: ① A smart economy; ② Smart mobility; ③ A

15 United Nations Department for Economic and Social Affairs. URL: https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf (Accessed: 10/06/2022).

16 International Department of Smart Tehran, Tehran Municipality. URL: http://www.smartcity-dialogues.com/wp-content/uploads/2019/12/DAY-01-FARJOOD-BINA-Tehran.pdf (Accessed: 10/06/2022).

Figure 6.8 An open forum session and public participation at the 2019 International Innovation & Technology Exhibition

smart environment; ④ Smart infrastructure; ⑤ Smart governance; ⑥ Smart life.

As a revolutionary approach to city management, STP has transformed the way key urban services are being delivered throughout the municipality, as well as the means by which citizens are engaging with everyday life in the city. Utilizing the potential of smart technology, connections are improving between residents, businesses, government officials and other urban stakeholders. The programme is hence making a strong contribution to sustainable urbanization and the SDGs; broadening and strengthening citizen participation and better integrating them in key decision making processes whilst realizing a mode of governance that is more responsive and representative. The city is actively enhancing its sustainability, with positive repercussions felt across socio-economic, environment and cultural spectrums.

Implementation process

Smart Tehran has built upon the main challenges and priorities set out by Tehran's city council. STP was deployed through a practical approach focusing on several flagship and proof of concept projects to advance the delivery of smart city services (see Table 6.1). The Smart Tehran Centre (STC) is the primary entity responsible for planning, implementing and monitoring STP projects, whilst the Smart Tehran

Table 6.1 Evolution of the Smart Tehran Programme

Phase	Year	Action
STP 0	2018	Planning and marketing
STP 1.0	2019	Initial and proof of concept projects
	2020—2021	Vertical projects
STP 2.0	2022—2025	Horizontal development and scalability

Strategic Council (STSC) leads smart city policymaking and the Tehran Municipality ICT Organization leads in the development of ICT related infrastructure and strategy.

In 2018, STP initiated the pre-planning phase STP 0.0 to focus on smart city planning and developing related policy and macro-strategy whereby smart city pilot projects developed and implemented increased public awareness of the smart city ecosystem among residents, businesses, government officials and other city stakeholders. STSC and STC were also formally established in STP 0.0 to advance centralized decision-making. Subsequently, STP 1.0 was launched in 2019 with the implementation of 5 initiatives and 12 plans, with STP 2.0 (2022—2025) currently underway, focusing on expanding and improving existing services, further developing smart city services at a macro level and evaluating the impact of STP 1.0. Importantly, STP 2.0 also underlines long-term investment mechanisms in smart city ecosystems to secure private sector budgets, and 5G smart services based on collaborative regulation. Where the majority of the implemented initiatives, plans and projects are related to STP 1.0, these initiatives and plans are detailed below.

1. Development of STP 1.0

STP 1.0 embraced a three-year (2019—2021) roll-out plan that focused on five core initiatives as shown in Table 6.2. The first initiative is the foundation of STP 1.0 where the citizen services platform MyTehran aims to consolidate multiple digital city services into a single application, whilst neighbourhood and public engagement (BAHAM) serves as an urban innovation and engagement platform that drives smart city development. In order to generate innovative solutions and achieve Tehran's vision of utilizing the 'city as a platform', the second initiative raises two plans that aim to help integrate and enhance the innovation ecosystem and promote smart technologies and devices. The third and fourth initiatives promote green and sustainable modes of transportation and energy use. And the fifth initiative fosters the use of shared, open data and the integration of smart building services, smart municipal services/solutions and smart city infrastructure development. The initiative focuses on improving data accessibility for stakeholders as it brings together projects such as Open Data for Cities (containing over 1,400 datasets), open Application Programming Interfaces, a transparent municipal portal and decision support systems based on smart

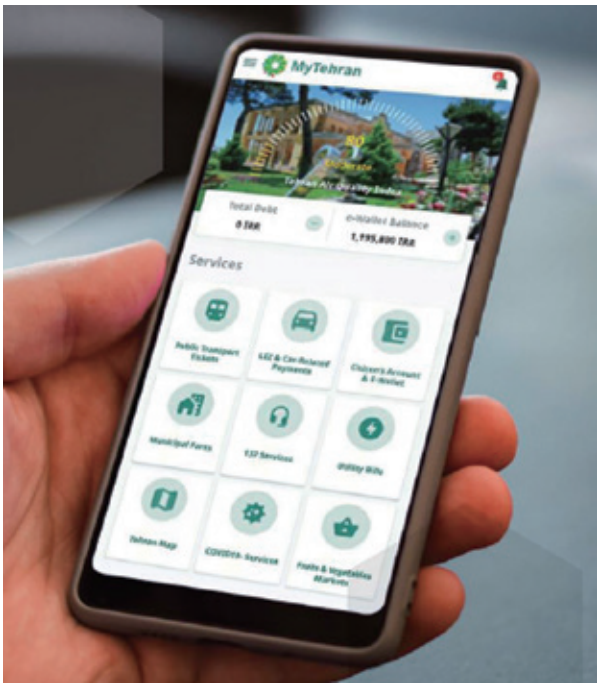
Table 6.2 The 5 core initiatives and 12 associated plans of STP 1.0

Initiatives	Related plan
Smart Citizenship and Digital Services	Citizen Services Platform – MyTehran
	Neighbourhood and Citizen Engagement
Innovative Tehran	Urban Innovation Market Platform
	Smart Urban Zones and Centres
Smart Travel	Smart Mobility Services
	Green Mobility
Smart Environment, Energy and Security	Smart Waste, Energy and Environmental Management
	Security and Urban Crisis Fast Alarm
Digital Transformation of Municipalities	Shared and Open Data
	Smart Urban Construction Services
	Smart Municipal Services and Solutions
	Smart City Infrastructure Development

city data to assist in optimizing city management. In addition, smart city applications and city e-services are deployed to create the 'Virtual Urban Area'. The 5 initiatives are comprised of 12 plans and 63 related projects. The introduction to the three main plans in STP 1.0 to achieve Smart Tehran – MyTehran, BAHAM and Green Travel, are described below.

2. Citizen Services Platform – MyTehran

The Smart Citizenship and Digital Services initiative spearheaded the launch of MyTehran, a mobile application unique to the region in regard to its fully integrated, user-friendly interface made easily accessible for citizens and supported by smart city technologies (see Figure 6.9). The idea of MyTehran was devised in April 2018 to provide account registration services for citizens entering Tehran's low-emission zone. Subsequently, over 40 services were added to the APP and the entire suite of payment services was developed in just two years. With over 3 million users registered in the short term and over 450,000 accrued transactions daily, MyTehran has become one of the largest digital platforms for smart city operations in the Middle East.



Source: Metropolis Urban Sustainability Exchange. URL: https://use.metropolis.org/case-studies/mytehran-app--1 (Accessed: 13/06/2022)

Figure 6.9 The MyTehran APP

The primary focus of the application revolves around finance, citizen's rights, location-based services such as on-street smart parking, and e-services such as housing and construction. For example, location-based services integrate geographic information system data layers supplied through accurate government data collection to provide personalized multi-modal routing and business optimization for local service providers. Virtual Tour Tehran and Tehran Interactive Map and Routing System realize the real-time GPS updates for location and traffic conditions in which information on public places and buildings are contained. Electronic services channel direct communication and interaction between municipal officials and citizens, while financial technology services and e-wallets make remote payments smoother (e.g. paying for utility bills such as water, electricity and gas supplies, municipal service fees, low-emission zone fees, municipal micro-electronic bills, e-ticketing systems, and on-street parking and e-tolling).

To guarantee optimal performance, the APP can also receive user feedback, requests and counter-views through in-house alerts and notifications, while the Citizen Cartable function provides transparent information about citizens' interactions with the municipality. MyTehran is revolutionary for the region by eliminating the need for in-person presence to prevent unnecessary travel, providing remote services that have a positive impact on reducing pollution and positive effects in lowering the risk of population exposure to COVID-19. The plan has significantly improved government efficiency and resident satisfaction (with a 68 percent satisfaction rate), [17] and new applications are being developed continuously to better serve citizen engagement (e.g. the BarBarg APP provides online posting of shipping documents, taxi-hailing services, direct debits, virtual tours, and mobile payments for bus and taxi fares via QR code scanning).

3. Facilitating public engagement

BAHAM is another plan permitting direct interaction

17 Metropolis Urban Sustainability Exchange. URL: https://use.metropolis.org/case-studies/mytehran-app--1 (Accessed: 13/06/2022).

and engagement between citizens and government under the Smart Citizenship and Digital Services initiative. It creates a more accountable and responsive system catering to public needs. The plan promotes innovative collaboration between citizens, accelerators, science and technology parks, incubators, start-ups, investment firms and government entities which also empowers the private sector (in particular start-ups) to help them address new challenges. It aims to build synergies (such as using business-to-business pairings) in creation, proof of concept and commercialization in the city and its innovation ecosystem. Where BAHAM has been integrated into MyTehran, traditional and modern tools have been utilized for gathering local input in the design and implementation phases of projects. It has not only increased the visibility of municipal projects but is also supported by neighbourhood development plans (170 of which have been prepared and 183 are in the pipeline.[18]) BAHAM elaborates technical details for all 353 community projects in Tehran and citizens can rank, vote and score the projects as well as inquire or propose neighbourhood development plans projects to local communities through the 137 hotline. Requests are analysed by artificial intelligence which also provides special features such as robot-chat to meet the needs of people with a hearing impairment or other disability. Such inclusive online services facilitate a more equitable, bottom-up decision-making process, promoting citizen participation and dialogue with municipality officials, and improving the socio-economics and culture of disadvantaged communities.

4. Promoting green mobility

Green mobility is the second plan under the Smart Travel initiative and consists of six projects. The plan encompasses electric vehicle charging stations, electric bus fleet development and light rail public transport, facilitating the development of noise and air quality sensor networks and exclusive bike lanes. Tehran municipality has been instrumental in the development of the Green Travel plan and an interactive bicycle APP. Car-free Tuesday, for example is sponsored and promoted by the Mayor of Tehran, and government-supported *Safar-e Eshgh* and *Naqsh-e Charkh* (campaigns to encourage the use of bicycles) and other initiatives have been promoted.

The city's proactive social networking and interpersonal skills led to a partnership with the Dutch MoveMobility group, drawing on their experience in running numerous bicycle APPs in several countries. Since creating user-friendly APPs requires understanding the preferences and needs of local residents, the Tehran government contracted a local company called Rajman for the APP's development (see Table 6.3). The Docharkheh APP, as shown in Figure 6.10, provides users with navigation, route selection and tracking functions motivating more people to cycle through promotional activities. For more convenience for cyclists, the navigation function has been developed to be adjustable to individual needs in four modes – fast, attractive, easy and safe. The tracking function allows users to view a summary of the route, helping citizens to manage their vehicle usage. The

Table 6.3 Timeline for developing the interactive bicycle APP

Timeline	Action
July 2019	Selection of brand and logo
December 2019	Launch of the interactive bicycle APP at the third Smart Tehran Conference
June 2020	Public launch of the APP for Android mobile on World Bicycle Day
September 2020	Public launch of the APP for iOS mobile on World Car Free Day
From winter 2020 to winter 2021	Launch and development of the APP

18 Hoseini, S. A. K.. URL: https://smartehran.medium.com/baham-smarter-tehran-together-99d2e38e1547 (2021) (Accessed: 14/06/2022).

Source: Smart Tehran Centre. URL: https://smartehran.medium.com/mytehran-mega-application-4679f515f9de(2021) (Accessed: 15/06/2022)

Figure 6.10 The interactive bicycle APP

APP encourages people to participate more in cycling by not limiting users' choice of promotional activities. Combined with other smart mobility services and management systems, Docharkheh actively relieves traffic congestion and issues such as environmental pollution and excessive energy use, and contributes to the creation of a green city. In December 2020, there were more than 5,900 registered users on the APP, 200 bike stations established along the 600 km new bike lanes and 2,000 new smart bikes in the city.

Reference experiences

1. Harness the potential of digitilization to increase citizen participation and accountaibility in urban decision-making

Digital transformation is modernizing Tehran's urban governance. With a growing distrust in governmental decision-making among citizens globally, ensuring transparent and accessible municipal services delivery is critical to building trust between citizens and officials. Increasing citizen participation in dealing with city affairs through STP is significant to promoting more socially equitable and inclusive city governance. On the one hand, it permits more diverse solutions to challenges, and on the other hand, it helps to add more accountability at the institutional level. The digitization of city services is also key to improving the administrative efficiency of local governments, creating a more resilient knowledge and information base at key city levels. In areas where the private sector is raising the bar on customer experience and engagement, the government also wants to keep pace. Therefore, local governments should recognize that digital public services are critical to advancing the implementation of achieving goals and effecting sustainable governance solutions.

2. Leverage innovation and technology to accelerate smart city development

Technology-related infrastructure deployment has enhanced Tehran's sustainable development. By promoting green transportation applications such as

Docharkheh, citizens are now favouring greener modes of 'soft' transportation, thus relieving environmental pollution, energy consumption and traffic congestion. In addition, smart waste collection e-applications are reshaping traditional methods of solid waste management through smart sorting, collection, control and disposal. By increasing the accessibility and connectivity of key services, social sustainability can be solidified, creating a more inclusive and equitable city. Encouraging the use of new technologies within local governments can thus be seen as highly beneficial to help generate innovative solutions to the challenges faced by individual city governments, understanding them as key tools to promote sustainable urbanization in line with the 2030 Agenda.

3. Improve governance resilience and crisis management capacity in the context of public health emergencies

With the increasingly structured smart city infrastructure, Tehran municipality is capable of effective COVID-19 containment. Six key tools have significantly improved governance in crisis: MyTehran citizen services platform; Shahr-Pay payment platform; a bicycle development plan to promote social distance; smart waste collection management; Behesht Zahra online funeral services; and open data for epidemic prevention and control. The outbreak of COVID-19 has accelerated the widespread use of technology in cities. Digital services are changing and adjusting citizen behaviour in multiple ways to improve living standards in the post COVID-19 pandemic era. This new era is full of hope in cities that apply smart technologies as the level of urban governance interventions has been greatly improved, supported and aided by increased levels of data sharing among citizens, businesses and the city management level.

Los Angeles, United States of America: Leveraging Partnerships and Open-source Technology to Drive Local Action on the SDGs

Case background

With a lack of commitment to international agreements on sustainable development at the national level in the United States of America, Los Angeles (LA) took the initiative to become one of the first cities in the world to take action on the SDGs at the local level. Following Mayor Eric Garcetti's pledge of striving to meet SDG commitments (see Figure 6.11), LA council adopted the SDG framework in late 2017, through which the Goals have now become fully integrated into the city's sustainability plan (LA's Green New Deal) and other strategic documents. The city government also committed to an open data approach to increase the transparency and accountability of urban management, empowering citizens to participate in governance with a greater understanding and impact on the ground. Through such an open-source data approach, the city has sought to maximize the advancement of the 2030 Agenda, enable the identification of opportunities to identify successful initiatives, mobilize new initiatives, identify weak spots and those being left behind, whilst also expand connections with partners and practitioners locally and globally. Such an active approach has placed the city in a position to spearhead the global development agenda.

Source: City of Los Angeles. URL: https://sdg.lamayor.org/about/sdgs-la (Accessed: 03/06/2022)

Figure 6.11 Mayor Eric Garcetti positioned the city of Los Angeles to springboard action on the SDGs

LA council has approached SDG localization through three primary avenues: ① measure; ② mobilize; and ③ connect. Measuring includes the collection of data, the generation of SDG insights and the production of VLRs via data reporting. Mobilizing involves the establishment of new projects to advance SDG implementation, capacity building and activity mapping. And connecting refers to the development of linkages and synergies with partners, engaging stakeholders and disseminating urban best practices with local and global stakeholders.

The council subsequently pioneered two open-source tools to accelerate SDG localization action. Open SDG is an open-source SDG data reporting platform and SDG Activities Index is a living encyclopedia of people and organizations who are actively working to accelerate SDG implementation. As the tools are open-source they can be viewed publicly by other cities or entities, each containing their own Wikipedia pages. Guidelines were made available via the Open SDG Quick Start Guide to enable contextually adjusted platforms to be set-up quickly, and without the need of a programmer. Accordingly, the platform possesses codes which can be reused by other cities to build their own platforms. The tools help the city to measure, mobilize and connect SDG action at the sub-national level, and have helped the city to build partnerships and generate equitable, sustainable initiatives across economic, environmental and social dimensions.

Implementation process

1. Applying a partnership-based approach to the SDGs

LA council's work to advance SDG alignment and reporting was largely initiated through a grant by the Conrad N. Hilton Foundation via the Mayors Fund for Los Angeles (MFLA). In February 2018, the city entered into partnership agreements with LA's Occidental College; a political economy institute through the John Parke Young Initiative, as well as the World Council on City Data for support on SDG work. Additional university partners including the Institute on Inequalities in Global Health at the University of Southern California; the Thunderbird School of Global Management at Arizona State University; the World Policy Analysis Centre at the University of California Los Angeles; and Pomona College, also provided support to the initiative through the provision of a pipeline of students to work of the SDG data collection process. Accordingly, the city has engaged over 160 graduate and undergraduate students from these partner academic institutions who have helped support SDG work, including the completion of more than 22 research projects on individual SDG targets.

Efforts to advance SDG action were thus strongly rooted in strong, multi-stakeholder partnerships, in particular city-university collaborations, which specifically played a pivotal role in the delivery of the city's online SDG tools (see Figure 6.12). Such partnerships embedded LA as one of the eight hub cities globally to share SDG-related data collected through the development of locally contextualized SDG indicators. With SDG mapping and alignment as key priorities, LA council also sought to establish baseline measurements to track SDG progress by developing an inventory of existing city plans that align with the Goals. All city activities, plans, policies and data were mapped to the SDG framework which helped to identify any gaps in policy and/or operations as well as key stakeholder required to achieve progress. Where certain indicators were not directly applicable to the local level, a methodology was devised for the council to determine the applicability of specific SDG targets to the city, revising those that did not reflect the local context. The SDG mapping and alignment process

Source: Office of the Mayor of Los Angeles. URL: https://unfoundation.org/blog/post/using-data-for-good-how-l-a-is-achieving-the-sdgs-through-gender-equity/ (Accessed: 04/06/2022)

Figure 6.12 LA council actively engaged students and youth members to advance progress on the SDGs

Source: City of Los Angeles. URL: https://sdg.lamayor.org/about/sdgs-la (Accessed: 03/06/2022)

Figure 6.13 Local departments in Los Angeles committed to adopting the SDGs

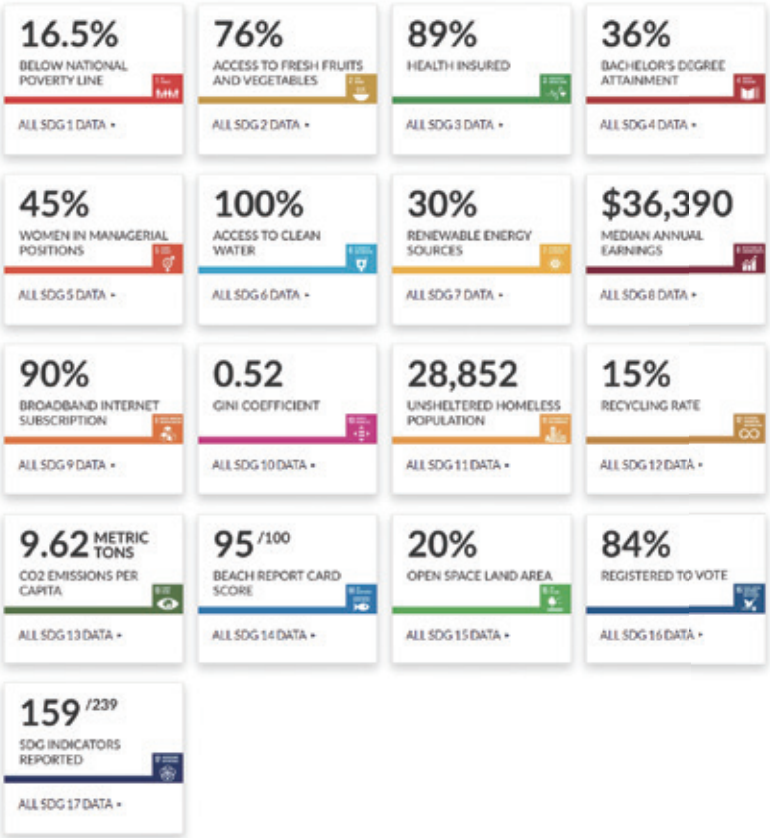
helped to compile an inventory of current activity through which stakeholders, policy gaps and trends in urban development could all be identified (see Figure 6.13). In addition, gap analysis helped to establish key partners to further advance SDG progress.

2. Developing a suite of open-source SDG reporting tools

With transparency as a central priority to LA council's SDG governance approach, two open-source reporting tools were developed to help organize city-related SDG data and information. Both tools are cloud hosted and maintained by the city's Information Technology Agency (ITA), whilst all work in recorded and maintained in a live wiki via GitHub.

An open-source, freely accessible platform for SDG related data and statistics, LA council's Open SDG platform went live in July 2019 and currently reports on 159 SDG indicators drawing data from local and national sources into a centralized database. Over 30 of the indicators allow for the generation of disaggregated datasets, enabling users to identify left behind populations with toggle features that enable filtered data (e.g. for specific demographic or geographic information). The generation of disaggregated statistics has allowed the city to analyse development challenges with more granularity, especially relevant for tackling issues of poverty and hunger. The platform was designed to operate at the national level initially; however, through localized adjustment LA council adopted it for sub-national reporting with the support of the Centre for Open Data Enterprise; the city's ITA and MFLA. For larger jurisdictional levels (such as the county of LA and the state of California) associated data can also be reported in particular for policy-related and non-statistical indicators or those functions which reside outside that of the municipal authorities such as public health and education. The platform utilizes machine-readable data and data visualizations (see Figure 6.14), and is fully customizable with multi-lingual features, offering translation in the six United Nations languages. As the platform is not proprietary, no licensing costs were required and the project team ensures its continual maintenance with the support of students and academic partnerships.

Where contextual adjustment was required for localized use of the platform, modifications were recorded in an open Wiki to ensure other cities and organizations



Source: City of Los Angeles. URL: https://sdg.lamayor.org/our-work/data-reporting-platform (Accessed: 04/06/2022)

Figure 6.14 The Open SDG data reporting platform dashboard, enabling easy visualization of key SDG data

could develop their own platform, reflecting their local reality. As a comprehensive page that seamlessly shares all information, this feature has generated a more transparent and inclusive approach towards data dissemination. Today, it serves as a prototyping trend analysis tool to help project quantitative data to 2030 and to help identify those indicators which require fast-tracking. The platform now engages around 250 users per month, and has been used to help promote equitable and sustainable urban initiatives that advance SDG localization. Recently, the cities of Barcelona in Spain, and Bristol and Liverpool in the United Kingdom of Great Britain and Northern Ireland have also utilized the platform, launching it via their own contexts.

A second tool, the SDG Activities Index, is a searchable and exportable crowd-sourced encyclopedia of all organizations driving SDG implementation in LA, directly established to build a shared capacity for advancement of the SDGs. The index has helped LA council to build a network of key actors by facilitating SDG localization through their everyday work. The preliminary list of projects was correlated by a team of students with additional entries crowdsourced from the community. Accordingly, any organization performing work on the SDGs in the city can input their work into the database, which is growing over time through the aggregation of community-based activities on the platform. Currently, the index hosts over 160 local projects that are actively facilitating SDG implementation in LA, with over 1,000 users engaged since its launch.

3. Leading the way in SDG reporting

In addition to the use of online tools, LA council has been instrumental in pioneering the roll-out of VLRs, publishing its first in 2019 and second in 2021. VLRs have served as key platforms for the city to report on its progress on SDG localization, integrating locally

contextualized indicators and illustrating local urban policies and initiatives across all 17 Goals. These reviews illuminate the strengths and weaknesses of local progress, helping to guide the formulation of new sustainable and equitable development policies. Such efforts have again demonstrated the city's commitment in the fulfilment of the 2030 Agenda.

The promotion of gender equity has also been a high concern locally, resulting in the Mayor's Office developing its own gender equity toolkit. The city council has added a gender lens to much of its operational work and services with a tailored methodology used to launch, manage and monitor efforts on increasing gender equality. Aspects such as the integration of street lighting, for example, of corners with high rates of human trafficking; the promotion of subsidized female sports programmes into the city's recreations areas; and the creation of professional development programmes to provide leadership skills to women and girls to boost civic engagement have all been targeted. The aim to allocate at least 4 percent of contracting dollars to women-owned businesses has also been deployed.[19] The Mayor's Office has increased the city's minimum wage to USD 15 an hour, providing a payrise for nearly 50 percent of the city's female workers.[20] Through a proactive approach; building SDG-focused partnerships; utilizing contextualized data; and promoting monitoring and reporting, LA has led the way globally in facilitating implementation of the SDGs and has showcased the city's commitment to fulfilling the 2030 Agenda.

Reference experiences

1. Align urban development strategies to the SDGs and understand the SDGs in the reality of the local urban context

For cities that plan to localize implementation of the SDGs, interpreting the 17 SDGs and their targets into actionable and measurable plans and indicators at the sub-national level is the primary challenge. In practice, LA council has explored a methodology that broadly encompasses two principles: ① it is necessary to match existing urban strategies, plans and data resources with the SDGs framework and indicator system to generate an inventory of current activities. Conducting comparative analysis can help to identify gaps between cities and goals and key collaborators and stakeholders needed to make progress; and ② local adaptation of the SDGs is required. Indicators that are not suitable for cities should be revised or replaced on the premise of retaining the original intention of the goal. Development goals that are neglected in the global framework should be supplemented and more accurate goal-based strategies and indicator systems should be proposed based on multi-dimensional data classification such as population and geography. The goal interpretation by the way of practice breaks some constraints brought by the SDGs localization and can reflect the actual local situation more accurately, which can provide a reference for other cities around the globe.

2. Create diversified and stable partnerships to accelerate SDG action

Driving SDG action at the local level relies on the mobilization of new partnerships with a range of internal and external stakeholders whereby focused partnerships have been crucial in enabling LA to advance the SDG localization process. The case of LA shows that the effective advancement of the project is based on the extensive mobilization of internal and external stakeholders, and the project itself is the product of multi-sectoral cooperation among governments, the private sector, academic institutions and non-profit social organizations. Among them, the close cooperation between cities and universities is of unique value. The deep involvement of students and scholars in SDGs can bring expertise and innovative solutions to cities. Throughout the project, more young talent came to know and understand about the 2030 Agenda and devoted themselves to

19 City of Los Angeles. URL: https://docs.google.com/presentation/d/1wszqpmZnHMNe62AQSsi1omS2AMLcOy6nsAI9W7kzw_g/edit#slide=id.p1 (Accessed: 07/06/2022).

20 Altman. M. J.. URL: https://unfoundation.org/blog/post/using-data-for-good-how-l-a-is-achieving-the-sdgs-through-gender-equity/ (2021) (Accessed: 07/06/2022).

the localization practice. In LA, for example, more than 160 undergraduate and graduate students from multiple academic institutions participated in the SDGs, completing extensive data collection and over 22 research projects. Given the lack of youth representation in decision-making and action in many cities, city-university cooperation provides students with the opportunity of more diverse perspectives on SDGs strategies at the local level. In-depth cooperation between the two can also cultivate more future champions of sustainable development and give young people opportunities to take the lead in promoting inclusive responses to the SDGs in the city.

3. Capitalize on open-source tools to strengthen local initiatives on the SDGs

The open-source platform developed by LA council throughout the SDGs localization can be flexibly applied at the sub-national level providing a clear path for deepening the SDGs framework globally. Open-source platforms can bring together projects in the public, private and non-profit sectors and effectively link them to the post-interpretation SDGs of cities. Based on the monitoring and evaluation of the progress of SDGs in a real-time manner, the platform assists cities in formulating more targeted policies to successfully meet the goals of addressing local challenges, improving the living standard of community residents and promoting sustainable development. Both open SDG and SDG activities index platforms have been equipped with the hypertext-based system of cooperative multiplayer which is built by open-source code with low technical thresholds and can be used by other cities for free. On the premise of technology sharing, the open-source platform enables cities around the world to carry out localized applications according to local needs and feedback on the latest practices and data. This move also helps to build a network of inter-city partnerships and redefine the new role of cities in the global development agenda. However, it should be noted that the application of open-source platforms such as Open SDGs is not enough. The introduction of innovative measures and the improvement of government capacity are still of great significance to the practice of the SDGs.

Policy Suggestions

Seek Localized Sustainable Solutions to Urban and Community Problems and Institutionalize Them through the Preparation and Implementation of Community Plans

The positive impact brought by the implementation of the Grandview-Woodland Community project on sustainable urban development is gradually emerging, especially its outstanding and symbolic contribution to creating an inclusive city. For cities and communities with marginalized groups, it is critical to make sure that their voices are heard and their needs are considered in the urban governance process. Only in this way can we build more equitable and inclusive urban communities that leave no one behind. For ordinary urban communities of different sizes, populations, environments and cultures there is also a universal reference value in focusing on maintaining the diversity of community housing, transportation, facilities, land use and economic opportunities including sustainable approaches to urban development from an economic, social, environmental and cultural perspective. At the urban level, community planning should be promoted and institutionalized to achieve the following objectives: ① More effort should be made in the supply, management and renewal of various types of housing in communities to meet the diversified housing needs; ② Strengthening community economies through a range of retail and commercial activities is necessary; ③ Multi-modal and sustainable green transport solutions should be developed to improve the safety and capacity of cities; ④ Green building design and renovation should be adopted to support energy savings and optimal environmental performance for all new buildings; and ⑤ Historical issues should be addressed to drive forward positive urban change. Only in this way can inclusive, resilient and sustainable governance be actualized.

Avoid Local Decentralization and Continue to Promote the Integrated Governance of Regional Ecology, Economy and Society

In the face of closer regional competition and cooperation, local development needs to go beyond the closed-loop economy within the administrative boundaries of an area to break down the mobility barriers and market separation between the regions. Local governments also need to jointly improve the allocation of resources while strengthening green development and ecological co-governance across the region. Cross-regional coordination and benefit-sharing mechanisms should be built up with clear arrangements of duties and responsibilities of different local authorities and the system to optimize cross-regional ecological co-governance to facilitate regional integrated governance.

While activating the potential of local development, integrated regional governance will inevitably break through the established arrangement of local institutions such as the administrative divisions: coordination and cooperation from the central and local levels is therefore important. It is necessary to formulate clear and achievable goals and action paths, and focus on introducing market and social forces to give full play to the effectiveness of multi-subject governance. In terms of the specific operation and implementation, a pilot area can be set up to explore a new coordinated development mechanism of cost sharing, benefit sharing, and win-win cooperation to ensure the effectiveness and sustainability of coordinated and integrated regional development.

Promote Smart City Governance through Multi-party Cooperation and a Developed Information Construction Mechanism

Tehran's case on STP highlighted three key policy recommendations: ① To consolidate public-private partnerships, give full play to the innovative spirit of private enterprises and better solve public interest problems while improving public policies; ② To prioritize the protection of tangible and intangible cultural heritage to avoid potential threats or damage to the precious local culture that could be caused by the rapid development of technology; and ③ To establish an information sharing mechanism that embodies a trust and protection mechanism that allows for information disclosure without compromising personal privacy. Appropriate policies and regulations should be formed to maintain and protect privacy which will help achieve sustainable data governance based on data sharing and analysis.

Capitalize upon Open-source Technology to Enhance and Encourage SDG Monitoring Taking into Consideration Local Socio-economic Development and Relevant Risks and Challenges

LA sets a good example of fostering and utilizing partnerships and open-source technologies to facilitate the implementation of SDGs at the local level. The two tools developed by LA council are open-source, adaptable and flexible for sub-national reporting, and can be leveraged by local governments in a low-cost, transparent manner. LA has laid out a valuable path to accelerate the SDG framework globally. Capitalizing upon open-source technology enables governments to build and distribute online tools as part of a global community, helping to facilitate SDG localization collectively and enhance reporting on SDG best practices. Open SDG specifically allows cities to focus their content and data without the need to maintain platform functionality meaning documentation and outreach can become focused on a singular, clear best practice. Using open-source tools for the SDGs can also provide a core foundation from which to monitor SDG localization progress and help to identify who is being left behind. Where data disaggregation is a key aspect in enabling this, cities should seek to contextualize specific SDG indicators to better reflect their local realities. From this perspective, they can build more relevant strategies, plans and policies addressing local challenges. The tools can also help cities to identify partners to advance sustainable development, set new standards and define new roles for cities and local governments in the international development agenda.

It should be noted that new initiatives and increased capacity of local governments will be important to sustainable SDG advancement. When applying these tools and interventions, the different development levels of urban areas should be taken into account as cities at different development stages face distinct socio-economic problems. Considering the gaps between developing countries and developed countries in terms of industrial level and data capacities, some cities and countries may be faced with more obstacles when it comes to using digital technologies.[21] However, open-source data platforms are relatively low-cost and can be effective for collecting data in places where statistics are lacking. Drawing on partnerships is another effective way to fill in the capacity gaps of local institutions. External uncertainties should also be considered. The COVID-19 pandemic has had a serious impact on the global sustainable development process and, as a result, the achievement of targets in many regions and cities may be delayed. In the face of many uncertainties in the future, the monitoring and evidence-based governance of cities should be dynamic and responsive to continuously improve their ability to deal with various risks and challenges.

21 Centre for International Knowledge on Development. Global Development Report . URL: http://www.cikd.org/detail?docId=1538692405216194562 (2022) (Accessed: 19/07/2022).

Chapter 7

Global Programmes, Processes and Networks on SDG Localization

Introduction[1]

Since the inception of the SDGs in September 2015, approaches towards their implementation have continued to evolve, carving a unique pathway for cities to lead sustainable development. This chapter lays out the global processes that have led to the SDGs and the notion of localization, as well as the core elements involved in the SDG localization process. It also presents some of the most notable global programmes and networks, including those of UN-Habitat, that are actively working to build the capacities of cities and local governments to deliver on the 2030 Agenda.

Global Processes towards Localizing the SDGs

Development of the SDGs

The SDGs build upon the outcomes of the United Nations Conference on Sustainable Development, Rio+20 in June 2012, and the eight Millennium Development Goals (MDGs), and have sought to converge with the post 2015 development agenda. Consultations on the post-2015 development agenda revealed the urgent need to work further to create a sustainable world, building upon and learning from the MDGs. In 2013, the United Nations Development Group (UNDG) report *A Million Voices: The World We Want* captured the results of an unprecedented global conversation on the post-2015 development framework vision; a process involving over 1 million people from across the world, many of whom had been previously poorly or under-represented. Here, issues of poverty, inequality, injustice and insecurity were brought to the forefront in regard to education, healthcare, governance, employment, environmental protection, gender and human rights, politics and technology among others, highlighting the need for drastic action across these essential development domains. Serving as core dialogues, this helped pave the way in designing the SDGs.

Following these discussions, UNDG's report *Delivering the Post-2015 Development Agenda* presented nationally contextualized factors working to both support and impede implementation of the agenda at the country level, highlighting the crucial role of national and local governments to ensure its 'localization'. Critically, it signified the need for investment to enhance capacity and resources at the local level to promote implementation, ownership, monitoring and accountability. Localization was thus identified as a key aspect of effective multi-level governance, providing the means to make the post-2015 discussions relevant to local populations under a framework of greater ownership. Subsequently, UNDG, in conjunction with UN-Habitat, the United Nations Development Programme (UNDP) and the Global Taskforce (GTF) of Local and Regional Governments (LRGs) produced the report *Localizing the Post-2015 Development Agenda* on the back of the key local and national dialogue. This led to the development of a strategic global coalition of partners for the agenda and further emphasized the need for collaboration between national and local governments for effective realization, highlighting the active role of local governments in global development cooperation as an essential process in order to achieve development results, democratize the aid effectiveness

1 This chapter was co-authored by expert teams from the Shanghai Institute for International Studies and the UN-Habitat. The Shanghai Institute for International Studies team includes: Zhu Yunjie, Yu Hongyuan, Guan Chenglong, Wang Xiaoyue, Zhang Zhibo, Liu Luying, Li Mingze, Zhang Aiyi, Zhao Hanyin from Shanghai Institute for International Studies; Li Guangming and Sun Mingze from Tongji University.

agenda and promote local ownership. LRGs have thus not only played an important role in influencing the definition of the SDGs but are also seen as the entities which will unlock the value of the Goals on the ground. It has been recognized that achieving the SDGs is inter-dependent on the performance of cities and municipalities whereby through applying multilevel and multi-stakeholder implementation approaches, they can serve as the core enablers of the SDG localization process.

With the 17 SDGs ratified in September 2015, a dedicated Goal on SDG 11 Sustainable Cities and Communities was created to transform cities and human settlements into inclusive, safe, resilient and sustainable places to live and work, with UN-Habitat as the dedicated custodian agency for 9 of its 15 indicators. Debates held by UN-Habitat and partners also contributed to the development of SDG 16 Peace, Justice and Strong Institutions and SDG 17 Partnerships for the Goals, and thus had significant influence on the 2030 Agenda for Sustainable Development. UN-Habitat's impact is further channelled through its role as the steward of the New Urban Agenda.

Adopted in February 2019, the Seville Commitment reaffirmed the importance that localization of the SDGs is heavily dependent on cooperation with local communities in seeking truly local solutions for global challenges. It has helped to consolidate and hone efforts in progressing the Local-Global movement to localize the Goals via local actors and civil society. Subsequently, in September 2019, the United Nations Secretary-General, António Guterres, called for all of society to mobilize for a decade of action on three fronts:

- Global action: to secure greater leadership, more resources and smarter solutions for the SDGs
- Local action: to embed the needed transitions in the policies, budgets, institutions and regulatory frameworks of governments, cities and local authorities
- People action: to generate an unstoppable movement pushing for the required transformations including youth, civil society, the media, the private sector, unions, academia and other stakeholders

These efforts have since been reinforced through the *Our Common Agenda* report of the Secretary-General in 2021, which sets out a common roadmap of next steps to deliver on the Charter of the United Nations to secure a greener, safer and better future. Critically, the vision builds upon the declaration on the commemoration of the 75th anniversary of the United Nations and the 12 commitments made by Member States. These include: to leave no one behind; to protect the planet; to promote peace and prevent conflicts; to abide by international law and ensure justice; to place women and girls at the centre; to build trust; to improve digital cooperation; to upgrade the United Nations; to ensure sustainable financing; to boost partnerships; to listen to and work with youth; and to be prepared for crises in the future. The vision bolsters the need for strong action on the 2030 Agenda.

In November 2021, UN-Habitat's Executive Board mandated UN-Habitat to 'actively advance SDG localization in support of the Decade of Action through normative guidance, technical assistance and strategic partnerships.'[2] This request was based on the recognition of the longstanding cooperation between UN-Habitat's work and LRGs, and its more recent efforts in SDG localization work to accelerate implementation of the New Urban Agenda. Accordingly, where UN-Habitat serves as the leading agency for engagement with sub-national governments (SNGs), it is mandated to coordinate a series of dynamic processes and mechanisms that are pivotal to the United Nation's work on SDG localization. These include: ① The United Nations Task Force on the Future of Cities; ② The revamped Local2030 Coalition; ③ The United Nations Advisory Committee of Local Authorities (UNACLA); and ④ The G20 Platform on Localizing the SDGs.

2 United Nations Human Settlements Programme. URL: https://unhabitat.org/sites/default/files/2022/05/priorities_2022-2023_adequate_housing_cities_and_climate_change_and_localising_sdgs_04142022.pdf (Accessed: 25/06/2022).

UN-Habitat has also developed a comprehensive approach and set of tools to support national and local governments to localize the SDGs from data and planning to project development and financing. This support ensures that the innovative characteristics of universality, interconnectedness and indivisibility of the 2030 Agenda and its Goals are localized. The work on SDG localization is guided by a partnership-based territorial approach with the core principles of 'leaving no one and no territory behind', multilevel governance and multi-stakeholder partnerships. Imperatively, these principles are translated into practice through innovation-based and action-oriented initiatives, following UN-Habitat's three-pronged approach: ① The Global Urban Monitoring Framework; ② VLRs; and ③ The SDG Cities Flagship Programme.

Via this integrated approach, UN-Habitat provides support throughout all stages of the SDG localization process from data innovation to strategic planning, policy formulation, capacity development, high-impact project delivery, monitoring, reporting and certification of exceptional city achievements towards the SDGs. UN-Habitat has also been working to advance SDG localization by providing technical expertise to partners across the globe, leading the development of cutting-edge research, capacitating LRGs on SDG localization, and strengthening the voice of local governments and local actors within the main international and United Nations-led fora on the SDGs.

Localizing the SDGs at the Sub-national Level

LRGs, Local and Regional Government Associations (LRGAs), national governments, CSOs, the private sector, academia, regional and international organizations and citizens are increasingly acknowledged as peers in the SDG localization process. With the spotlight on the 'local', it is recognized that SNGs have the capacity to respond to a multitude of growing and interconnected challenges from emerging economic crises and growing inequalities, to the climate emergency and unexpected health crises such as the COVID-19 pandemic. Aware of the significance of local action for the implementation of the 2030 Agenda, a growing number of LRGs around the world are taking action to localize the SDGs in their territories.

Where it is vital that urban stakeholders have clarity as to the global processes on SDG localization, the following sub-sections present a breakdown of the core elements needed for local implementation. It is widely recognized that there are three steps involved in the localization process. Firstly, cities and SNGs should seek to raise awareness on the SDGs to initiate an inclusive and participatory implementation process; secondly, they should establish a localized SDG Agenda – namely identifying local SDG priorities and planning for their implementation; and lastly, monitoring and reporting in which cities should ensure that SDG progress remains on track across their territories. Each of these three elements be presented here through the lens of SNGs; offering urban development practitioners a guideline toward SDG localization.

Raising awareness and promoting advocacy on the SDGs

From national and sub-national governments, the private sector and academia, to CSOs and individual citizens, all sectors of society should understand the transformative potential of the SDGs and be actively engaged in SDG planning, implementation, and monitoring and reporting. As the basis for driving sustainable development, promoting a greater knowledge and understanding of the SDGs among all members of society is an essential first step to advancing the localization process. Raising awareness not only increases the engagement of people and communities on the SDG Agenda, but also empowers them, providing a sense of ownership over the SDGs and increasing the understanding as to their participation and ensuring achievement at the local level. Advocacy on the Goals is vital to build national consensus for a bottom-up approach towards implementation and to cultivate an enabling environment for SDG localization.

Raising awareness and enhancing the profile of the SDGs should be undertaken at both national and sub-national levels whereby the mobilization of partnerships, the creation of public awareness

campaigns and promotion of inter-sector collaboration will all have major roles to play. SNGs are well-oriented to boost awareness of the SDGs across communities, bridging the gap between national governments and local communities whereby they should connect a diverse network of stakeholders, namely civil society, private sector enterprises (micro, small and medium enterprises), NGOs, community-based organizations and local citizens. Accordingly, they should seek to optimize knowledge structures, legitimacy, access to participation and efficiency based on all cultures, genders and origins of local people. With an obligation to lead local development, local governments pave the way in SDG localization and are hence accountable for the prosperity of their communities. It is important to note that local governments should not only focus on increasing awareness on the Goals but also local community engagement and participation facilitating a greater sense of ownership to the SDGs among local people. Through promoting a sense of direct connection between citizens and the Goals, this subsequently heightens the potential to drive SDG action on an individual level in their everyday lives. The development of enabling mechanisms for SDG participation can thus be a target area for SNGs.

La Rochelle Urban Community: SDG Awareness-raising

On 25 November 2021, the bi-annual Participatory Forum for Actors for Transition was organized by La Rochelle Urban Community, a Global Goals for Cities partner. As a dedicated 'SDG edition' the participatory forum sought to raise awareness on the SDGs and the 2030 Agenda, decomplexifying the Goals and working to promote their ownership among local stakeholders.

The workshop, as shown in Figure 7.1, encouraged participants to personally reflect on the SDGs and helped generate a common culture around the SDGs as a development framework. Participants gained a better understanding as to their respective contributions to the Goals, whilst the use of the SDGs as a framework helped to strengthen the existing projects being undertaken by participants. Tools such as SDG cards, SDG cubes, a SDG wheel and SDG booklets were all deployed to engage and transfer knowledge to participants, and additional visual components such as a SDG photo exhibition and project posters were curated to engage those involved.

Importantly, the event symbolized a means to raise the profile of the SDGs among a wide range of actors;

Source: URBACT. URL: https://urbact.eu/awareness-raising-around-sdgs-%E2%80%93-practical-example-la-rochelle-urban-community (Accessed: 11/08/2022)

Figure 7.1 SDG awareness-raising event held by the La Rochelle Urban Community (Photo credits: Cêcile Avril, Inprodtv)

helping to build a shared culture in which the SDGs can be fully integrated into urban and territorial development and local contexts. Critically, the event has enabled the La Rochelle Urban Community to synthesize and build upon the insights generated from attendees. Moving forwards, La Rochelle's organizers disseminated follow-up communications materials to participants, such as results obtained from the workshop, to ensure continuation of the momentum.

Where headway on sustainable development has already been made, it is key that SNGs capitalize on the existing partnerships and networks on sustainable development. This will not only help maximize SDG outreach but also save a considerable amount of time where connections have already been built. In countries in which the MDGs were pursued, LRGs should build on the established networks and organizations previously involved in the MDG process, as well as Agenda 21 programmes and other sustainable development strategies. Simultaneously, they should use the SDGs to engage with a wider variety of actors to initiate new forms of cooperation and participation.

SDG Leadership Cities Network

Established by the Brookings Institution in 2019, the SDG Leadership Cities Network covers 17 highly ambitious, pioneering cities around the world in regard to their pursuit of the SDGs at the local level (see Figure 7.2). The network provides the opportunity for partner cities to have an honest exchange as to their experiences in the SDG localization process to date, solving problems and identifying tools for sustainable development, and sharing lessons learnt and best practices in local SDG leadership.

Members: Accra, Ghana / Bogota, Colombia / Bristol, United Kingdom of Great Britain and Northern Ireland / Buenos Aires, Argentina / Durban, South Africa (eThekwini) / Hawaii Green Growth, United States of America / Helsinki, Finland / Los Angeles, United States of America / Madrid, Spain / Malmo, Sweden / Mannheim, Germany / Mexico City, Mexico / Milan, Italy / New York City, United States of America / Orlando, United States of America / Pittsburgh, United States of America / Yokohama, Japan.

Comprised of senior government officials, this global community of practice most importantly highlights the

Source: Brookings Institute. URL: https://www.brookings.edu/essay/sdg-leadership-cities-network-and-toolkit/ (Accessed: 03/08/2022)

Figure 7.2 Members of the SDG Leadership Cities Network

key role of urban leadership in achieving sustainable development. The generation of innovative tools, lessons learnt and strategies help further lay the foundations for additional cities around the world to achieve the SDGs.

The SDG Leadership Cities Network held its Sixth Meeting from 3–4 March 2022 as a roundtable in which key issues raised included the importance of unlocking new sources of sustainable finance for the SDGs; increasing citizen participation and improving SDG communication; building SDG partnerships and trust; and acknowledging city diplomacy and collective action as key factors moving forward to 2030.

The success of awareness-raising events ultimately hinges on the development of effective communication strategies. Where communication is well-tailored to target audiences, it has the potential to help demystify abstract concepts and increase clarity on the SDGs and sustainable development. Information on the SDGs should be made easy to understand for citizens around the world, engaging individuals on a personal level across an array of topics such as inequality, poverty, housing, jobs and services as well as climate change and environmental sustainability to help the SDGs gain traction across different sections of society. As core communications channels, SNGs are well placed to leverage the role of both traditional and social media to maximize the outreach of their messages across society. In addition, formal education such as teacher training, direct SDG educational programmes in schools and specialized curriculum development in this area can help promote SDG awareness among children and youth. Informal education including youth groups, online learning tools and activities in public centres such as libraries, also serve as valuable strategies.

SDG awareness-raising also brings about invaluable opportunities to capitalize upon the potential of local culture where associated activities may be held through a variety of means such as workshops and events demonstrating success stories, to concerts, bike rides, campaign buses, fairs and award ceremonies as well as partnerships with notable figures (e.g., actors, musicians, athletes, writers and photographers) or foundations which can act as ambassadors for the SDGs. The incorporation of gender perspectives to ensure women and girls, and other vulnerable groups, are not excluded is crucial to ensure inclusivity and equity – integral elements of the 2030 Agenda.

At present, it is apparent that some LRGs still remain unclear as to their role in localizing the SDGs, as well as a lack of know-how and capacity (e.g., human, technical or financial resources) to fully contribute to the process. Awareness campaigns undertaken through LRGAs and associated networks will be key to mobilize and upskill these entities and their members to enhance their understanding as to their role in the achievement of the SDGs and better equip them to instigate impactful SDG action on the ground. Enhancing the knowledge and sense of ownership of the SDGs among SNGs, regardless of their size or level of resources, will be essential with the necessary support of national governments and international organizations. LRGAs thus play a key role in ensuring LRGs remain aware of their role in both the implementation of the Goals and in the definition and evaluation of national and territorial strategies, and to ensure they take steps to redouble the institutional and operational capacities of their members.

Promoting visibility through International Days and events

As the leading United Nations agency on SDG localization; UN-Habitat plays a key role in creating space for dialogue, knowledge exchange and advocacy in this arena. As co-organizers of the World Urban Forum (WUF) – the premier conference on sustainable urbanization, this serves as a key event to promote visibility on urban development and implementation of the Goals among urban actors and stakeholders. The forum also encourages cooperation on best practices, policies and lessons learnt between key urban stakeholders and constituencies. The Twelfth Session of the WUF (WUF12) to be held in Cairo in 2024, will allow cities to explore new ways to forward SDG localization providing insights and experiences from an array of cities and urban actors around the world. In addition, World Habitat Day, first celebrated in

1986, is held annually on the first Monday of October and kickstarts Urban October. Centred around the global observance, on 3 October 2022 World Habitat Day will build around the theme of Mind the Gap. Leave No One and Place Behind in response to the growing inequalities witnessed in our cities and human settlements. Accordingly, it will provide cities and urban professionals with the opportunity to discuss and exchange knowledge and solutions on this key 2030 Agenda principle.

The Shanghai World Expo 2010 focused on the quality of life in cities and promoted the theme of Better City, Better Life consolidating and disseminating the achievements of the international community in sustainable urban development. The event enabled participants to share advanced concepts on cities and explore new approaches to the development of human habitats, lifestyles and working conditions across the 21st century. At the closing ceremony, the Bureau International des Expositions (BIE) and the Organizing Committee of Shanghai World Expo jointly issued the *Shanghai Declaration* in which participants proposed to designate 31 October as World Cities Day in a bid to preserve and spread the notions and practices presented at the Expo 2010, and to inspire the unremitting efforts of cities to innovate for harmonious development.

The *Shanghai Declaration* has since operated as an important document on the issue of sustainable urban development that builds on the consensus of the Shanghai World Expo 2010, and puts forth a common vision of the global public for a harmonious and better urban life in the urban era.[3] Propositions include:

- To establish an ecological civilization oriented toward the future
- To pursue inclusive and balanced growth
- To promote scientific and technological innovation as a path to development
- To build a smart and accessible information society
- To foster an open and sharing multicultural society
- To build friendly and liveable communities
- To pursue balanced urban-rural development

Critically, the *Shanghai Declaration* summarizes the Expo's goal to make a better blueprint for urban development under the theme Better City, Better Life. It highlights the essential elements and key actions required for sustainable urban development presented at the Keynote Forum and Summit. The declaration calls on all cities to take the following actions: governments and businesses should act together to develop cleaner industries and use low-carbon technologies and renewable energy; and technology should be deployed to achieve a win-win situation for all urban citizens. Cities should be made more inclusive, accepting different cultures and promoting harmonious coexistence, whilst opportunities should be made available to the public so that they can participate in the governance of the city and create a friendly, responsible and inclusive social environment for all. At the same time, dialogue and integration between urban and rural areas should be enhanced to promote balanced development.

Following the launch of the *Shanghai Declaration*, Jean-Pierre Lafon (as president of BIE) stated: 'The *Shanghai Declaration* is a positive outcome that reminds us once again of the consequences of sloppy urbanization including insecurity, climate pollution, traffic congestion, the division between rich and poor and the alienation of people, among others. Technological advances can help us find remedies, but to make progress, each of us must show a willingness to do so. Only by paying attention to the *Shanghai Declaration* and following it up consistently will we be able to ensure that its value is realized. We hope that we can work together with the Chinese authorities on behalf of BIE to conduct regular exchanges with community staff, mayors of cities, architects, urban planners, sociologists and NGOs, based on approaches to be further defined. We need to conduct regular assessments of the implementation of the *Shanghai*

3 Xuehua, W.. Wen Jiabao Delivered a Keynote Speech at the Shanghai World Expo Summit Forum. *Shanghai Declaration* and *Youth Initiative* Are Released [J]. Security Today, 2010 (10).

Declaration in each country.'[4]

On 28 December 2013, the sixty-eighth session of the United Nations General Assembly passed a resolution to designate 31 October as WCD starting in 2014, inviting the opportunity for states, the United Nations and UN-Habitat in particular, relevant international organizations, civil society and other interested parties to collaborate on issues of urbanization on an annual basis, marking an important International Observance Day for cities. It was emphasized that all costs incurred by the event should stem from voluntary contributions, with a focus on assisting developing countries through transnational cooperation. Bringing Urban October to a close, WCD has since marked a successful confluence of the international community's thinking on urban and sustainable development, emanating as a natural product of global urbanization (see Table 7.1).[5]

Co-hosted by UN-Habitat and the Shanghai municipality, WCD emphasizes the necessity for sustainable urbanization, focusing on a wide spectrum of current urban challenges across the lenses of urban economy, culture, planning and design, environmental sustainability and resilience to urban management, science and technology, and information technology. Via thematic activities, forums, training and knowledge exchange, it aims to raise the attention of governments and society as a whole to solve the problems of urbanization and to actively respond to the opportunities and challenges presented by the urbanization process through urban governance. The establishment of WCD can help build a consultation mechanism on urban issues, encourage governments to focus on major urban challenges, and develop and implement transformative solutions on a global scale. WCD also serves to strengthen the role of individuals, civil society and organizations in solving urban problems. Through the exchange and cooperation platform that WCD provides, the international community can connect, integrate and optimize resources in various fields related to urban issues, whereby developing and developed nations can merge to discuss priorities emerging through rapid urban development and learn from advanced experiences. The observance day is also supplemented by activities at the national level in which domestic city forums are organized, in addition to activities at provincial and

Table 7.1 World Cities Day, 2014—2022

Year	Global Observance Host City	Global Observance Host Country	China Observance Host City	Theme
2014	Shanghai	China	Shanghai	City Transition and Development
2015	Milan	Italy	Shanghai	Designed to Live Together
2016	Quito	Ecuador	Xiamen	Inclusive Cities, Shared Development
2017	Guangzhou	China	Guangzhou	Innovative Governance, Open Cities
2018	Liverpool	United Kingdom of Great Britain and Northern Ireland	Xuzhou	Building Sustainable and Resilient Cities
2019	Yekaterinburg	Russian Federation	Tangshan	Changing the World: Innovations and a Better Life for the Future Generations
2020	Nakuru	Kenya	Fuzhou	Better Quality of Communities and Cities
2021	Luxor	Egypt	Shanghai	Adapting Cities for Climate Resilience
2022	Shanghai	China	Shanghai	Act Local to Go Global

4 China Internet Information Centre. URL: http://www.china.com.cn/zhibo/expo2010/2010-10/31/content_21199742.htm (2010) (Accessed: 25/06/2022).

municipal levels.[5]

Implementation

Whilst the realization of many of the SDG targets is directly related and dependent on local government action, the pertinency of specific SDG targets varies in line with the differing contexts of municipalities and territories globally. With different political landscapes, geographies, cultures and socio-economic conditions, the challenges and opportunities faced by each city remain fundamentally unique, and it is important that local governments assess the SDGs in accordance with their own individual realities. SDG implementation should thus reflect both local and regional needs, whilst maintaining coherence and alignment to national strategy whereby needs assessments will be pivotal to identify SDG priorities and help local governments advance the localization process. It is key that each level of government possesses sufficient capacity to establish their own priorities in response to pressing local challenges, integrating focused sectoral policy alongside local and regional plans. Accordingly, the review of local and regional plans and programmes remains key to setting local policies, allowing for the identification of gaps and deficits in SDG progress and therefore primary needs, as well as the cross-sectoral linkages between municipalities and their alignment to the SDGs and national priorities.

Mapping and alignment of local plans with the SDGs is therefore vital for impactful implementation. Local plans should build upon a baseline diagnosis of the local context and conditions, setting out a comprehensive vision for the municipality, and integrating and aligning Goals and targets to specific policies and strategies. Through the establishment of localized SDG priorities, shared targets can be concluded for local municipalities and aligned with regional and national plans. This will consequently allow for the formulation of project interventions in areas where development progress on the 2030 Agenda is stagnant and/or declining. Where progress and understanding on the SDGs has evolved since their inception, there is now a firm emphasis on the application of an integrated approach to SDG implementation, understanding SDG interlinkages at both the Goal and target level. Building upon the establishment of a set of localized SDG priorities, an integrated approach to implementation will help LRGs manage trade-offs and maximize synergies across individual targets, and thus deliver more impactful action on the ground. Where this requires urban actors to understand the complex system of SDG interconnections, acknowledgement that these actions will likely have wide-ranging impacts across a variety of different Goals is key.

It is also important to note that SDG priorities should also ensure local ownership, fully involving and serving the interests of local stakeholders, multi-levels of governance, and critically marginalized and vulnerable groups to ensure equitable development policy that leaves no one behind. As a central premise to the 2030 Agenda and the SDGs, the principle leave no one behind is key to deliver truly transformative action, ensuring positive development impacts are experienced by all. The principle reflects the unequivocal commitment of all United Nations Member States to eradicate all forms of poverty, end exclusion and discrimination, and reduce inequalities and vulnerabilities that leave people behind, helping to build shared prosperity. LRGs and other key urban actors must ensure this principle is embedded in all SDG localization efforts.

Collaborative governance is also key to establish shared SDG priorities across stakeholders in which multi-level governance and inclusive multi-stakeholder mechanisms are integrated in local governments. The mobilization of LRGs and their engagement with national governments fosters greater dialogue on shared SDG priorities. Multi-level governance increases the cohesion and alignment of sectoral priorities across governmental tiers. Local governments, specifically, are positioned to actively promote inter-municipal cooperation to help curate SDG focused plans at the territorial level, working in partnership with regional governments to ensure integrated urban development. This in turn can enhance cooperation in service and infrastructure delivery, and increase capacity through

5 Xiaoshuang, S.. To Ensure a Successful "World Cities Day" and Help Shanghai Become an Excellent Global City [J]. Public Diplomacy Quarterly, 2017.

enabling a wider pooling of resources. In addition, both formal and informal multi-stakeholder mechanisms help to ensure the participation of CSOs, the private sector, academia and research institutions, and community-based organizations promoting ownership and co-responsibility across stakeholders in the SDG localization process. These mechanisms are important to maximize inclusivity and must be accessible to all sectors of society facilitating transparency and balance to ensure equal contribution from all individuals, and therefore a more representative and accountable decision-making process. LRGs must lead the way in promoting these multi-stakeholder approaches, acknowledging and respecting the independence of non-governmental actors. The creation of SDG working groups or task forces have shown to better connect local governmental departments with local/regional government bodies, mobilizing interest and commitment across key departments and entities.

Capacity building and the mobilization of resources is key for the effective roll out of strategic action. Regarding financial capital, local budgets must be aligned to the priorities laid out in the municipality, and municipal governments must allocate appropriate budgets to deploy interventions through carefully managed financial implementation strategies. The creation of new partnerships such as those with the private sector, academia and communities, can also help generate resources. Additional finance channels such as fundraising and donations should also be considered where appropriate whilst collaboration between different levels of governments (inter-municipal cooperation) can help to gain additional resources, leveraging the cost savings of economies of scale.

It is important to note that where SDG implementation requires the necessary infrastructure, human resources, technology and potential to innovate, capacity building for effective and proactive leadership is vital for municipalities and institutions. Organizations and institutions can work to enhance their managerial skills to more effectively leverage available resources such as participatory budgeting, tax management and public procurement whilst upgrading the skills of government staff. Building the endogenous capacities of LRGs is particularly pertinent to enhance policy assessment and development management, especially in lower-income nations, increasing their capability to tackle long-term development challenges whilst promoting a more proactive as opposed to reactive approach to urban development. Municipalities can also encourage peer-to-peer learning to help improve their political and technical decision-making in relation to SDG commitment and priorities advocating dynamic, problem-based learning and improving service delivery. Such processes will require development cooperation partners to provide resources, know-how and experiences, support political and fiscal decentralization and strengthen the institutional and operational capacities of LRGs.[6]

SDG Acceleration Toolkit

Serving as an online compendium of 100 useful tools, the SDG Acceleration Toolkit helps actors and stakeholders involved in global development processes to: analyse system interconnections across the SDGs; improve policy coherence; and identify risks and build resilience to ensure no one is left behind in the development agenda. First launched in 2017 by the United Nations Sustainable Development Group (UNSDG), the renewed version of the Toolkit created in 2021 has been developed to provide United Nations Country Teams, policy experts and governments with access to current tools to accelerate implementation of the 2030 Agenda. Critically, it provides methodologies and guidance to help analyse SDG interlinkages,

6 United Cities and Local Governments., United Nations Human Settlements Programme. URL: https://sustainabledevelopment.un.org/content/documents/commitments/818_11195_commitment_ROADMAP%20LOCALIZING%20SDGS.pdf (Accessed: 04/07/2022).

thus enabling stakeholders to capitalize on system leverage points and better identify and unlock barriers for strategizing, prioritizing and accelerating SDG progress, whilst also mainstreaming the Goals into development plans.

The Toolkit is structured into 3 main categories and 14 sub-categories:

Integration Tools
- Assessing SDG progress and alignment
- Acceleration – System Thinking and Dynamic Simulation Models
- Co-creation, Collaboration and Engagement
- Institution/Policy Coherence and Coordination for the SDGs
- Financing for the SDGs

Leave No One Behind Tools
- Assessing Who is Being Left Behind and Why
- Developing strategies and plans for leaving no one behind
- Identifying What Should be Done
- Realizing Meaningful Participation

Informed Development Tools
- Risk Assessment, Early Warning and Disaster Information Management
- Disaster Risk Reduction and Resilience
- Climate Change Adaptation and Environmental Risk Reduction
- Peace and Conflict Analysis and Humanitarian Response
- Epidemic and Pandemic Response and Recovery Planning

The tools also operate to offer immediate socio-economic response to the COVID-19 pandemic, ensuring effective recovery planning and implementation. The Toolkit is managed collectively by the United Nations Children's Fund (UNICEF) and UNDP under the auspices of the UNSDG Task Team on Integrated Policy Support.

Monitoring and reporting

To effectively track progress on SDG implementation, monitoring and reporting across the SDGs remains a vital part of the overall localization process. Not only does SDG monitoring allow cities and municipalities to better understand their progress across the Goals, but it also serves as a means to learn from experiences and guide policy moving forward.

Many LRGs currently lack the necessary mechanisms required to collect information at the local level, and local datasets are often inconsistent with national data collection systems. Respectively, promoting the involvement of LRGs in national monitoring is of great importance. LRGs should work with national governments in follow-ups and reviews on SDG implementation; a process that should be made transparent to ensure results hold LRGs and other involved stakeholders accountable, and to disseminate experiences and knowledge to other municipalities, regions and countries. The development of robust data collection systems at the municipal and regional level will be crucial to provide the adequate information required for SDG monitoring and reporting. Realization of the SDGs can only be so if high-quality data is available. Cooperation between different tiers of government as well as academia, the private sector and NGOs to exchange information and formulate comprehensive data sets on the SDGs, should be prioritized.

Voluntary Local Reviews

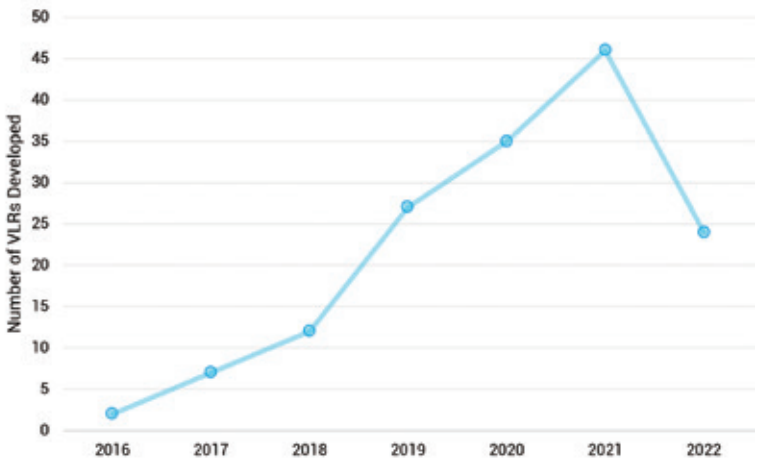
VLRs, a growing global movement in which municipalities voluntarily assess their progress on the SDGs and the 2030 Agenda, serve as a core tool in the monitoring process. Spearheaded by New York City in 2018, VLRs were inspired by Voluntary National Reviews (VNRs), a process by which countries report their progress in SDG achievements to the United Nations as part of the official follow-up and review process. VLRs enable cities to present a holistic and coherent portrait of their development progress on the 2030 Agenda and provide a powerful storytelling tool to link their local strategies with global agendas. Given that the SDGs focus on measuring specific outcomes, VLRs enhance evidence-based decision-

making, utilizing data to identify gaps and mobilize new policies, partnerships and resources. As a common frame of reference for the SDGs, VLRs also enable counterpart cities around the world to learn and exchange ideas, making them powerful agents for the localization of the Goals.

As a delivery mechanism in the process of SDG implementation, VLRs provide the grounds for municipalities to assess their progress on individual SDG targets enhancing policy coherence, strategic planning and multi-level coordination. They enable municipalities to identity their individual challenges and opportunities, and thus formulate targeted policy and urban interventions. To achieve this, the success of VLRs ultimately hinges on the availability of data: the production and collection of disaggregated, high-quality local data allows for the development of granular datasets and thus more informed reporting. Prioritizing the obtainment of gender disaggregated data – as well as other marginalized groups, plus age, intra-urban location and other similar typologies will be particularly pertinent considering the leave no one behind principle. Cities and urban actors must therefore realize data as a pivotal tool for prosperous and informed urban development. Where local data availability is a major barrier to VLRs development in many regions of the world, it is imperative that local governments promote innovative approaches to data collection moving forward, targeting resources in this area. It is also important to mention that where formal SDG indicator methodologies are often rigid and in some instances lacking, municipalities should ensure VLRs allow for flexibility in reporting using their own contextualized or adjusted methodologies where appropriate.

In cooperation with UCLG, UN-Habitat has worked to support the development of VLRs and Voluntary Subnational Reviews (VSRs) through the organization of VLR-VSR day. Aimed to connect global partners to reflect, discuss developments and facilitate mutual learning on these tools, VLR-VSR day took place from 14 ~ 16 July 2021 under the framework of the local government agenda at the High-Level Political Forum. With over 400 participants across the 5 sessions on sub-national reporting, results fed directly into WUF12 in 2022, helping to increase traction on VLRs and VSRs for reporting.

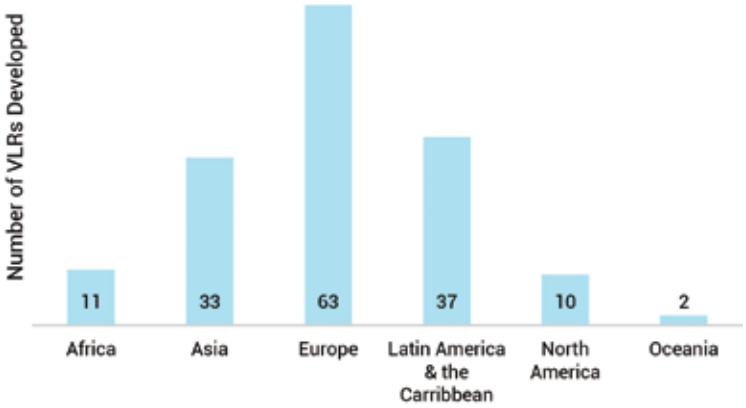
There has been a rapidly growing emergence in SDG monitoring and reporting via VLRs and VSRs among LRGs whereby the total number of VLRs has tripled over the past two years (see Figure 7.3). As of July 2022, over 150 VLRs had been developed globally of which over 125 were published.[7] An increasing number



Source: United Nations Human Settlements Programme (2022)

Figure 7.3 Frequency of VLRs developed from 2016 to June 2022
(Note that 2022 yields a lower number as the calculation does not exceed June)

7 United Nations Human Settlements Programme (2022).



Source: United Nations Human Settlements Programme (2022)

Figure 7.4 The number of VLRs developed by region (data as of July, 2022)

of cities and territories are committed to the production of VLRs annually as shown in Figure 7.4.

Global Programmes, Platforms and Networks on SDG Localization

Serving as tools for LRGs and other urban actors to build capacities and advance the SDG localization process, cities and municipalities are afforded a range of global cross-cutting programmes, platforms and networks on SDG localization. This section outlines some of the most notable resources that can help support cities to accelerate progress on the 2030 Agenda.

The Local2030 Coalition

The Local2030 Coalition was officially launched on 20 September 2021 during the SDG Moment at the seventy-sixth session of the United Nations General Assembly. The Coalition serves as a platform for the convergence of networks of LRGs and LRGAs, national governments, businesses, community-based organizations and other local actors as well as the United Nations system. The platform seeks to foster collaboration, incubate innovation, share solutions and implement strategies that advance the SDGs by providing a space to share tools and approaches to mobilize, engage and empower local stakeholders to advance the SDGs across all parts of the world. Within the United Nations system, the Local2030 Coalition strengthens coordination between United Nations agencies, and expands and deepens their partnership with local actors to effectively advance the SDGs.

The Local2030 Coalition is rooted in a comprehensive territorial approach to sustainable development in line with the principles of the 2030 Agenda and the New Urban Agenda; leveraging them as guiding frameworks to advance the SDG localization process and thus, sustainable development.

By leveraging and building upon the United Nations System and other stakeholders, the Coalition aims to:

- Create opportunities for representatives of local government city networks and other local actors to work effectively with United Nations entities to advance the SDGs
- Provide spaces for more local participation at regional and global stages related to SDG implementation
- Support the efforts of United Nations Country Teams and United Nations Resident Coordinators

to work at the local level with local actors, and to promote joint programming and initiatives that leverage United Nations assets

- Develop strategies to facilitate more access to SDG financing by local actors

Launched at the end of 2021, a global baseline study on SDG localization pinpointed significant gaps in enabling local actors to advance the 2030 Agenda, helping to define the work of the Local2030 Coalition, clustered into three distinct areas:

- Advocating for concrete engagement and bottom-up and inclusive processes to apply the 2030 Agenda as a roadmap to overcome the present COVID-19 pandemic and its subsequent effects

- Building and nurturing a support platform for local SDG implementation to leverage existing and new initiatives, alliances and solutions for policy alignment and planning, while cultivating an enabling environment for all actors to work towards obtaining funding for the SDGs

- Supporting efforts by a diverse range of local actors, including civil society actors on the frontlines, to monitor and report on SDG implementation, and exchange knowledge and perspectives

Governance of the Local2030 Coalition

The Local2030 Coalition is governed by a steering committee which makes key strategic decisions and ensures effective governance oversight. The committee has a maximum of seven members, comprising two co-chairs and five designated focal points. Committee members represent different constituencies namely LRGs, LRGAs and networks, Member States, CSOs and the private sector, and hence brings diverse perspectives to the work of the Local2030 Coalition on how to implement global agendas and achieve sustainable development at the local level. The Local2030 Coalition is co-chaired by principals from two United Nations agencies: a permanent co-chair tasked with leading its Secretariat; and a two-year rotational chair. The rotation of the chair is intended to diversify the leadership of the Coalition across different parts of the United Nations and promote a whole-of-system approach. After a consultation process to define the strategic orientation of Local2030 held in 2021 by the Executive Office of the Secretary-General under the guidance of the United Nations Deputy Secretary-General, UN-Habitat was appointed as permanent chair and UNDP was invited to be the first rotational chair for 2022—2023, followed by the Food and Agriculture Organization.

In addition, the Local2030 Coalition Secretariat ensures the active engagement of United Nations entities that are not members of the Steering Committee through the United Nations Directors group. The United Nations Directors group was established in 2021 and serves as an advisory body for the Local2030 Coalition. Comprised of director-level members of United Nations agencies, offices, funds and programmes, the group meets regularly to provide strategic direction and inputs for the consideration of the steering committee. The Coalition's activities are undertaken in collaboration with several partner institutions and governments at national, subnational and local levels, working on SDG localization.

G20 Platform on SDG Localization and Intermediary Cities

Endorsed by the G20 under the Italian Presidency, the G20 Platform on SDG Localization and Intermediary Cities (G20 PLIC) will function as an open and collaborative space, bringing together G20 members and other interested parties for peer-to-peer learning, capacity and consensus building, and knowledge sharing to promote effective approaches to SDG localization. Crucially, it will facilitate regular policy dialogue among key stakeholders from the G20 and developing countries, international organizations, SNGs, mayors and their networks.

With untapped potential to realize the SDGs, the platform will strengthen the capacity and advance the role of intermediary cities in contributing to regional and national development efforts. Formed through understanding the importance of adopting territorial approaches for the design and implementation of multilevel governance systems, policy and dialogue that advances SDG localization, the platform will also help intermediary cities contribute to SDG achievements in their surrounding rural areas and strengthen urban-rural linkages.

In cooperation with the G20 development working group, UN-Habitat as well as the Organization for Economic Cooperation and Development provide technical assistance and co-host the G20 PLIC under their respective mandates, with close collaboration with UCLG.

SDG Cities

The SDG Cities Global Initiative is a response to the need for accelerated action on the local implementation of the SDGs during this Decade of Action. It centres on the ambitious goal of supporting over 1,000 cities to accelerate their achievement of the SDGs and the impact this will have on around 1 billion lives. The initiative recognizes and incentivizes exceptional achievement of cities through SDG Cities Certification.

The initiative adheres to a four-tracked sequence: ① Data collection and analysis; ② Strategic planning; ③ The strengthening of local institutions; and ④ The financing and implementation of high impact projects. Ultimately, the programme bolsters local economic opportunities while improving environmental sustainability and reducing social inequality.

The initiative aims to achieve scale by providing cities with: ① An online bank of tools for data collection and analysis and institutional capacity assessments and training; ② Access to a Cities Investment Facility that prepares projects for investment and matchmakes them to sources of finance; and ③ Technical support hubs that backstop participating cities at each stage of the SDG Cities cycle. It mobilizes the global initiative through national multi-city programmes supported by national technical hubs and through global implementation windows. Global windows currently being mobilized include Women-Led Cities supported by women-led businesses and philanthropies, Capital Cities Initiative, Youth 2030 Cities, City Networks (Commonwealth and Francophone networks planned) and faith communities. To reach this level, SDG Cities will establish partnerships at national, regional and global levels with United Nations agencies, development banks, the private sector, civil society, academia and city networks.

The SDG Cities value chain

The SDG Cities initiative supports the full process from the identification of city priorities to ensuring their realization through the following steps to form a comprehensive SDG value chain, as shown in Figure 7.5.

Step 1: Onboarding

Cities are onboarded to the SDG Cities programme either as part of a national grouping of cities, through a city network to which they belong or individually. The city leader and heads of local institutions commit to the requirements of the programme which include establishing a baseline assessment; undertaking an inclusive participatory planning process to determine 2030 SDG priorities; strengthening capacities of local institutions; and channeling investment to ensure 2030 SDG priorities are met.

The SDG Cities Silver Certification is provided on evidence of the city's commitment to the requirements of the programme, including stocktaking of available strategies and data.

Step 2: Baseline assessment

A SDG Cities baseline assessment is undertaken by the participating city government in line with the global urban monitoring framework (UMF) which incorporates indicators derived from the 2030 Agenda

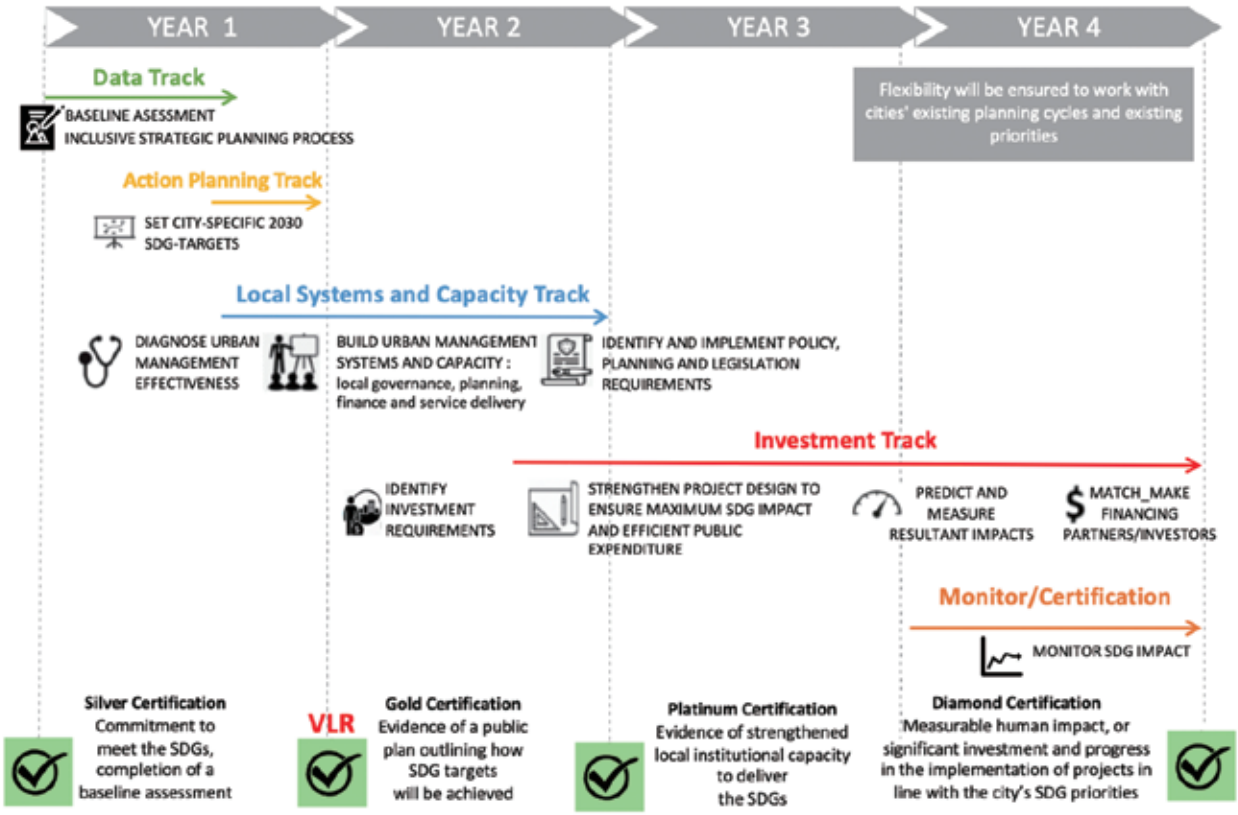


Figure 7.5 Schematic framework of the SDG Cities cycle and programme components

for Sustainable Development, the Paris Agreement and Sendai Framework for Disaster Risk Reduction 2015—2030. Cities are encouraged to utilize statistical data and spatial data in order to better understand how different parts of the city perform on these agendas and to identify areas of the city most in need of attention. Cities are provided with UMF metadata, spatial data, and analytical tools and related training to undertake their baseline assessment.

Step 3: Strategic planning

The baseline assessment feeds into a participatory visioning and strategic planning process where the city engages stakeholders – including women, youth, elderly, disabled, private sector, civil society and academia – in situation analysis, visioning, objective setting and strategic plan development. This process can be used to generate VLRs which take stock of the city's sustainable development performance and ultimately results in a City Development Strategy which integrates local and national development priorities and outlines a set of interlinked, prioritized interventions to achieve them in areas of plans and regulations, programmes and investments.

The SDG Cities Gold Certification is awarded on evidence of an inclusive, data driven, planning process and a resulting plan that is realistic and demonstrates a tangible, achievable set of actions that accelerate the realization of SDG priorities.

Step 4: Strengthening local institutions

The New Urban Agenda identifies the need for cities to have effective inclusive governance, planning, revenue and service delivery systems in order to be fit-for-purpose to deliver sustainable development. Local institutions serving participating cities are provided with a set of self-diagnostic tools and resulting assessments identify key capacity development priorities for each. These institutions are then supported with capacity development resources, training and on-the-job assistance. Where possible, national and global networks of participating cities are supported to form groups of institutions with similar

capacity development priorities that are jointly trained and can continue to share experience.

Step 5: Technical assistance
Local plans and updated regulations may be required in line with the city development strategies. National technical hubs linked with relevant academic partners can provide assistance and draw in external expertise as needed.

The SDG Cities Platinum Certification is given on evidence of strengthened institutional capacities in line with recommendations of institutional capacities diagnostic assessments.

Step 6: Impact initiatives
A series of high impact SDG projects derived from the City Development Strategy is identified by the city leadership through an inclusive, participatory approach. Support is provided for the assessment and optimization of SDG impact using UN-Habitat's SDG Project Assessment Tool – a user-friendly, digital instrument that assesses and guides the design of urban projects to ensure their SDG impact. Pipeline projects are supported to reach sources of investment through the Cities Investment Facility described below.

Step 7: Monitoring
The UMF tools mentioned above are further deployed by participating cities to monitor progress against their defined strategic plans for 2030, enabling them to continue to produce VLRs to document progress.

The SDG Cities Diamond Certification is awarded on evidence of human impact against milestones defined in the Strategic Plan.

The knowledge, experiences, lessons learnt and tools generated through the SDG Cities Global Initiative are disseminated at different experience sharing platforms including the SDG Cities Global Conference which has been hosted by the city of Shanghai, WUF and at regional events. This enables cities with similar contexts and development profiles to cultivate communities of practice by harvesting knowledge and data, which then allows UN-Habitat to develop targeted normative advice to specific clusters of cities whilst also increasing the overall participation of cities in the SDG Cities programme.

Support services

A range of additional systems work in conjunction with the SDG Cities initiative to help reinforce the SDG urban value chain:

(1) UN-Habitat's Suite of Digital Tools: participating cities are afforded access to digital tools to assist capacity building, including governance assessment, planning systems assessment, rapid own source revenue analysis, mobility assessment, waste management assessment and water utilities assessment;

(2) National Technical Assistance Hubs: UN-Habitat's country-level staff and staff of other relevant United Nations agencies work with existing national institutions, academic institutions, think tanks, training institutions, local governments and associations to adapt tools to local conditions and provide support to participating cities;

(3) Local2030 Global Hubs: the Local2030 Coalition is calling for the establishment of Local2030 Hubs which will be global centres of excellence in key technical areas such as data, planning, finance and institutional development, and themes such as climate response, social inclusion, affordable housing and circular economy. These will continue to develop and adapt tools to a range of contexts, and provide know-how and technical support to national technical hubs;

(4) The Cities Investment Facility jointly implemented by UN-Habitat and UNCDF provides the following:

- Cities Investment Portal where projects in need of investment are showcased to a global community of investors committed to SDGs
- Cities Investment Advisory Platform which supports the financial preparation of projects, making them investment ready
- Cities Investment Vehicles that broker investment partnerships for project implementation

SDG localization learning modules

Developed between UCLG, UN-Habitat, UNDP-Art, Dipitació de Barcelona and with the support of the European Commission, a set of Training of Trainers (ToT) modules were created to accelerate knowledge surrounding the SDG localization process. As an invaluable learning tool, they seek to provide LRGs, as well as their associations and local actors, with practical guidelines on SDG implementation – training trainers, whilst helping to consolidate a UCLG learning community and identify focal points across UCLGs regional sections responsible for increasing the number of local trainers for SDG localization. The training consists of four core modules: ① Introduction; ② Territorial Planning and the SDGs; ③ Monitoring and Reporting; and ④ Decentralized Cooperation.

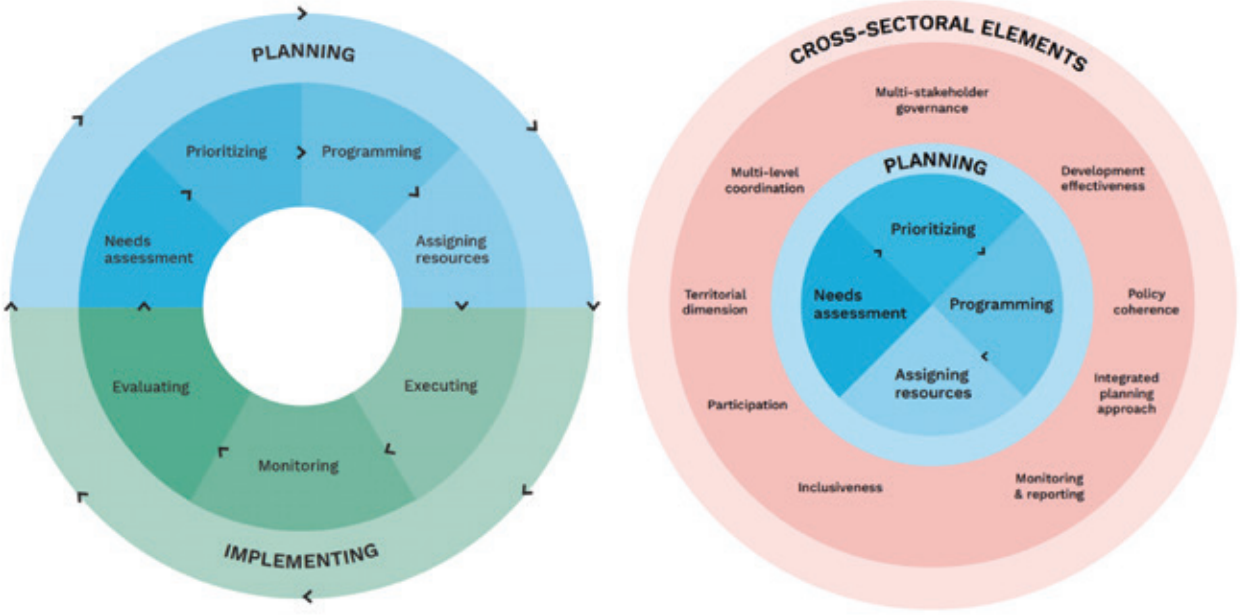
Module 1: Introduction highlights the necessity of LRG engagement with the SDGs to effectively implement the Goals, introducing participatory methodologies and open learning to help facilitators run workshops, spread knowledge and raise awareness on these issues among stakeholders. Broken down into three core focus areas, the module covers awareness-raising and advocacy strategies to align development plans with the SDGs, as well as monitoring and reporting, each area of which contains dedicated exercises designed for participants. The module reiterates the key role of LRGs and LRGAs in the SDG awareness-raising process, highlighting the importance of LRGs in embracing the Goals as their own policy framework, elaborating strong communication campaigns that extend to all corners of society, harnessing the potential of culture and education to make the SDGs engaging, and ensuring the adoption of a gender perspective throughout all phases of the implementation process. It also draws light to the need for LRGAs and networks to leverage their capacity and mobilize their members to enhance awareness-raising and global advocacy. Emphasis is placed on the importance of robust monitoring on the localization progress in which a technical breakdown of key steps is presented as well as the role of VLRs.

Module 2: Territorial Planning & the SDGs focuses on the alignment of public policies with the SDGs and provides guidance on how to integrate the SDGs from planning to local policy implementation. The module works on strategic, integral and non-sectoral plans and maintains a broad scope. Training is targeted predominantly at LRG members and associations (LRGs and LRGAs) but it is also suitable for private sector representatives, civil society and academia.[8] The module aims to provoke reflection on how the SDGs and key principles of the 2030 Agenda can be integrated into local development planning exercises, informing participants on the interconnections between the SDGs and local development planning. It promotes a partnership-based leave no one behind approach to development, focusing on accountability and multi-level governance.

The perspective presented within this module follows a cyclical process of public policy development as shown in Figure 7.6a. Within the cycle, the planning process consists of four stages: ① Needs assessment; ② Prioritization; ③ Programming; and ④ Resource assignment, each of which is dependent on the previous stage and requires continuous revision and adjustment. Subsequently, the implementation process is composed of three stages: ⑤ Execution; ⑥ Monitoring; and ⑦ Evaluation.

A number of key cross-sectoral elements are present throughout the four stages of the planning process as shown in Figure 7.6b. Firstly, it is important that planning processes perform needs assessments, taking into consideration the needs, priorities and potentialities of both the local stakeholders as well as the municipality itself. The participation of a wide range of stakeholders is essential to ensure inclusivity and to account for under-represented citizens and actors. In order to fully represent and empower cities and territories, a territorial approach should be promoted at the core of local planning processes. To accommodate these diverse needs and priorities, integrated planning approaches to SDG localization must be mainstreamed whilst ensuring policy coherence to fully integrate

8 UCLG., UN-Habitat., UNDP., Diputació Barcelona. URL: https://learning.uclg.org/module-2/ (2019) (Accessed: 28/06/2022).



(a) The public policy cycle

(b) Key cross-sectoral elements of the planning process

Source: UCLG., UN-Habitat., UNDP., and Diputació Barcelona. URL: https://learning.uclg.org/module-2/ (2019) (Accessed: 28/06/2022)

Figure 7.6 The public policy cycle and key cross-sectoral elements of the planning process

policies and programmes across social, environmental and economic dimensions and their respective governance systems. In addition, multi-stakeholder participation should be promoted to bind local actors together to participate in dialogue, decision making and implementation of solutions to common challenges, whilst multi-level articulation helps to coordinate different governmental tiers in line with their respective competencies, capacities and resources acknowledging development effectiveness namely the contribution to the territories' own development objectives. Finally, monitoring and reporting allows municipalities to track and assess the degree of achievement regarding the SDGs; simultaneously creating more transparency and accountability within local governance by providing comparable and accessible information of public policy implementation.

The module helps users to enhance a range of skills and improve understanding in regard to the SDGs at application level; namely:

- An enhanced understanding as to the importance of the 2030 Agenda and the crucial role that LRGs play
- The establishment of intra-administrative, multi-level and multi-stakeholder governance mechanisms for the implementation of the SDGs
- The assurance that the SDGs and their targets, as well as the SDG principles, are considered when planning and implementing new public policies in their organization
- The design and implementation of mechanisms for the monitoring, evaluation and reporting of the contribution to the SDGs
- The realization of the transparency and accountability principles through the presentation of results to the citizenship and to the international community, as well as to other LRGs success by sharing the organization's best practices in all aspects concerning the achievement of the 2030 Agenda

Module 3: Monitoring & Reporting builds upon the previous two training modules and presents guidance via tools, exercises and practical examples to assist LRGs and LRGAs in tracking and reporting on the

SDG localization progress. The guidelines serve as an invaluable tool to build the capacities of LRGAs and LRGs at political and technical levels. In regard to the former, it supports LRGAs in their engagement with VNR development and in their reporting on LRG engagement with the SDGs, and it supports LRGs in the SDG reporting process. The module contents include theoretical and case study content submitted by LRGAs and local governments via VNRs and VLRs, which provided the basis for the learning sessions presented.

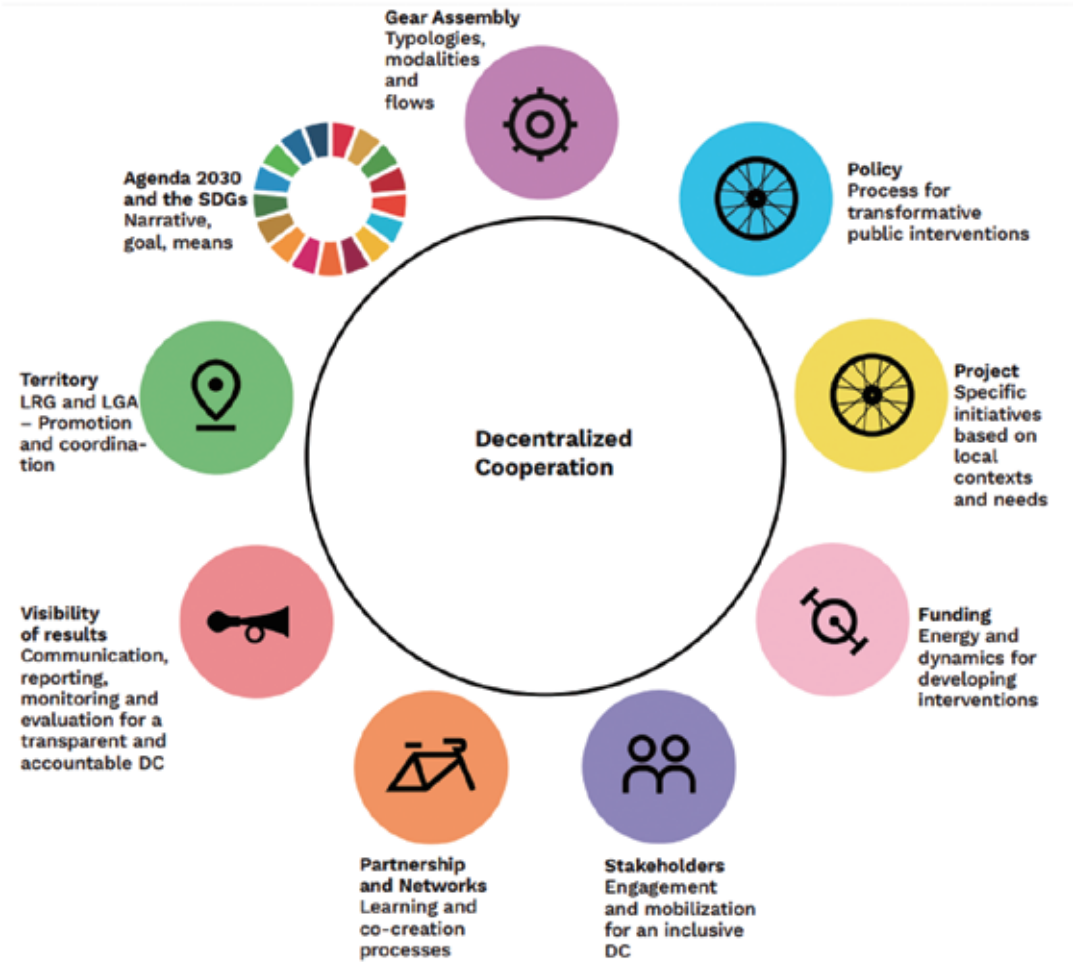
The module emphasizes the importance of SDG reporting as a means to increase transparency and accountability to both the municipality or territory, and citizens and stakeholders; and as a means to help strengthen coordination between independent agencies and different tiers of governments, promoting policy cohesion and more effective SDG implementation. It also draws light to the need for greater efforts to involve LRGs in VNR development and institutional mechanisms for coordination and follow up, as well as new institutional frameworks and improved spaces for collaborative dialogue between government levels. To promote ownership within LRGAs, a 'reporting roadmap' exercise is also laid out to help trainees understand LRGA participation as crucial to incorporating the local perspective in the 2030 Agenda.

In terms of information and data access, in order to contribute to VNRs from a local and regional perspective, and to ensure that this perspective is fully consistent with reality, LRGAs must collect data and information (including best practices and new policies) on LRG good practices and their contribution to achieving the SDGs. LRGAs can utilize different data collection methods and information. Most commonly, a survey is conducted for LRGs and local stakeholders with specific questions about the current status of SDG implementation at the local level. The information gathered through the survey makes it possible to identify LRGs committed to the new agenda. Five of them are worth focusing on: the main SDGs introduced and their objectives, top priorities, types of interventions (awareness-raising, adaptation, projects, etc.), best practices and allocated budgets. LRG participation in the reporting process should also help determine how the priorities identified by LRGs in their respective local development plans are recognized in the national strategies for implementing the SDGs. At the same time, it should help identify the main gaps between national SDG strategies and SDG needs, and in this way help develop advocacy strategies to gain more support.

Module 4: Decentralized Cooperation (DC) focuses on SDG localization and serves as a didactic guide and learning source that proposes a new cooperation policy and project format for cities, LRGs and LRGAs that acknowledges fundamental SDG principles. Designed, again, for LRGs and LRGAs, and additional actors involved in urban governance, the focus is directed to strategic, integrated, non-sectoral development plans at the local or regional level. Five key topics are covered including the importance of DC for the LRG global policy agenda, how DC works in practice and how it can be designed in line with the SDGs, how to mobilize multi-stakeholder territorial partnerships for DC and how to communicate, report, monitor and evaluate DC initiatives (see Figure 7.7).

Highlighting the roadmap from the Busan Partnership for Effective DC in 2011 to the establishment of the 2030 Agenda in 2015, the module highlights the symbiotic relationship and importance of both DC and the SDGs. Accordingly, it lays out the fundamental roles of DC as a driver of SDG localization, including its role in connecting stakeholders and promoting horizontality, raising local awareness, dialogue and knowledge on the SDGs, and promoting multi-level governance and policy transfer. It also informs users as to the different modalities of DC cooperation and offers methodologies in how to optimize DC to promote the Goals.

In consideration of direct DC practitioners, the module also presents guidelines on how best to implement cooperation projects, emphasizing the need for clear and effective policy, and highlights the costs and benefits as to adopting logical framework and/or participatory learning and action for change approaches. Lastly, users are informed as to how to leverage the communication reporting on monitoring and evaluation processes to advance development progress, stressing the need to establish dedicated strategies and frameworks across these four areas.



Source: UCLG., UN-Habitat., UNDP., and Diputació Barcelona. URL: https://learning.uclg.org/wp-content/uploads/2021/09/m4_en_web.pdf (2021) (Accessed: 24/06/2022)

Figure 7.7 The key components required for transformative Decentralized Cooperation for the SDGs

United Cities and Local Governments

Launched in May 2004, UCLG is an international body formed by the merger of the International Union of Local Authorities and the United Towns Organization with the World Association of Major Metropolises. UCLG was created to give local governments a united voice and to promote the organization's values, goals and interests through cooperation between local governments and the international community. As a global network of cities and local, regional and metropolitan governments and their associations, it plays an integral role in magnifying the voices of LRGs and in promoting inclusive development for communities in which the SDGs become a reality. In particular, UCLG works to strengthen the member network, enhance political participation, develop new action-orientated tools for SDG delivery, replenish partnerships among a range of actors and ensure shared ownership across the membership. UCLG supports LRGs in progressing the 2030 Agenda through targeted policy and advocacy work, and learning as well as guidance throughout SDG implementation, and monitoring and reporting processes.

UCLG possesses a variety of tools to support cities in SDG implementation. Firstly, as a community of practitioners, experts and policy makers, UCLG's

Learning Forum operates as an e-space for discussion and exchange, aiming to support the advancement of UCLG policy priorities by strengthening local capacities and building on the experience, knowledge, creativity and commitment of the membership. The forum contains the ToT modules on SDG localization as previously highlighted, and promotes peer learning events and good practice analysis, which serve as valuable tools for cities and regions. In addition, UCLGs Global Observatory on Local Democracy and Decentralization supports the localization process through its commitment to supporting LRGs in monitoring and reporting on the implementation of the 2030 Agenda, and aspires to contribute to SDG achievements and empower LRGs in their pursuit in line with the overarching strategy of UCLG.

As a coordination and consultation mechanism, the GTF connects the World Assembly of LRGs to partake in joint advocacy work on international policy processes. Established in 2013, it channels the perspectives of LRGs to the SDGs, the climate change agenda and the New Urban Agenda, convening elected local and regional leaders from around the world in the World Assembly of LRGs (see Table 7.2). Following Habitat-Ⅲ, the GTF enjoys a renewed mandate to cooperate on recommendations in key policy areas and to facilitate follow-ups on the implementation of major global agendas at the local level, creating secure spaces of dialogue among government spheres for the constituency of LRGs. The GTF also serves as a hub for policy exchange in which LRG networks can collaborate on priority areas identified by the members.

Table 7.2 Member networks and partners of the Global Taskforce

Member networks of the Global Taskforce	Partners of the Global Taskforce
UCLG	UN-Habitat
ICLEI (Local Governments for Sustainability)	UNICEF
Resilient Cities Network	UNDP
Mayors Migration Council	Cities Alliance
International Association of Francophone Mayors	United Nations Educational, Scientific and Cultural Organization
Arab Towns Initiative	Decentralization and Local Government
Commonwealth Local Government Forum	Sustainable Development Solutions Network
MERCOCIUDADES (Network of Cities of Mercosur)	European Commission
Latin American Federation of Cities, Municipalities and Associations of Local Governments	World Urban Campaign
Regions4	Ministry of Foreign Affairs, France
Metropolis (Metropolitan section of UCLG)	Habitat for Humanity
UCLG Regions (Forum of regions of UCLG)	High Level Panel on the Post 2015 Development Agenda
UCLG-NORAM (North American section of UCLG)	Huairou Commission
UCLG-ASPAC (Asia Pacific section of UCLG)	International Labour Organization
UCLG-EURASIA (Eurasia section of UCLG)	Millennium Campaign
UCLG-MEWA (Middle East and West Asia section of UCLG)	Engie
UCLGA (UCLG Africa)	One UN Secretariat

(Continue)

Member networks of the Global Taskforce	Partners of the Global Taskforce
CEMR-CCRE (Council of European Municipalities and Regions)	Slum Dwellers International
Cités Unies France	SUEZ Group
ORU FOGAR (United Regions Organization)	United Nations Capital Development Fund
FMDV – Global fund for cities development	Climate Change
PLATFORMA (The European voice of local and regional authorities for development)	Global Covenant of Mayors for Climate & Energy
C40 – Climate Leadership Group	
Union of Ibero-American Capital Cities	
Alliance of Cities and Local Governments from Europe and Latin America	
Assembly of European Regions	
Global Parliament of Mayors	

Source: Global Taskforce of Local and Regional Governments. URL: https://www.global-taskforce.org/ (Accessed: 30/06/2022).

United Nations Advisory Committee of Local Authorities

As a dedicated advisory body to the United Nations system, UNACLA functions as a key committee which helps strengthen dialogue among local governments globally. Focused on the implementation of the Habitat Agenda, UNACLA gathers and conveys the perspective and thoughts of LRGs to the United Nations system itself, drawing light to their crucial role in achieving sustainable development. More specifically, UNACLA supports the dissemination of key messages to Member States and additional partners via advocacy and guidance, advising the Executive Director of UN-Habitat from the lens of local governments on all matters surrounding the implementation of the Habitat Agenda and the SDGs.

UNACLA prompts dialogue between local and national governments on the SDGs and seeks to create an enabling environment for all governmental levels to advance progress. It also facilitates the local dimension of development in the global agenda; promoting the new approach to sustainable urban development as instigated by the SDGs, and simultaneously brings the United Nations system closer to LRGs.

Concluding Remarks

This chapter has reiterated the critical importance of LRGs as we move closer to 2030, breaking down the three distinct phases of the SDG localization process. Firstly, it clarifies the need for LRGs and LRGAs and their networks to actively enhance the visibility of the SDGs through awareness-raising and advocacy work, ensuring a participatory approach to implementation and promoting ownership of the Goals among all

members of society. Secondly, it has noted that for successful SDG implementation, LRGs must establish localized SDG priorities which address contextually relevant development gaps for the city or territory, integrating and aligning these priorities into local development plans to facilitate local development in harmony with the SDGs. Thirdly, it has demonstrated the importance of monitoring and reporting when directly tied to policy formulation and planning; providing cities and territories with the opportunity to track their progress on individual SDGs, and curate responsive policy and strategy. The chapter has also highlighted the role and value of global initiatives and networks that are available to support cities and LRGs in the localization process. As an innovative global platform and network, the Local2030 Coalition helps to support SDG delivery on the ground whilst the SDG Cities initiative enables collaborative action to accelerate sustainable urbanization in line with the SDGs. In addition, the SDG Localization learning modules act as an important point of reference to build knowledge on the process among key urban actors, whilst the UCLG and GTF network and UNACLA remain integral to supporting and maximizing the outreach and impact of LRGs in their pursuit of the 2030 Agenda.

As demonstrated throughout this Manual, SDG localization is an essential and fundamental process for cities and urban leaders as we move towards 2030. Whilst positive strides have been made, a significant amount of work remains for the world to achieve the SDGs without compromise, and cities must promote bold and innovative action to instigate truly meaningful change. Since the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil in June 1992, LRGs and civil society have gained a wealth of experience in how to put the Rio agenda into practice at the local level. The roll out of over 6,000 local Agenda 21 initiatives across 113 countries have demonstrated, in their own way, how to raise awareness, advocate and practically implement this within their communities. However, where some national legal and political frameworks still fall short in recognizing the importance of cities and LRGs in achieving the SDGs, this is a concern, reaffirming the need for national and international advocacy on behalf of LRGs as an utmost priority.

What is made more evident is the need for proactivity and strategy among LRGs in the SDG localization process specifically in regard to their potential to drive action through bottom-up, participatory and inclusive means, utilizing the Goals as a comprehensive framework for local development policy. It has therefore been made apparent that whilst the SDGs are global in nature, their achievement ultimately depends on our ability to achieve them in our cities and regions. LRGs should not only be seen as mere implementers of the agenda but as decision-makers and catalysts for change at the level of government best placed to link global goals with local communities. Whilst SDG 11 functions as the pioneering Goal for cities and human settlements, it is understood that 65 percent of the SDG targets are directly dependent on local governments. It is therefore imperative that urban actors and decision-makers understand the complex web of interlinkages, synergies and trade-offs between SDG targets across all 17 of the Goals, avoiding traditional siloed development and instead approaching the framework through a holistic means.

Most importantly, through the case studies elaborated within this Manual, cities can draw hope and inspiration as to their power to counteract and reverse the challenges they face through rapid urban growth. Through innovation, cooperation and a clear vision they have the ability to realize the SDGs and create harmonious hubs of existence that afford everyone access to opportunities, prosperity and a better life.

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