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# Global Openness & Inclusive Innovation

Research Reports on 15 Shortlisted Cities from the Fourth Guangzhou International Award for Urban Innovation



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## PREFACE

This report was prepared just as the COVID-19 pandemic emerged. The measures taken to contain and mitigate the spread of the virus revealed in many countries and cities just how fragile our societies and systems are. Far from being resilient, entire health systems and related supply chains were taxed to breaking point. In far too many cases it was the most vulnerable members of society who suffered the most and continue to suffer disproportionately from the consequences of the virus. Distance learning or working from home is simply out of the reach of many low-income families. Children from these families will very likely miss an entire school year. In many cases their parents are the most affected when it comes to losing their source of livelihood. In many regions, the benefits of long and hard years of recovery from the 2008 financial crisis were brought back to square one in a matter of months.

What have we learned? First, we still have a long way to go in building robust and resilient cities and societies. There are many aspects of our cities and regions that need to be revisited. Second, the social, economic and the psychological impact of the pandemic has elevated the importance and urgency of the Sustainable Development Goals and the New Urban Agenda. We have learned that we can no longer pursue urban development along sectoral lines. Everything is connected and our cities are only as resilient as the weakest link in the complex chain of infrastructure, facilities and services. The pandemic has shown that the front line, those that risk the most are, for the most part, low wage earners. It has also shown that neglecting the “bottom” segment imperils the whole society. We have learned that we cannot leave anyone behind when it comes to containment, mitigation and care. Let us remember these important lessons as we engage in recovery.

The 15 case studies presented in this report all took place before the emergence of COVID-19. They are nonetheless very relevant. They show us that there are cities and regions that have been aware that they cannot leave anyone behind; that they need to combine efforts in different sectors to be able not only to achieve specific goals or targets but to ensure that those efforts have a lasting impact and are carried out effectively as well as efficiently – in short – sustainably.

Each of the 15 cases addresses simultaneously several of the SDGs and their targets. Taken together they address all of the SDGs and the principles of the New Urban Agenda. Fifteen cities is a very small sample but these fifteen cities are showing us what can be done.

It is our hope that these case studies will help inspire and motivate other cities and regions to continuously learn from each other in the pursuit of more sustainable development and in the true spirit of international cooperation.

Nicholas You  
Executive Director of Guangzhou Institute for Urban Innovation

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## CITIES ARE BORN FOR THE SELF-COMPLETENESS OF HUMANS

Bao Yajun<sup>1</sup>

In the modern world, more than half the population lives in cities, and more people will move to cities to work and live. As the largest developing country, China's rapid urbanization is not only highly valued by the Party and the government but also attracts global attention. American economist Joseph Stiglitz believes that in the 21 century, two major events are affecting humans, namely, the new technological revolution led by the United States, and the rapid urbanization of China. By the end of 2018, China's urbanization rate, measured by permanent residents, has reached 59.58%. Many scholars predict that, against the background of economic transition, China's urbanization will stay at the level of at least 10 million people per year. A large amount of population coming to cities has promoted the prosperity and development of such cities, but it has also brought about many problems, such as traffic congestion, air pollution, and uneven and strained public services. Even in highly-urbanized and developed western countries, cities also face new or old problems, like the integration of immigrants and urban regeneration.

However, in contrast to the rapid urbanization, urban studies are relatively weak in China. In the opinion of Zheng Yefu, a famous Chinese socialist, urban studies around the world are carried out separately in architecture, geography, economics, urban history and sociology. However, in China, architecture dominates while other disciplines are highly inadequate in urban studies. This is an objective judgment. Fortunately, in recent years, a number of research institutes concerned with urban development and governance have emerged, for example, Peking University, Shenzhen University, Shanghai Jiao Tong University and the University of Sanya have established institutes of urban governance, and Hangzhou City established Hangzhou International Urbanology

Research Center. A number of scholars engaged in political science and public administration studies have also started to do urban studies. PKU Institute of Urban Governance was established under the initiative of Yu Keping, a famous political scholar. This is inevitable in historical development. On one hand, political science and public administration study should combine with practical needs to be further nourished; on the other hand, the progress of urbanization itself has created special public governance needs, and political science and public administration study have unique disciplinary advantages in providing research framework or analytical horizon. Political science and public administration study are directly concerned with the public life of humans, and a city is a naturally public field.

"Man is by nature a political animal", Aristotle claimed, and scholars have been probing into the true meaning of this claim. Considering the city-state life at that time, there is an understanding that "political" here also refers to the city-state, which can be extended to the idea that humans are born to live in cities. In many classics of political theory, the people or citizens, at the very beginning, refer to people living in cities, or some people in cities except, for example, slaves. However, people living in the countryside and high mountains are the code word for barbarism and backwardness. Culture has developed in cities. Museums, places of worship and exchanges activities emerge, through which people are able to purify their souls. But it is not the only reason leading to the difference between citizens and barbarians. What is more important is that cities entitle citizens a new identity and some rights, and that unique ruling or management systems and skills are developed among corresponding groups. All these can better reflect the significance of civilization. No matter which factors directly promote

<sup>[1]</sup> Bao Yajun, vice dean and secretary-general of PKU Institute of Urban Governance and researcher of PKU Research Center for Chinese Politics

the development of cities around the world because of the development of kingship, religion or market, there is no doubt that cities are a place to transform and improve human beings. Lewis Mumford, a famous American theoretician of cities, pointed out after examining the origin, evolution and prospect of cities in the world that human beings are improving and enriching themselves by virtue of cities as the ladder and that the renewal of human civilization is always accompanied by the renewal of cities as carriers and incubators of civilization. In fact, the reason why human beings need cities and create cities must be traced back to the needs of human nature. Most western modern enlightenment thinkers pointed out that people sometimes might be self-interested. But out of rationality, they need to protect themselves and need the strength of groups, so connections become a must. Therefore, places providing and promoting such chances of establishing connections develop into cities and be used to meet people's common needs. Thus publicness is a natural attribute of cities from the perspective of the emergence and development of cities. Today, we regard cities more as the production and living space of the new economic society and the living organization in which human beings live in harmony with nature. The ideas are right, but not profound enough. Some historians, such as Jerry Bentley and Herbert Ziegler of the United States, have long ago pointed out that the city is a place to deal with public affairs. For future generations, it should become one of the intellectual thoughts that can be drawn from history.

In view of the important value of publicness to human civilization, the public attribute of the city must be repeatedly emphasized. If the city is regarded as an organization of human beings, like that in any other organization, a glaring contradiction lies within the city. On the one hand, its public attribute requires democracy, participation and innovation based on the previous two. On the other hand, it also requires centralization under certain circumstances, thus creating conditions for large-scale collective actions and maintaining stability. Both aspects can win a bright future for the community. However, it is not easy to balance such internal relationship. Such a relation is influenced

by the region or country where a city is located and the governing political ideas of a specific historical stage, and the city may also play a role of catalytic agent in the natural differentiation of humans and rich-poor polarization in particular, further distorting urban solidarity, democracy and market, and intensifying disparity. In the history of human development, many cities flourished and grown and many others fell into oblivion. A city's prosperity makes people elated while its extinction is often heart-breaking. The extinction of a city is generally caused by natural disasters like earthquake, social factors like epidemics, and more often by war, civil strife and the diversion of economic and social life in a certain region. Behind these social factors, one can more or less spot the influences of urban management or governance mechanism and policy ideas.

Lewis Mumford argued that converting a city's power into form, energy into culture and biological reproduction into social creativity and advanced civilization requires institutional innovation and the effective control over the power and energy in humans' hand. The negative organizational systems associated with a city's growth such as kingship and hierarchy have been cleared away in many aspects, but there are still risks of their recurrence; the application of new technologies can facilitate a city's running but also reveals its worrisome or even horrifying aspects. British scholar Peter Hall, praised as a global authority in respect of world city studies, believed that the present time is an era in which humans' urban development is driven by cultural and technological innovation, and declared the arrival of a golden age for cities when new economic growth points manifest a city's great vitality while a more unfair world of cities is taking shape. U.S. master architect Henry S. Churchill has been extremely worried about today's distorted urban planning methods and procedures, which in fact stems from the stand in the interest of a select few rather than the masses. To address these issues so that cities can facilitate humans' self-improvement, it is imperative to restore the stand centering on the masses and make it a basis for making urban design, formulating public policies, and adjusting management or governance system. Returning to the masses is exactly returning to

cities' public attributes.

The concept of governance that wins great popular support around today's world is in essence to retrieve the public attributes of governing public affairs, which cannot come true unless a country or a government maintains a cooperative and interactive relationship with civil society and other social organizations of all kinds. During humans' pursuit of self-improvement, cities are successfully becoming the greatest invention of mankind. But to make cities live up to humans' best wishes as expected by Mr. Edward Glaeser, urban managers must firmly adhere to the principle of public attributes and cities' power holders, i.e. officers and the masses, must pull together to address specific issues one after another. Fortunately, human society has never lacked the motivation to move forward, and our cities are constantly making new innovations and creations. Groups of responsible officials and people are working hard for this purpose and have made real achievements. These achievements are the response to the problems of the times and also represent the solution of the times. For example, problems such as building a green city, promoting fairness, justice and inclusiveness of the city, and improving policy efficiency exist in different regions of the world to varying degrees. Since there are objective needs, many cities have conducted exploration practices targeting these problems.

The tenet of the Guangzhou International Award for Urban Innovation is to discover outstanding urban innovation projects from all over the world, so as to promote the exchanges and dissemination in respect of urban innovation achievements and further boost human civilization. The reasons behind the success in these excellent projects are especially worth summarizing. Let's take the informal residential area upgrading project conducted by the Durban Municipal Government in South Africa, one of the shortlisted outstanding projects in the 4th Guangzhou International Award for Urban Innovation, as an example. This project not only embodies gradual, participatory and procedural features, but also contains the characteristic of public-private cooperation. These characteristics directly reflect the spirit of urban governance, which should be the important reason why this project

was on the list of the award. However, we should also note the reason why the government values informal residential areas so much. Informal residential areas are often the places where poor people work or live, so the living environment there is usually relatively terrible. To upgrade and reconstruct such places is a reflection of a city's urbanization strategy, as well as the city's spirit and ethics. What should be pointed out in particular is that this project also embodies inclusiveness. Like other projects, it also needs to mobilize women, children and poor people to participate in urban governance, so the inherent spirits of inclusiveness embodied in the sharing of the convenience of the city are the same. Richard Florida believes that the contemporary urban crisis is extremely pressing. The division of classes in cities may lead to populism. Future cities should not only encourage innovative wealth creation, but also improve the quality of life and lifestyle for all people. Although these suggestions are reflections on the development process of cities in developed countries or metropolises, they are also suitable for the urbanization in the initial stage of developing countries.

In recent years, many famous Chinese urban researchers, including Wu Liangyong, Yu Kongjian and Wu Zhiqiang, are trying to popularize the understanding of cities and advance the enlightenment on urban civilization. Their efforts are indeed of great significance. Nevertheless, scholars engaging in politics, public management and other related disciplines are also an indispensable force in the cause of promoting enlightenment on urban civilization in the new era. Perhaps, the most valuable analysis of the projects in the Guangzhou International Award for Urban Innovation should be the one from the perspective of public governance and human political civilization. The 2015 Central City Work Conference clearly stated that China's cities should be people-centered. Its urban development and city governance should not only follow a road with Chinese characteristics, but also learn from the beneficial achievements of the world's urban civilizations. It's believed that the analysis report on these projects is beneficial to the urbanization in China.



# GLOBAL OPENNESS & INCLUSIVE INNOVATION

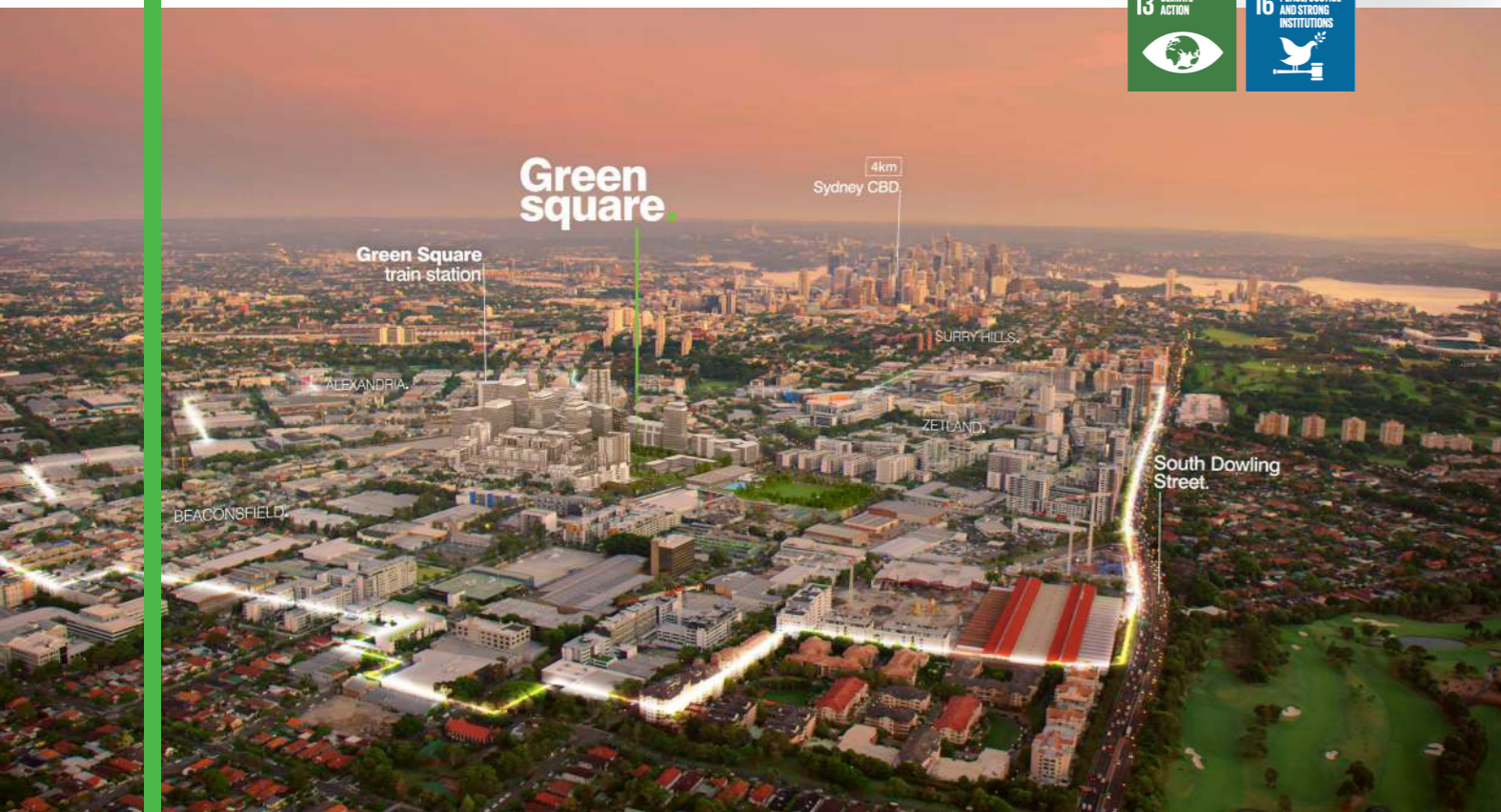
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 Sydney, Australia

# GREEN SQUARE

From a Rich Industrial Past to a Vibrant, Sustainable and Connected Modern Community



Sydney, located on the southeast coast of Australia, is the capital of New South Wales and the largest and most populous city in the country. The city has a population of 233,217 that is a growing at a rate of 4% per annum. It is also densely populated – with a surface area of 25.72 square kilometers and a density of 8,727 inhabitants per square kilometer. Sydney has been rated one of the most livable cities in the world by UN-Habitat for many consecutive years. One of its notable attributes is a GINI index of zero.

Green Square is one of the city's largest urban renewal initiatives, with a total investment of approximately AUD 8 billion. Through value capture schemes and levies, the private sector contributes 79% of total infrastructure costs. Of the remaining 21%, the City contributes 66% and 34% is

funded by federal and state governments.

The initiative is designed to combine housing, public spaces, commercial buildings, shopping malls and associated infrastructure. It enjoys a good location, 3.5 kilometers from downtown Sydney and 4.0 kilometers from the airport. Since the year 2000, the start of the initiative, 5,700 new residential dwellings have been built in

the area through urban renewal, attracting 11,000 new residents. By the planned completion in 2030, the area will have 40,000 more residents and 22,000 on-site jobs. Such large-scale urban renewal reflects many cutting-edge ideas and approaches in Australia and the world, which are worthy of in-depth study and analysis by urban scholars and practitioners.



Central to the 278 hectare Green Square urban renewal area will be a new, resilient, lively and unique centre – the residential, commercial and cultural heart of the Green Square community. The town centre will accommodate 6,800 residents and 8,600 workers. It will showcase world class urban design with sustainable infrastructure and community facilities including, a library, aquatic centre, parks, childcare centre and a creative hub. Infrastructure is similarly funded by a value capture scheme and capital allocations. The town centre is a City initiative in collaboration with private developers and state government. It is an ongoing activity showcasing innovation, sustainability and excellence in design and leadership.



## BACKGROUND

Green Square has been a key initiative of Sydney's regional and local planning since the mid-1990s. The city announced that to facilitate hosting of the 2000 Sydney Olympic Games, a direct rail transit line was planned from Sydney Airport to the central business district, with a station in Green Square. The scheme identified the strategic position of Green Square, between Sydney's central business district, Sydney Airport and Port Botany, facilitating regional construction and serving as a catalyst for Australia's first large-scale "brownfield" renewal.

In the 1970s, Sydney's economic structure underwent a major change, with traditional industries being relocated to less costly areas, such as the urban fringe and even overseas. Most of Sydney's new development projects are located in "green" areas on the edge of the city. Green Square was home to one of Sydney's and even Australia's key manufacturing bases. For more than 100 years from 1850 to 1960, it was a very busy factory area with the wool industry as its core. Green Square, as an old industrial area in the central city, is thus well suited to provide more affordable housing by taking advantage of currently underused infrastructure.

The Sydney municipal government hopes that the development of Green Square can meet all the requirements for a livable metropolis with a thriving city

center and main streets; a sense of community brought by markets, festivals and street life; sustainable means of transport that make it easy to walk or cycle; and an environmentally sustainable development model.

## IMPLEMENTATION PROCESS

Green Square was innovative when the idea was conceived because it was the first large-scale brownfield redevelopment in Sydney, with extensive land planning and development. In addition, the large-scale use of "value capture" to build social and civil infrastructure and the use of special zoning model to fund basic infrastructure in the new town center are unprecedented. Many other aspects are also innovative, such as sustainability initiatives: formulating water recycling plan, designing streets with central depressions to capture and clean rainwater, and large-scale expansion of canopy coverage.

In the understanding of the Sustainable Development Goals, the planners emphasized both the "green" of technology and the "sustainability" of life. As a core component of the city's "Urban Development Framework", the Green Square Project's community center was planned as a

new commercial, retail and cultural hub. The center is a vibrant space for residents to live, work, shop dine out. It also hosts for a series of cultural events. The newly-built park within the area is also located in the community central zone, covering an area of 6,500 square meters. The park is connected to the community square, green infrastructure, historic sites, as well as the health and recreation central zone with the Royal South Sydney Hospital as the core. The park is called "Drying Green" in honor of the area's former primary function, which was drying wool for local wool factories.

The central position of the library in the community is one of the important features of Green Square. The planners placed the library and plaza at the heart of the community center, and the associated architectural design was created by the winner in an international competition among teams. As important public spaces, the library and plaza provide social gathering places not only for new residents in the community, but also for existing residents and those of the surrounding suburbs.

In terms of the strategic positioning of transportation, the community center of Green Square was planned to be the heart of the regional transportation network and to assume the function of a public trans-

portation hub in the south of Sydney. The transportation network of the community center acts as a node of the surrounding traffic corridors, and forms mutual support with the rail station of Green Square. In the site selection, the location of the community center was carefully considered, and the construction basically centered on the rail station and the regional traffic routes, so as to realize the organic unity between the traffic system and high-density development.

The Sydney municipal government is not responsible for public transport operations. However, in the absence of a clear national public transport strategy to meet the needs of a rapidly growing population, the municipal government has bought a strategic plot of land to ensure that corridors remain open for future use.

## PARTNERSHIPS

The City provides strategic leadership, at the nexus of the complex partnerships and agreements with many government agencies, private developers and other stakeholders, which are required for the successful renewal. These partnerships include:

- multiple planning agreements that include contracts for civil works delivered by private developers
- high level consultative and advisory committees and networks including state government and technical experts to oversee the macro elements of the renewal area and in some cases jointly deliver infrastructure
- informal partnerships with stakeholders, business and the community to consult and liaise on implementation and community building issues, and develop community relations programs.

## RESULTS

By 2018, the core area had been completed namely: a major community cultural center, a new library and a town hall plaza, improved community accessibility and connectivity. This has, created a healthy and active community environment, enabling people to socialize and find entertainment at their doorstep. Green

Square has set an example in adaptive reuse, facility integration, sustainable development and innovation in re-purposing of cultural heritage buildings. There is significant improvement in traffic flow: The passenger throughput at the Green Square Railway Station increased by more than 30% annually between 2014 and 2016. The area also has the highest proportion of commuters who cycle to and from work in the city.

The initiative has set an example for large-scale urban renewal, greatly enhancing Sydney's reputation as a daring forward-looking and responsible city. Green Square is a demonstration of the fact that high-density cities can transform into the healthiest, most environmentally and people friendly, most dynamic places with the least ecological footprint. The initiative also demonstrates the city's image as a great place to live and work, as well as an ideal tourism destination.

Green Square was planned as one of the first "low-carbon zones" in Sydney. New developments in the area are powered by a green energy system called "tri-generation". The system applies recycled water to non-drinking fields and automatically disposes waste. The system, powered primarily by natural gas, provides electricity, heat and cooling to the surrounding buildings. The system is twice as energy efficient as a coal-fired power system, reducing greenhouse gas emissions by more than 60%.

## CHALLENGES

1. The obstacles encountered were quite complex. Land ownership including infrastructure was highly fragmented and required a lot of negotiation with different owners. Transportation, flood discharge, and sewerage projects are costly to build and do not have the state government's involvement or funding.

2. Heavy pollution and flooding have impeded the development of many key sites. In 2009, the state government's development department formed a consortium to carry out renewal projects in the heart of the city center. In 2014, an agreement was signed to build a 2.5-kilometer trunk rainwater drainage system that has addressed flooding, which was a key ob-

stacle to reconstruction.

## HIGHLIGHTS

In terms of concept, planning and implementation, the Green Square regional center initiative is an innovative practice. It provided world-class sustainable infrastructure and spaces - implementing Australia's largest residential rainwater collection and treatment program and powering community buildings with low-carbon and renewable energy through the "private wire" program. Innovation is reflected not only in the whole renewal area of Green Square, but also in the excellent design and the use of sustainable development principles throughout. In particular:

- Renovation and reuse of old hospital buildings for serve community services or for creative purposes; Reconstruction of the traditional library concept with award-winning advanced design concept. Further, the building and plaza are integrated to create multiple activity spaces, making the new library a place to play, work, socialize, learn and relax.
- Converting the former hospital administration building into a green community infrastructure center with water recovery facilities to provide treated rainwater for toilet cleaning, laundry, irrigation and cooling for all buildings in the regional center. The water is stored in two tanks under the new park.
- The new Gunyama Park water recreation center is inspired by Sydney's famous ocean swimming pool. The center, which will be powered and heated by its locally produced energy system, will provide an indoor swimming pool, gym, covered outdoor yoga platform and nursery. There will be outdoor spaces for relaxation and play in the park, including a skating bowl, a barbecue area, a fitness training track and a multipurpose playground.
- Sydney's combined cycle power plant will provide low-carbon energy for the central network, powering the area's street lighting with batteries. Solar panels power the city's local power grid.

## LESSONS

1. Comprehensive strategic guidance



is crucial to the development direction of urban renewal.

2. Integrated design of transportation hub and urban renewal achieves twice the result with half the effort.

Urban renewal in many parts of the world often relies on the existing traffic conditions and infrastructure and the planning does not take into consideration future use. Thus, many times, when the renewal is completed, the original low-density population is replaced by higher-density housing and employment, which brings great pressure to traffic. Green Square addressed this issue by looking at mobility in a comprehensive manner including the interaction between Green Square and surrounding areas.

3. Urban renewal and sustainable development complement each other in combination.

At present, sustainable development has become the key concept of urban development. However, sustainable reconstruction of existing urban areas is a problem for many cities. In the urban renewal of the Green Square area, sustainable development has been taken as the core concept from the planning stage. The community center, transportation, infrastructure and public space construction in the area all embody the core principle of low carbon and environmental protection. In particular, the green energy system called "tri-generation" provides not only energy for the region, but also water and waste disposal for daily operation. The construction of this comprehensive regional environmental protection system is worthy of reference for the renewal and reconstruction of old urban areas and industrial sites worldwide.

▶ SDGS ADDRESSED ◀

Goal 3: Ensure healthy lives and promote well-being for all ages

Goal 4: Ensure inclusive and equitable education and promote life-long learning opportunities for all

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Goal 9: Build resilient infrastructure, promote inclusive and sustainable indus-

trialization and foster innovation

Goal 11: Sustainable Cities and Communities

- Target 1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

- Target 2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

- Target 3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

- Target 4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage

- Target 5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

- Target 6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Target 7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

- Target 8: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

- Target 9: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

- Target 10: Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

Goal 13: Take urgent action to combat climate change and its impact

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all

Repentigny, Canada

# A CITY FOR ALL

The City of Repentigny has a population 85,000 and a growth rate of 11% per annum. It has a surface area of 71.25 square kilometers and population density of 1,192 inhabitants per square kilometer. The city aims to foster social inclusion and the participation of all. It has undertaken

three innovative initiatives using new technologies to reach out to the most vulnerable individuals, the youth and the population at large under the umbrella of "A City for All initiative". These initiatives facilitate an easy and free access to support and services for the citizens.



1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY
11 SUSTAINABLE CITIES AND COMMUNITIES	16 PEACE, JUSTICE AND STRONG INSTITUTIONS			

The Information and Social Crossroads initiative makes possible the access to institutional and community services for those who have language difficulties, functional limitations or are not able to obtain basic support through the general referral system that is in place - mostly telephone and web assistance.

The Crealab initiative, within the municipal library, consists of a new creative living and user-friendly environment for the youth. This multimedia lab provides access to digital technologies for the creation of video, photo, music and 3D design.

The My Municipal Services initiative provides the population and families a better access to useful information on municipal services and activities at the neighbourhood level, through an interactive web mapping application.

▶ BACKGROUND ◀

The initiative A City for All is in line with the vision set for in the Strategic Development Plan 2018-2022 of the City of Repentigny which is centered on social inclusion and on the adaptation of the municipal services according to the needs of all the citizens, to achieve "a totally human city."

**Information and Social Crossroads**

In 2016, a new information and referral service was developed in the Montreal metropolitan area to provide assistance to the citizens by telephone (211) or via the Web, on a wide range of social and community resources. The 211 service helps curb poverty and social exclusion, giving the people with non-urgent social needs rapid information on the social and community resources that will help them find solutions to move beyond their precarious situations.

The City of Repentigny took the leadership to go a step further in addressing the issue of how to assist the most vulnerable people whose needs could not be fully taken into account for different reasons by this new referral service. This led to the setting up of the Informational and Social Crossroads (ISC) initiative which provides personalized support to the citizens who have special needs or who are confronted

with particularly complex situations. People who face language barriers, who cannot explain their situation clearly, who have functional limitations or for whom no assistance seems available can reach out to a social development officer for assistance.

**Crealab**

For the second component (Crealab), the City of Repentigny aimed at fulfilling the cultural mission of its public library by reaching out to the youth in the community who, over the recent years, had shown less interest for the traditional programs and activities of the library. The objective was to provide a new lively and user-friendly environment for the youth, focused on the use of new technologies for creative work and skills development.

**My Municipal Services**

The third component (My Municipal Services) was developed as a new web application of interactive mapping aimed at improving the quality of life and to foster the integration and participation of the citizens and families in the life of the community. It facilitates access to a wide range of

information on the services, programs and activities provided by the municipality according to the specific place of residence of the citizens.

▶ IMPLEMENTATION ◀

**Information and Social Crossroads**

The first component (ISC) was launched in 2017 and operates as follows. The vulnerable people are referred to a social development officer of the ISC either through the 211 information service or by one of the agencies concerned. The officer is able to interact directly with the person and is able to assess the situation and find the best suitable solutions available. The approach is to contribute to the empowerment of people and to reinforce their capacity to react effectively to the difficult situations they are facing. The role of the social development officer is also to make the links between the different agencies and community organizations and to make sure that the response to the needs of the



vulnerable people is as comprehensive as possible. The City of Repentigny played a key role in developing this proposal and mobilized all the agencies concerned.

**Crealab**

The second component (Crealab) was inaugurated in 2017 and is located in a traditional municipal library. It is a multimedia lab through which the users have access to digital technologies focused on creative individual and group activities. These activities include the production of videos, music, photography and 3D design. A large proportion of the youth in the community regularly visit the Crealab for many hours at the time. A close partnership has been established with the local school board and multiple workshops have been organized for schools groups. Special attention is given to reaching out to the immigrant youth and to youth with learning difficulties. The Crealab has also networking and professional development

activities for young entrepreneurs in the field of new technologies.

**My Municipal Services**

The third component (My Municipal Services) is a web interactive mapping application developed by the municipality which is easily accessible through various web browsers on desktop and mobile devices. Since 2015, it provides the citizens, based on their place of residence, with useful and timely information on many practical aspects of daily life in an urban environment. These include the schedules for the collection of different types of waste, access to municipal offices and location of police and fire stations. My Municipal Services is also a valuable tool for the employees of the city who receive requests for information from the citizens by phone, E-Mail or in person. An extension of this initiative, the Family Map, has been developed to provide families with a range of information on recreational and sports

activities, parks and green spaces, community organizations, nurseries, schools and special events.

▶ RESULTS ◀

All three components of the A City for All initiative have met with considerable success.

**Information and Social Crossroads**

So far, the Information and Social Crossroads initiative has made more than 400 interventions in favor of vulnerable people. It is worth noting that a majority of these vulnerable persons were women. About 40 % of the vulnerable people were aged 60 and over, while the others were spread in the other age groups. Support for personal and family life, mental illness and addictions, food and shelter are the more frequently requested. The other re-

quests cover different categories, including access to justice, consumer protection and health care. Vulnerable people in search of assistance through the ISC were referred to more than 100 different agencies or community groups.

The short story below illustrates how the ISC has had notable positive impact on the life of vulnerable individuals:

“A 70 year old man is not able to prepare meals and goes daily to a community centre. He is referred to the ISC. It is noticed that he has a hearing problem. He has difficulties hearing on the phone and does not know how to use the Internet. A connection is made with a Meals on Wheels organization that provides meals at home. He is also referred to the Social Affairs agency which does a need assessment and organizes support at home services. In addition adapted transportation is organized when necessary for this person.”

### Crealab

Since its opening, the Crealab has registered more than 38,000 admissions of teenagers after school hours. More than 200 have been recorded in a single day. It confirms that this initiative responds to the needs and expectations of the youth in the community. The teenagers tend to spend long hours at each of their visits. The Crealab proves to be a unique place for socialization and interaction, skills' learning and creative digital arts activities. It is worth noting that a majority of the users are girls.

The Crealab has also welcomed so far each year an average of 1,500 high school students who attend initiation and training sessions on technical and informational aspects organized jointly with the school board and the teachers. A significant proportion of these students have behavior problems, learning disability, intellectual handicap or autism. They are initiated in small groups to new technologies, with the participation of their teachers. Two career forums on new technology jobs have been organized for those students and 200 of them have attended those events. Five integration workshops have also been organized for 100 immigrant youth in partnership with a regional community-based organization. On a yearly basis, an average of 200 young entrepreneurs visits the Crealab. They attend networking events

and training seminars and have the opportunity to use the specialized equipment.

A group of teenagers with behavioural problems and experiencing difficulties to do their school home assignments have developed, through the Crealab, their abilities to use the new technologies for that purpose: for example the production of a video with a background green screen. Their school grades have improved and they have developed skills in video editing. The Crealab is also frequented by a significant proportion of teenagers from different cultural communities, some of whom are new immigrants. This contributes to their social integration. It has been observed over the months that lonely and shy teenagers have developed abilities to socialize and to interact with the other youth.

One teenager has produced a short video on the prevention of bullying. Another creative teenager has developed her skills and has been involved in the design of the logo of the Crealab. She is providing mentoring to other youth. Another one has been able to pursue her passion for photography and video editing. She is now developing her own business and aims at becoming a creative director. The curriculum vitae of many teenagers, in particular girls, can be enriched by their direct experience of new technologies. Young entrepreneurs have also benefited from the Crealab to develop their technical skills for example in 3D printing and in computer graphics.

A trust relationship has been established by many youth with the Crealab team. This has led some of them to discuss serious personal problems with members of the team, such as problems of violence, bullying and sexual identity. The Crealab team was able to refer each of these youth to specialized resources that could provide assistance and support.

### My Municipal Services

The application My Municipal Services (MMS) has generated strong interest among the residents of Repentigny. In the past year (2019) only, a total of 21 000 pages have been consulted by the citizens, or the equivalent of 1 500 per month. The average time of consultation is one minute per page. The months from May to August are the busiest ones and they correspond to the period during which most of the 1,500 or so, new households move to

the city each year.

Through the Family Map application, 4 700 pages have been consulted for the same period, with a peak reached in June, July and August when most families plan recreational and sports activities during the summer.

At the same time, My Municipal Services has proven to be an essential tool used by the employees of the City who are receiving requests for information from the citizens by phone, E-Mail or in person. They frequently rely on MMS to give reliable information to the citizens seeking information.

## ▶ CHALLENGES ◀

### Information and Social Crossroads

The development of the Information and social Crossroads initiative has necessitated approaching and convincing a wide range of partners. Considering the innovative aspect of the proposal, substantial time had to be devoted to explaining the objectives and the mechanics of the initiative. In particular, careful attention had to be given to the apprehensions expressed by some partners that this new initiative would duplicate existing services offered to vulnerable people. In-depth and open discussions on this issue were critical to building a strong consensus on the value added of the proposal and on its complementarity with existing services. It became clear that through the intervention of the ISC the connection between the vulnerable people and the agencies and community organizations would be facilitated and thus better support provided to people in need.

An ongoing challenge is to maintain the mobilization of the partners through the work of the multi agencies committee which has been set up in order to ensure orientation and follow-up of the initiative. This is done through periodic meetings and continuous networking and collaboration between the partners who have through this process a more global perspective on their interventions in favor of vulnerable people.



### Crealab

Regarding the Crealab, one of the challenges of the initiative was to depart from the traditional vision of a public library and to have this new concept approved by the municipality. Special attention had to be given to set up a team for the management of the Crealab. In particular, the position of manager called for a unique combination of up-to-date technological knowledge, administrative skills, and a capacity to organize participatory activities with the youth and to develop partnerships. The search profile put the emphasis on a strong interest for new technologies and for collaborative work and knowledge sharing. The team succeeded in recruiting a young librarian with a passion for technologies and experience with the youth. The team is now composed of the manager, three specialized technicians and two librarians. Special attention has been given to inform and discuss the initiative with all the existing personnel of the municipal library, in order to foster a better understanding of the initiative and dissipate any apprehension.

The Crealab initiative also called for an original architectural concept to be integrated in the existing library. The objective was to create a user-friendly environment that could be attractive and stimulating for the youth. Bold architectural choices

were made, departing from the traditional concept of municipal libraries. Its features combine industrial open warehouse style, multifunctional and user-friendly spaces for interaction and 3D design and container style well equipped rooms for training and creation (music, videos and photos).

### My Municipal Services

Concerning the My Municipal Services, there was a large support throughout the municipal organization for this initiative. In order to resolve any technical problem and to ensure the coherence and reliability of the information, the expertise of a specialized resource is required in the geomatics and information system division of the municipality. Turning to the future, one of the challenges is to follow and adapt to the evolution of these technologies. A technological watch has been set in place for that purpose and a proactive approach will allow for bringing timely improvements and new dimensions to both applications.

## ▶ LESSONS ◀

### Information and Social Crossroads

Many cities across the world have adopted social development strategies and specific policies and programs for the

inclusion and wellbeing of the children, the youth, women and the elderly. One of the challenges is to reach out to the most vulnerable people in the community and offer them an opportunity to have their basic needs satisfied and to participate in civic life. The Informational and Social Crossroads initiative offers an example of how a municipality can mobilize its institutional and community partners, as well as the private sector, and can develop an original and practical approach to support and empower vulnerable people. The model rests on the capacity to interact directly with the people in need and to look for a comprehensive response outside the traditional silo approach of many organizations.

### Crealab

Many cities across the world are also faced with the challenge of integrating the youth, of developing their sense of belonging to the community and of contributing to the development of their skills and knowledge. Municipal libraries have traditionally played a key role in this regard. However, the interests of the youth have been evolving and many of them are now more attracted by the new technologies. The Crealab initiative is one example of how a substantial change can be brought in the services offered by a municipal library that could become a focal point for the activities of the youth in a secure and

creative environment. The potential of new technologies has been harnessed for the benefit of all the youth. The process that led to this initiative was based on a strategic and innovative municipal vision, on the involvement of the youth in all the phases of the initiative and on the establishment of strong partnerships with the academic community, the private sector and community organizations.

### My Municipal Services

New technologies, in particular in the field of geomatics and geographic information system, make it possible for cities to develop innovative approaches to reach out to their residents and provide information on municipal services. My Municipal Services is a concrete example of how it can be done practically for the benefit of the citizens and the families. Special attention has to be paid to the acceptance of the existing service providers to convince

them that the innovation enhances, rather than duplicates their work.

### ▶ INNOVATION AND SDGS ADDRESSED ◀

#### Information and Social Crossroad

The ISC initiative has broken new ground in the field of inclusive and personalized social and community services.



It took advantage of the introduction of a new information and referral service (211) based on new technologies to come to grips with the difficult challenge of reaching out and of providing support to the most vulnerable people in the community through a human positive and efficient interaction.

A key element of this innovative approach is the capacity to interact directly with the most vulnerable people, to assess their needs and to identify practical solutions in order to provide them with the support they require. The ISC initiative breaks down the silo effect that too often limits the possibility to bring together all

the elements of complex solutions to address difficult situations affecting vulnerable people. The approach also fosters the empowerment of individuals and families in developing their capacities to react to those difficult situations.

The City of Repentigny has established an innovative partnership with a

community-based organization Le Centre à Nous in order to deliver the support to vulnerable people. The center is a pillar of autonomous community action in the region. It was created 30 years ago and it provides office spaces and services to 22 community organizations dedicated to the well-being of the population. The municipality was keen to benefit from the skills and expertise of this organization to ensure the success of the initiative. The ISC and the social development officer are located at the center.

Another innovative feature is the committee that brings together all the pivotal partners involved in the initiative. Representatives of health and social services agencies, other government instances, public safety, schools, community organizations and municipal departments are committed to share information and have a common will to improve their practices.

In 2018, the Informational and Social Crossroads initiative received the prize for the best initiative in support of families by a municipal of over 25 000 people awarded by a Quebec NGO, the Carrefour action municipal et famille, which has for mission to foster policies and programs for children, families and the elderly at the local level.

This initiative is in line with the following goals of the 2030 Agenda for Sustainable Development:

- Goal 1: End poverty in all of its forms
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3: Ensure healthy lives and promote well-being for all ages
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
  - Target 1: Access for all to adequate, safe and affordable housing and basic services and upgrade slums
- Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all.

#### Crealab

The Crealab initiative was undertaken in the context of emerging trends and

of the need for municipal organizations to adapt and reshape the services they provide to the citizens. From the perspective of traditional public library programs and activities, this initiative is particularly innovative. Using new technologies to offer creative activities, to stimulate innovation and interest for digital arts and to provide an opportunity for skills' development, the Crealab is also a living and secure environment for teenagers. The young entrepreneurs of the region have also a place to share ideas, learn and exchange skills and develop partnerships.

The concept of the Crealab was inspired by the growing interest for venues focused on the initiation to new technologies such as Fab Lab or Media Lab. A limited number of initiatives of that nature have been undertaken recently and the City of Repentigny has been a pioneer in executing the idea for the benefit of the youth.

The Crealab received in 2018 an OCTAS award, in the category of municipalities of more than 500 employees, from the IT ACTION Network, which recognizes organizations for their creativity, vitality and exceptional contribution to the growth of the information technology industry in the province of Quebec (Canada)

This initiative is in line with the following goals of the 2030 Agenda for Sustainable Development:

- Goal 4: Ensure inclusive and equitable education and promote life-long learning opportunities for all
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

#### My Municipal Services

The City of Repentigny has been innovative in the way to reach out to its residents and to provide information on municipal services. It links the citizen with specific information in accordance with the location of its residence and it provides mapping information on how and when to access municipal offices, services and activities. My Municipal Services application has been the first one of this type developed at the municipal level in Canada. It is a powerful tool to foster the integration of newcomers to the city and to foster civic participation by all the citizens. It helps mu-

nicipal employees to give better services to the residents. It creates a proximity and a connection between the municipal services and the population. It is both flexible and adaptable.

The My Municipal Services initiative provided an opportunity for the City of Repentigny to extend on the same basis the information available to families through a new initiative called the Family Map. With the same configuration, the application gives access to a range of information on recreational and sports activities, aquatic center, skate plaza, cycling network, parks and green spaces, community organizations, nurseries, schools and special events. It includes also information on activities in the libraries, the Crealab and the arts center of the municipality.

The City has received recognition from the information technology industry for the initiative My Municipal Services. It received in 2016 an OCTAS award from the IT ACTION Network, which recognizes organizations for their creativity, vitality and exceptional contribution to the growth of the information technology industry in the province of Quebec.

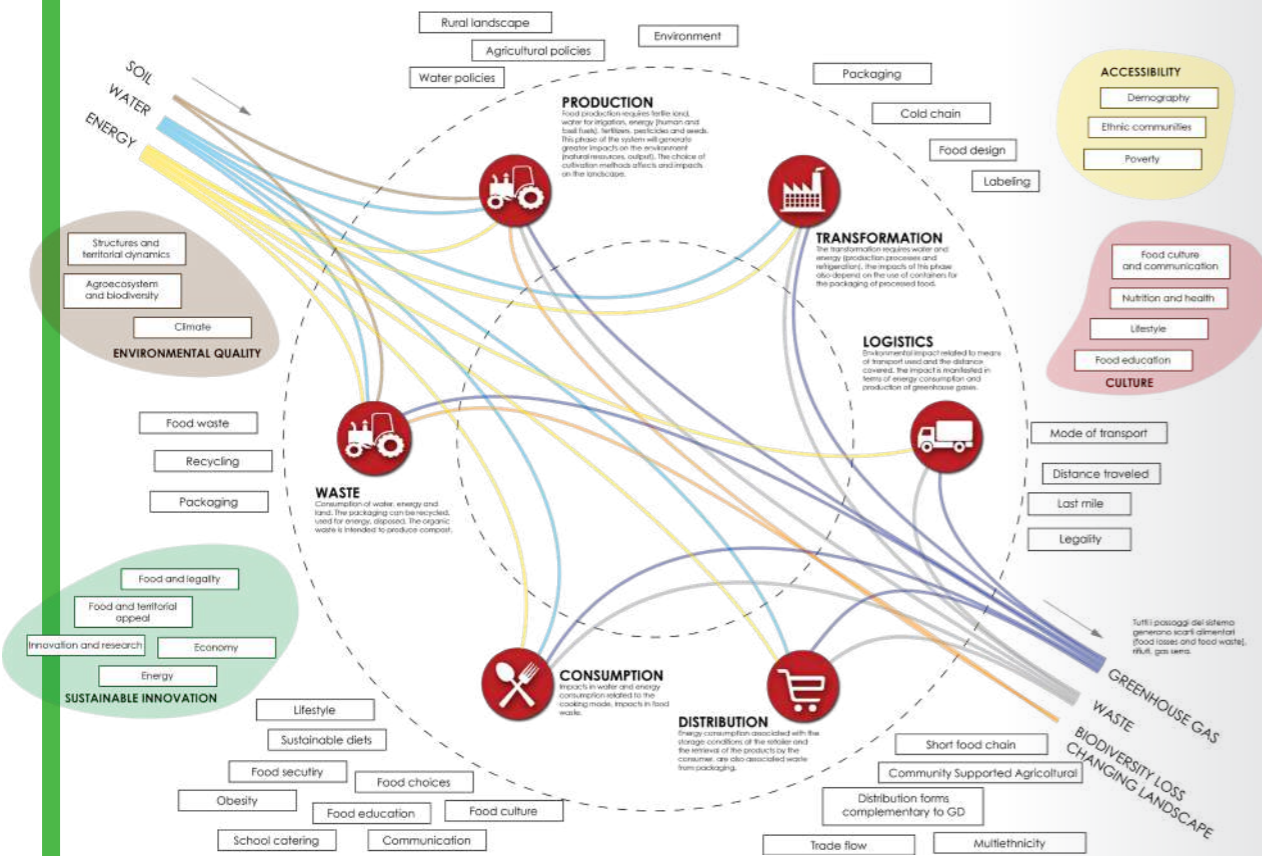
This initiative is in line with the following goal of the 2030 Agenda for Sustainable Development:

- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
  - Target 3: Participatory, integrated and sustainable human settlement planning and management.

Milan, Italy

# MILAN FOOD POLICY

## An Innovative Framework for Making Urban Food System More Sustainable, Inclusive



DEF Milan Food System assessment



### BACKGROUND

As the world's urban population expands, the impact of urbanization and globalization on the food system becomes more acute. International trade in food increases the distance between producers and consumers. This, in turn, increases energy use and aggravates pollution and traffic congestion brought about by logistics. Combined with modern retail and consumption practices, food waste has also become a major issue. The Food and Agriculture Organization (FAO) estimates food loss and food waste at 30% worldwide. This figure is higher in wealthier countries and can reach 40%. At the same time, many cities are witnessing "food deserts" where poorer neighborhoods and

Milan is the second-largest city in Italy and a world-renowned metropolis. With an area of 181 square kilometers, Milan has 1.33 million residents, with a population growth rate of 4.2%, while the Metropolitan City of Milan, covering 272 cities and 8 provinces, has a population of about 7.55 million, with the daily inflow of commuters reaching millions. As a city with a large population, food plays a very important role in the sustainable development of the city and the region. In 2015, Milan hosted the World Expo on the theme of "Feeding the Planet, Energy for Life". It is the first time that food featured as a theme of a World Expo. The Milan Expo not only

vulnerable members of society have little or no access to fresh food and rely on processed and frozen foods. At the World Expo hosted by Milan, the Municipal Government committed itself to formulating and adopting a sustainable food policy. In 2015, the City Council of Milan voted to approve the document "Milan Food Policy Guidelines", which clearly defined the five key elements of Milan's food strategy. The successful implementation of the activities of Milan Food Policy is attributed to the cooperation between the Milan local government (which provides institutional support for the implementation of the policy), the Fondazione Cariplo (a key financing institution in Italy and one of the project financing entities) and the independent research center — ESTà which provides technical and scientific support

showcased food from different countries, but also explored how to meet the food needs of a growing world population estimated to reach 9 billion by 2050. As the host city, Milan took the lead in providing the world with new ideas for the sustainable development of food.

for the formulation of the policy. The Milan Food Policy is an innovative measure taken by Milan Municipal Government to build a more sustainable, resilient and inclusive food system. Over the years, the policy has been driven by a growing awareness of the challenges posed by climate change and the responsibilities of different actors and stakeholders in the food chain. Starting with a 2014 in-depth study of Milan's food system, Milan Food Policy has become a living laboratory that pays close attention to all aspects of food supply and demand and food waste. The Milan Food Policy uses various innovative tools and methods (projects, MOUs, and special agreements) to collaborate with the municipal sectors, municipal institutions, social actors and the private sector. At the same time, thanks

to its leadership role as chair in EUROCI-TIES (a network of major European cities), Milan has also built strong partnership with other European cities working on food-related issues.

## IMPLEMENTATION PROCESS

### 1. Operating mechanism

(1) The Milan Municipal Government fulfils a leadership role in advocacy and education. It reaches out to and engages with all Milanese through participating companies, academic and research institutions, schools, public institutions and service providers. A major focus of the initiative is to educate people on what is a healthy and sustainable diet.

(2) The Milan Municipal Government plays a direct role as well. By serving healthy and locally produced and procured food in all public institutions (schools, hospitals, canteens, office cafeterias, etc.) the public sector catalyzes change throughout the entire food chain. For different groups of people, such as students, the elderly, the vulnerable groups and the municipal employees, the government guarantees that all inhabitants of Milan can buy affordable healthy food within reasonable distance. At the same time, well placed social canteens cater for the most vulnerable groups. To minimize waste, a network of participating restaurants, canteens and food businesses donate excess to charity. In addition, school children are provided with “doggy bags” so that they can take home what they do not consume. In addition, the municipal government actively promotes different forms of urban agriculture and horticulture so as to reduce food miles.

(3) The Milan Municipal Government promotes the development of a cooperative system for agricultural food research, which includes universities, research and training centers, and public, private and non-profit organizations. It supports the development of scientific research on urban agriculture, food supply and demand systems, food waste reduction, nutrition, etc.

(4) In cooperation with local actors, Milan Municipal Government promotes actions by citizens and food system operators throughout the life cycle of food to

reduce excess and waste. It works with local actors to promote the recovery and redistribution of food surpluses from grocery stores, and establishes partnership with institutions, economic and social actors to promote appropriate packaging and reduce waste throughout the life cycle of food. The government actively promotes the principle of the circular economy as well as organic food production.

(5) The Milan Municipal Government, through its own institutional tools, provides special services (such as land credits, local land trusts, and access to state-owned land) to encourage local food production. It also disseminates multi-functional agricultural activities that contribute to the realization of the objectives to facilitate people’s access to urban gardening and urban farming. It also vigorously carries out agricultural and horticultural activities throughout the city. It supports social, technological and organizational innovation in transformation, distribution, logistics and trade activities to achieve a sustainable food system.

### 2. International promotion

From May 29 to May 31, 2019, the First Regional Forum of Latin-American Signatory Cities was held in Rio de Janeiro, Brazil, to promote the regionalization of the Milan Urban Food Policy Pact (MUFPP). The forum promoted dialogue between Latin American cities to improve food management in the region. Participants worked together to develop a more inclusive food policy agenda for the region including innovative solutions that reflect the importance of local governments as key players, in achieving sustainable food system.

## RESULTS

In general, the development momentum of Milan Food Policy is strong, with three main achievements:

1. Institutional tools and framework: The Milan Food Policy is supported by two institutional tools for implementation: the Urban Food Council and the Monitoring Framework. The food policy action and guidance monitoring system based on the Monitoring Framework of the MUFPP analyzes, evaluates and monitors trends, issues and challenges as well as impact

of various actions for the long term. The information gained through this monitoring enables Milan improve awareness of problems and adjust its strategy where needed. Key actions include the establishment of integrated information systems, the strengthening of existing information gathering and sharing within and among municipal structures and institutions, research institutions, and social groups to better inform decision making and implementation. The independent research center, which provides technical support for the Food Policy Office, released its latest comprehensive report of Milan’s food system in 2018, including the application of the Monitoring Framework in the collection of documents and data.

2. Supply chain linked efficiently. Milan Food Policy links the canteen procurement of the schools with the rice production supply chain of farmers in the agricultural areas near Milan (180 tons/year, worth €300,000/year). The project provides a pilot experience for connecting school canteens and the supply chain of agricultural products, and has developed 19 supply chains that directly supply agricultural products to schools.

3. Institutional anchoring and ownership: At the management level, the implementation of the urban food policy is under the mayor’s office and directly under the supervision of a dedicated executive vice mayor. This set up is designed to ensure a high degree of visibility, credibility and policy continuity. It has considerably changed both the governance structure of the municipality and the work culture by rallying all departments to fulfil their respective roles and responsibilities in carrying out the food policy as well as providing the necessary institutional support. This required a substantial bridging of silos in the Municipal Government to achieve the required holistic vision and approach, as well as a high level of coordination.

## HIGHLIGHTS

Milan Food Policy can be regarded as an innovative practice and a new innovative policy measure conceived in the context of Milan. There are three main innovations:

1. Content innovation. Milan Food



Policy has identified five key contents of Milan’s food strategic work, which are specially emphasized in the “2015-2020 Milan Food Policy”. The contents are as follows:

- 1) Provide healthy food and water to the public;
- 2) Promote sustainable food systems;
- 3) Promote food education and awareness;
- 4) Eliminate food loss and waste;
- 5) Support scientific research on urban agriculture

2. Management innovation. The mayor has appointed a vice mayor in charge of Milan Food Policy to carry out coordination and communication, and the newly established Food Policy Office provides technical support. The Office is also responsible for integrating the forces of various departments, institutions, cities and actors at all levels involved in the food system, and sharing the methods and best practices of the Milan network (MUFPP, EUROCI-TIES Food Working Group, C40 Cities Climate Leadership Group) within the Secretariat of the MUFPP.

3. Value innovation. MUFPP is also a means of Milan’s foreign policy. From important sister cities to the C40 Cities Climate Leadership Group, Milan has

launched an international city alliance that includes 69 major cities in the world to cope with climate change, trying to build an international urban cooperation network through this policy. In fact, as early as February 2014, at the C40 Mayors Summit held in Johannesburg, Giuliano Pisapia, the mayor of Milan, proposed to formulate relevant policies on urban food and signed them up to the Pact during the 2015 World Expo. In September 2014, leaders from more than 40 cities across continents held a large video conference to study and exchange views on the content of the MUFPP. The full content of the MUFPP was drawn up at a conference in London in February 2015. On October 15 of the same year, 100 cities held a formal ceremony to sign the MUFPP and the Framework for Action. The next day, members submitted their signature papers to Ban Ki-moon, Secretary-General of the United Nations. So far, a total of 133 cities have participated in the MUFPP, covering more than 460 million residents.

## LESSONS LEARNED

Urban food security is gaining im-

portance in the sustainability of cities and requires a range of interventions. Even wealthy cities (such as Milan) have food poverty and inequality even as they grapple with waste. Local governments can play a crucial role in mobilizing and coordinating the diversity of partnerships needed to address urban food security. For such a multi-sectoral thematic as sustainable food system, a high level of collaboration and coordination is needed, as well as the engagement of multiple stakeholders. The city of Milan is achieving this by first and foremost, recognizing the need to break down silos within the municipal government, and establishing an appropriate governance structure.

The initiative addresses SDGs:

Goal 1: End poverty in all of its forms  
Goal 3: Ensure healthy lives and promote well-being for all ages

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12: Ensure sustainable consumption and production patterns

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

 eThekweni, South Africa

## Increment, Participatory, Programmatic Informal Settlement Upgrading Programme & Partnerships with the Private Sector to Achieve Sustainable Sanitation Service Provision



Durban, also known as eThekweni, located in KwaZulu-Natal, South Africa, has a population of about 3.9 million, a land area of 2,556 square kilometers and a population density of 1,523 persons per square kilometer. With comparative advantages in industry, trade, tourism, creative industries, finance, manufacturing, and transportation, Durban is reputed as the “Best-

run City of Africa” and is also a popular destination for regional and international conferences.

Over the years, the city’s water and sanitation department has undertaken several innovative programmes related to neighbourhood improvement as well as expansion and enhancement of water and sanitation services. Such initiatives

have been notable for their emphasis on responding to observed and expressed need as well as on the participation of the community. The two initiatives described below are on (i) participatory upgrading of informal settlements and (ii) extension of sanitation services in the peri-urban neighbourhoods



appropriate sanitation. The focus of this report is on the upgrading initiative.

The “upgrading of informal settlements” is a strategy that incorporates social and economic opportunities and which aims to transform settlements into truly livable and sustainable communities. It focuses on upgrading urban infrastructure and creating jobs, benefiting 70,000 households in six years. The upgrading project provides residents with access to education, medical care and other social facilities, and promotes social cohesion, spatial justice and urban integration. In addition to providing infrastructure, the project also promotes urban safety, improves the sustainability and resilience of the city, and works with local communities to address challenges such as urban poverty, economic exclusion, and spatial injustice. This new upgrading is model applied to all informal settlements in Durban and is progressive, participatory, cooperative and differentiated.

The slum upgrading initiative directly reflects the vision of “making Durban Africa’s most caring and livable city by 2030” and the plan of “creating a quality living environment” according to the city’s *Integrated Development Plans*. The initiative will also make positive contributions to the realization of the goals set forth in the *Integrated Urban Development Framework* and the *National Development Plan*.

### UPGRADING INFORMAL RESIDENTIAL NEIGHBOURHOODS

Despite the above cited advantages and the growth generated by Durban’s rapid urbanization, more than 220,000 households, representing almost a third of the urban population, still live in informal settlements in the city. Durban decided to adopt a progressive and participatory approach to slum upgrading. This approach is quite different from the first post-apartheid housing policy of South Africa, and focuses on *in-situ* upgrading rather than re-housing. It consists of a progressive and case-by-case approach providing basic urban infrastructure and services in response to priorities identified by the concerned communities. Thus the upgrading may encompass public bathing facilities (toilets, shower equipment, sinks and washing tanks) and personal power facilities, reconstruction of walkways and passageways, rainwater control, garbage collection, improvement of facilities in early childhood development centers, and others. The approach is accompanied by

a deliberate effort to recognize residency rights. Once these rights are obtained, the concerned residents can no longer be evicted without due process. This *de facto* recognition of “right to the city” serves as a major incentive for the residents of informal settlements to participate in progressive transformation and upgrading.

#### ▶ BACKGROUND ◀

More than 220,000 households in Durban live in crowded informal settlements that are plagued, frequent fire disasters and floods, seriously inadequate public services for drinking water, sanitation, electricity and emergency response, and rampant infectious diseases. In order to address these challenges, Durban is implementing two major initiatives: one is upgrading informal settlements, and the other is improving public health through public-private partnerships for delivery of

#### ▶ IMPLEMENTATION PROCESS ◀

The approach is incremental. The transformation of informal settlements has been the primary task of the city of Durban for a long time. The eThekweni Municipality has built over 200,000 fully subsidized houses since 1994. However, the growth of informal settlements far exceeds the

capacity of all tiers of government to meet demand, and the fully subsidized housing policy, adopted by the first post-apartheid government, can no longer represent the only solution. Lack of resources and problems in implementation are causing an increasing backlog in housing provision, resulting in growth of new informal settlements and creating more urban sprawl. This is a vicious cycle, as sprawl increases the social and economic costs to society, as evidenced by more congestion, pollution social segregation and inequality.

In order to address the challenges brought about by informal settlements, the Municipality of eThekweni started to adopt a new vision and new governance approach to informal settlement upgrading. This new approach is a more holistic and coordinated approach to upgrading and a departure from the conventional piecemeal and sectoral approach which treats the inhabitants of informal settlements as beneficiaries of social services, rather than as citizens with same rights and obligations as all the other inhabitants of the city.

After studying the complex problems facing informal settlements, the eThekweni Municipality realized that stakeholder engagement is critical for success, began to take more active steps to intensify the participation of all parties concerned, as well as a series of actions to meet this huge challenge. Funding mainly comes from the Urban Settlement Development Grant provided by the Ministry of Finance of South Africa and other social institutions in various fields, especially schools and clinics. These measures specifically include:

1. The National Upgrading Support Programme by the Department of Human Settlements of South Africa: participatory action planning, sustainable livelihoods, as well as promotion and support for settlement upgrading plan;
2. The City Support Programme by the Ministry of Finance: providing technical support for innovation and upgrading of informal settlements;
3. Improving the infrastructure of early childhood development centers in informal settlements;
4. Grassroots approaches towards self-reliance in South Africa: the ISU-Labantu Project (Informal Settlements Upgrading led by the community); A key activity is research, data collection and

mapping done in collaboration with residents.

5. EU-funded partnership-based programme for progressive upgrading and integration of informal settlements;

6. Resilient City Strategy: Resilience Construction (Option 1: Cooperative Informal Settlements Action);

7. Social responsibilities of the private sector: the social sustainability and innovative scheme of Blackburn Village - iThuba center;

8. The agreement signed with the Slum Dwellers International which specializes in providing expertise for community-led, participatory and progressive schemes in informal settlements;

9. The African Forum for Urban Safety hosted by the eThekweni Municipality, which also cooperates with UN-Habitat to promote urban safety with a focus on informal settlements.

In 2011, the Durban City Council approved the provision of temporary services in informal settlements, which were at the time not included in the city's short-term housing supply scheme. The government adopted the "housing space priority model" and selected the informal settlements in which to implement the initiative.



## RESULTS

Through this initiative, the government can give priority to providing basic services to as many settlements as possible, and can effectively formulate acceptable engineering standards with a limited budget. Through the Expanded Public Works Programme, such as upgrading early childhood development centers, the government provides more opportunities for new contractors and employs personnel from local communities to look after public shower facilities (for example), thereby creating more jobs directly and



indirectly within the community. Moreover, parallel schemes are provided to address livelihood issues and the provision of local economic development and key social facilities, which ultimately reinforce community participation, empower residents, create ownership, and improve outcomes. .

The initiative is driven by an innovative horizontal management structure that promotes infrastructure construction, budget commitments and coordination among all relevant departments dealing with social, economic, environmental and safety issues in informal settlements. Moreover, these settlements are upgraded *in situ* instead of being relocated to the outskirts of the city. Sanitation facilities are improved to prevent the spread of infectious diseases and physical access is provided to shorten emergency response time. Access to electricity is ensured to prevent shanty fires caused by the use of paraffin or kerosene lamps, improve air quality and reduce dangerous illegal wiring. These coordinated efforts by different departments provide residents not only with improved access to basic urban infrastructure and services, they are also closely coordinated and leveraged with improved access to education, medical services and other social welfare services. This results in an improved quality of life of the residents in informal settlements, thus enhancing social cohesion, spatial justice and urban integration.

By September 2018, more than 1,500 related facilities have been built, serving 113,000 households in 370 settlements; 254 settlements have gained full access to electricity and 56 settlements partial access, benefiting 36,000 households. Water supply (vertical pipes and public showers) has been ensured in most settlements (including relocated ones), benefiting 148,000 households in 231 settlements; and 17,459 households in 33 informal settlements have benefited from road connections, improving physical access.

## CHALLENGES

As the urban population rapidly increases, housing problems in Durban become more prominent. The existing informal settlements cannot keep pace with the demand, resulting in sprawl and



overcrowding. Similarly, the cycle of inadequate water, sanitation and other basic services continues to increase, with attendant disease and other hazards. The eThekweni Municipality needs to take more coordinated, consistent and comprehensive measures, actively cooperate with all social parties, unite all forces, and make full use of the funds and talents of all stakeholders to be able to continually improve the upgrading of informal residential communities. In addition, since the initiative cuts across multiple departments and sectors, as well as social actors, the eThekweni Municipality is in the process of establishing a new institutional and governance structure, to achieve a shared vision and plan, and to further integrate and coordinate the actions and resources of various departments and tiers of government with those of civil society and the private sector.

## INNOVATION

Recognizing informality and working with the residents of informal settlements as fully-fledged citizens rather than as "beneficiaries" of social welfare or pro-

tection has led to a major departure from past practice. Through the regularization of existing informal settlements and the delivering of infrastructure, the challenges of urban poverty, economic exclusion and spatial injustice are reduced. On this basis, informal settlements are upgraded and transformed into livable and sustainable residential areas, alleviates the financial difficulties facing the government, shortens the time of neighbourhood upgrading, and improves the sustainability and resilience of urban settlements and their residents. In addition, the facilities for water supply and sanitation, roads and sidewalks, rainwater control and electrical connection delivered by the project are permanent and conform to the layout plan for the eventual final implementation of the formal housing project. Therefore there is no waste cost in providing these services, which will eventually become an integral part of the future housing improvement plan. In addition, the eThekweni Municipality encourages the participatory planning of communities, to ensure the most appropriate services as well as the correct prioritization.



## LESSONS

The new upgrading model of informal settlements adopted by eThekweni represents a major departure from the past – it is based on a different and more functional relationship between the government and the urban poor. This relationship is predicated on the “right to the city” as well as on the need to adopt a systems approach to upgrading. Such an approach, which

is still in its infancy in Durban, requires a change in attitude towards the urban poor. It requires that they be recognized as citizens rather than beneficiaries of hand-outs or of welfare services. It requires the leveraging of all public and relevant private and civil society resources – human, financial and technical – to maximize impact and outcomes. The sectoral and uncoordinated approaches of the past where different municipal departments, non-governmental organizations, central

and regional government entities, not only led to gross inefficiencies, but also failed to create ownership within the community and perhaps, more importantly, to facilitate the creation of social capital. In essence, what eThekweni trying to achieve through its informal settlement upgrading initiative, is a “Local Economic and Social Development Programme” that links the improvement of living conditions of the urban poor with improved economic opportunities and dignity.

## PARTNERSHIPS WITH THE PRIVATE SECTOR FOR SUSTAINABLE SANITATION SERVICES

In order to provide a basic but safe level of sanitation to its citizens, eThekweni Municipality, through the Water and Sanitation Unit (EWS) installed over 80,000 Urine Diversion Toilets (UDTs) at a household level in rural areas. The Municipality made a commitment to empty the UDTs following concerns over health risks to residents during the emptying process. The project thus needed to address a number of elements of the sanitation value chain including emptying, transit and disposal or recycling.

eThekweni Municipality identified an opportunity to implement a circular economy approach, rather than the linear make-use-dispose approach, through the conversion of waste into valuable products that would generate new business opportunities and reduce the operational costs for the Municipality. This was implemented by establishing partnerships with the private sector, a research organisation and funders through (i) a tender based contract, (ii) a service level agreement, and (iii) Memoranda of Understanding (MOU).

As of August 2018, over 40,000 UDTs had been emptied using local businesses. A Black Soldier Fly Larvae (BSFL) processing plant has been constructed to process the UDT waste. Funding from the Bill & Melinda Gates Foundation (BMGF) reduced financial risk of the project through the provision of funds for the construction of the BSFL plant. Research support to the project has been provided by the Pollution Research Group (PRG) at the University of KwaZulu-Natal (UKZN).

## BACKGROUND

The National Sanitation policy requires every Municipality to reduce, reuse, recycle, and recover resources in the sanitation sector taking cognisance of associated health risks.

Following research identifying health risks associated with emptying of UDTs, eThekweni Water and Sanitation (EWS) developed a policy to allow for emptying of the 80,000 UDTs every two years at no cost.

When UDTs were originally installed within rural households, residents were required to empty and bury the decomposed waste. However, research identified health risks to the residents due to the presence of pathogens in the faecal waste. These health and safety concerns, together with political pressure to provide a free toilet emptying service to the poorer neighbourhoods motivated EWS to investigate opportunities to implement a circular economy approach – i.e. to convert waste into valuable products that could be sold to various markets. By deriving value from the waste the cost of sanitation services could be reduced for the municipality, while contributing to the local economy. The objective of the project was to establish sustainable business partnerships to remove and process UDT faecal waste to produce safe, reliable and saleable products.

## IMPLEMENTATION PROCESS

There are four key partnerships which are critical to this innovative undertaking:

**Public-Research Funder:** The Bill and Melinda Gates Foundation (BMGF) willingness support “new normal” approaches to sanitation to provide safe, dignified sanitation to the millions of unserved people.

**Public-Research Organisation:** UKZN provide dedicated research support.

**Public-Private Contractor:** The UDT emptying contractor was appointed following a tender process. Local businesses are used to empty, bury or transport waste while adhering to health, safety and environmental requirements.

**Public-Private Sector:** BSFL Plant Operator: The BSFL operator was appointed through a negotiated Service Level Agreement (SLA) which established the responsibilities, risks and objectives of the operation. The financial arrangement within the SLA was innovative in three areas namely: De-risking through capital expenditure provided by the BMGF; the payment of a variable gate fee to the operator; sharing of income earned from the sale of products and the gate fee profit between the Municipality and the operator.

The BMGF provided the funds for the design and establishment of the Black Soldier Fly Larvae (BSFL) plant, while the Municipality provided the funds for the emptying of the UDTs by the contractor. The BSFL operator provided the technical resources for the establishment of the plant, and a business consultant assisted the Municipality with the contracts and agreements.

Although the use of BSFL as a processing technology for food waste has been in existence for several years, this project is revolutionary in that the technolo-

gy has not been used as a sanitation solution. The risks were thus relatively high and de-risking required combined effort of both private sector and the municipality. The outcomes from an investigation into the use of BSFL to process fresh faecal waste inspired this pilot project. Similarly, the use of public private partnership was inspired by an existing partnership with municipality and a private operator where wastewater is treated to a standard where it can be used in industry. This existing partnership also falls within the sanitation circular economy.

Partnerships with UKZN and BMGF are being used in strategic planning and policy development. The research feedback loops provided by UKZN allow for changes to existing policy or the development of new and more appropriate policy. The public private partnerships allow for innovation including the development and mentoring of local businesses under the management of the emptying contractor, using BSFL technology to process UDT faecal waste into valuable products, and testing of new business models which allow for sharing of costs and profits between the municipality and the operator.

## CHALLENGES

There was a need to build relationships with city management to encourage them to move away from the normal linear approach to sanitation and embrace a new business model. In addition, a higher than expected sand content, climatic conditions and untested processing equipment delayed the production of saleable products. To mitigate this, strategies to ensure business viability included the production of a soil fertiliser to achieve early market penetration while waiting for resolution of production problems and the validation of high value products such as animal feed, oil and chitin.

## RESULTS

The BMGF partnership provided financial and technical support throughout the project, assuring stability. The UKZN partnership has provided feedback loops on process, functioning and performance

of the BSFL processing plant, producing knowledge that can be used in similar ventures elsewhere. To date, The UDT emptying contractor partnership has resulted in over 40,000 UDTs being emptied by six small businesses in compliance with health, safety and environmental requirements. Small businesses have also received training on business management. Income has been earned from the municipal gate fee, and as of August 2018, the plant is processing 1.5 tons of UDT waste per day. Useful indicators have been developed for efficiency and profitability of waste processing. The business model shows that processing waste will save up to \$46 per Urine Diversion Toilet, compared to waste dumping. On-going testing by University of Kwa Zulu Natal and the operator also provides valuable data for the efficient/effective running of the BSFL processing plant. The initiative hopes to clearly demonstrate that sanitation operating costs can be reduced through partnerships with the private sector by deriving value from waste.

## LESSONS

The following key lessons can guide other cities when embarking on a partnership approach to new circular economy projects:

- There must be a regulatory framework to allow for the use of tender processes, public private contracts and any other necessary arrangements;
- When setting up agreements and contracts with the private sector, incentives and penalties should be included;
- Public and private sector funding needs to be combined to reduce risk and give ownership to the partners;
- City management should be made aware of the project and its achievements so that new circular economy initiatives are more readily accepted in the future
- In the initial technical testing phase the operator should first achieve a saleable production line before investing in other technology product streams
- All stakeholders will need to understand the need to allow time for testing, research and new iterations of the process and products before sustainability is achieved.

Innovation is critical to meeting the challenges of ensuring safe sanitation for all.

## SDGs addressed:

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture;

Goal 6: Ensure availability and sustainable management of water and sanitation for all;

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- Target 1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

- Target 3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries;

- Target 6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- Target 8: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.



Surabaya, Indonesia

## Public Participation in 3R Waste Management for Better Surabaya



Surabaya is the second-largest city and the second-largest seaport in Indonesia, as well as the capital of East Java Province. The city has a population of 3.3 million within its city limits of 334.51 square kilometers, giving it a population density of about 10,000 people per square kilometer.

Over time, this densely populated city has produced more and more solid waste, placing a great burden on its ecological environment. To address this problem, the municipal government launched a program and campaign on public participation in waste management. The campaign is known as the 3R campaign for Reduce, Re-use and Recycle, with a strong emphasis on Reduce. The project actively uses a combination of low-technologies and world-leading technologies to create an economically feasible waste management, monitoring and reporting system. The results are evident: Surabaya, despite its substantial demographic and economic growth has, over the past few years, reduced both per capita and absolute quantities of solid waste and has had very impressive results in waste re-use and recycling. This project has thus become a reference for other countries, regions and cities around the world, especially for the cities in Southeast Asia where the situation is often very similar.

Surabaya's waste management methods, including the use of Information and Communications Technology (ICT), have not only been widely promoted in cities at home and abroad, but also won many awards and recognition. The city has been granted the Adipura Award (known as the Noble Clean City Award issued by the Indonesian State Ministry for the Environment in recognition of achievements in urban environmental governance) many times. At the international level, it was nominated for the 2018 Lee Kuan Yew World City Prize and was the winner of "The Online Popular City" in the 2018 Guangzhou International Award for Urban Innovation.



### ▶ BACKGROUND ◀

Indonesia is a multi-ethnic country with the fourth largest population in the world and one of the most urbanized countries in Asia. Like many other Indonesian cities, Surabaya also faces great pressure resulting from its highly dense population. The waste resulting from such a large population and rapid urbanization has made the local natural environment suffer serious degradation. The Indonesian government has enacted relevant laws and regulations to try to solve this problem. In 2008 and 2009, the government successively issued laws on solid waste management and environmental protection. In order to better implement the laws, Indonesia has formulated a series of related policies, such as the Local Government Regulations 2012 (Article 81: Household Solid Waste Management and Related Solid Waste Management), regulations on management of certain types of waste, and national strategies on solid waste management. At the same time, Indonesia has also set up departments corresponding to the above policies, for example, the department that implements the 3R principle through the waste bank, and the department that has the emergency response mechanism for solid waste disposal. In addition, the country has established and optimized landfills and other infrastructure in more than 190 cities.

In 2001, the solid waste piles in Benowo and Keputih landfills in the urban area of Surabaya reached a record high, with an average of 2,000 tons per day. Due to the strong opposition from the local residents, the Keputih landfill had to be closed, causing a problem that urban solid waste could only be randomly piled up in the streets without effective collection or disposal.

### ▶ IMPLEMENTATION ◀

Against this background, the local municipal government began a community-based solid waste management initiative based on the principle of 3Rs (Reduction, Reuse, and Recycling). The local government set up composting centers and temporary dumps and launched a garbage collection bank program.

In its environmental protection plan, the Surabaya municipal government cooperates with non-governmental organizations and appeals to corporate social responsibility initiatives of the private sector. The campaign started off with the selection of model kampungs (urban villages) and initially introduced environmental-friendly waste disposal methods using readily available technologies. These methods include classifying waste based on the 3R principle, turning waste into compost and energy to power the treatment, and carrying out urban agriculture and waste

treatment.

Waste collection and disposal have been realized through a two-tier structure. At the household level, the waste is transported from each household to a transfer station; at the municipal level, the waste is then moved from the transfer station to the terminal treatment station with the need to charge the public certain fees. In order to improve the efficiency of the transfer station, the Surabaya municipal government worked with the Kitakyushu municipal government (in Fukuoka, Japan) to put a super transfer station into operation. Through this station, the waste is classified and sold to waste collection companies according to the 3R principle. Compared with the traditional waste stations run by the communities, it is faster, more effective and more hygienic to use this type of waste transfer station for waste management.

Public funds are used only for the disposal of major urban wastes. Local environmental protection, execution of the 3R principle, as well as the collection and sale of waste plastics are implemented by the communities and the private sector. Thus no financial support is provided from the municipal budget, and the community-level efforts are the basis for the success of the 3R principle. The Surabaya municipal government mainly undertakes technical and management functions. This is possible because of the very high level of community engagement and ownership.

Since the economic value of waste was recognized, waste stations have been set up in surrounding communities and public and private institutions. These waste stations are mainly engaged in the sale of inorganic waste, which can be used as raw materials for hats, bags, and handicrafts, etc.

As more and more inhabitants of other kampungs want to learn from the successful practice of model villages, the municipal government has further organized environmental sanitation workers and environmental protection cadres to participate in relevant training work. In order to ensure a legal framework, Waste Management Regulations were promulgated through Document No. 21-2016 of the Ministry of Public Works and Housing of the Republic of Indonesia and implemented through the Local Regulations Docu-

ment No. 5-2014.

## RESULTS

There are three major changes after the implementation of the initiative. First, there is a steady increase in public participation - the number of environmental protection cadres in 2015 was 30,240, up 728 from 2014; there were 296 waste stations in normal operation in 2017, representing an additional 76 from 2016, and 15,719 users. Second, the practice itself has become mature through the process from simple collection to organized management and the joint efforts with the private sector. This is reflected in the increase in the average annual income of waste stations from IDR 350,000 to IDR 5 million. Third, measures have been taken to prevent the landfill waste from overflowing (1.571 tons in 2016, up only 6.3% since 2015).

More significantly, the implementation of the 3R principle has improved the quality of life through a clean and healthy lifestyle, including improved air quality index.

The formal index stated in the Sura-



baya Medium-Term Development Plan to assess the implementation results of the 3R principle is the Index of the Quality of the Environment and Waste (IQEW). It measures the weighted average of the solid waste index, water pollution index, air pollution index, and green coverage index. At the end of each fiscal year, the Surabaya municipal government delivers an accountability report on the achievements for the previous year to the public. IQEW in 2017 was 64.86, with an increase of 2.77 from 2016.

## CHALLENGES

Successful environmental protection requires the efforts of both the government and the whole society. Therefore the first strategic move is to communicate with the people, increasing their understanding of environmental issues and gradually engaging them in the resolving issues expeditiously. The acceptance of the people needs to be secured and their priorities need to be matched with existing resources. Promotion, demonstration and cooperation with non-governmental and

community organizations are key aspects of the process. With the gradual increase in waste landfill volume in Surabaya, extensive attention has been attached to waste-related problems, including highlighting the dangers such as flooding and spread of diseases. This has been accompanied by introducing larger-scale and more innovative methods, especially the establishment of community management models that encourage more residents to participate.

## INNOVATION

The practice of this project can be described as evolutionary based on the final results, the evaluation results as well as new challenges. The 3R principle was developed based on previous experience in waste management. Before the adoption of 3R, waste was just a pile of unused goods without any added value. However, after the roll out of the 3R principle, waste becomes valuable both economically and environmentally as it is turned into compost and used to generate power. Moreover, the initiative focuses on environmental education and awareness, encouraging residents to take an active part in environmental protection. A rather unique practice adopted by Surabaya is that of allowing commuters to pay for their bus rides with plastic bottles while at the same time raising awareness of the need to reduce the use of plastics. In terms of the use of new technology, Surabaya is using the *Hermetia illucens* for organic waste disposal. This technology uses the larvae of the black soldier fly to convert organic waste directly into animal protein that can be safely used for animal feed, especially for fisheries.

All of these innovations require multiple stakeholder involvement and engagement and public-private-community partnerships. The municipal government mainly plays a planning and coordination role, delegating research, implementation, monitoring and evaluation to a wide range of civil society groups and service providers including students, academic and research institutions, women's groups, non-governmental organizations, waste collection companies and plastic waste recycling factories. The initiative has created new employment and business opportuni-



ties for both the informal and formal sectors of the economy.

## LESSONS LEARNED

The main lesson learned from the Surabaya 3R initiative is the leadership, management and coordination role undertaken by the municipal government. As mentioned above, the municipality did not have a large budget to deal with a solid waste management crisis. What it did do was to mobilize all social and institutional actors and started a movement. The most important R in the 3Rs is waste reduction, without which the other two Rs will always be playing catch up. Waste reduction can only be successful if the community gets involved and each household separates waste at source and makes conscientious efforts to reduce waste. This was achieved in Surabaya through awareness building, civic education and relentless campaigning by the mayor and her entire team.

The remaining two Rs – reuse and recycle – required partnerships with different economic actors including transport companies, waste collectors, factories that can use waste as raw material, energy companies and users of compost. Here, partnerships were essential for choosing the right technology, from low-tech to medium-tech and to one of the world's newest and latest methods of converting organic matter into animal protein. The practice of allowing people to pay for bus rides with plastic bottles has helped mobilize people, old

and young and from all walks of life, and has served as a very effective awareness raising approach. It furthermore creates an unlikely link between waste and mobility. It is hoped that eventually the use of plastic bottles will also decline.

It is clear that the success of this initiative is to a large extent due to the very high level of community engagement. This was driven by a committed and focused and municipal government, with an appropriate governance system.

Many cities and regions have since come to Surabaya to learn about this exemplary case and transformation story. It stands out due to the fact that it is multi-faceted, involves multiple stakeholders and jurisdictions, is people led and technology supported, and not least takes a systems approach that considers simultaneously the social, economic, environmental, technological and governance dimensions of development. For this reason, the Surabaya 3R initiative is addressing many SDGs at the same time and in a mutually supporting manner. In this respect, Surabaya is redefining the concept of smart city.

**The initiative addresses SDG Goals:**

Goal 3: Good Health and well-being

Goal 9: Industry, innovation and industry

Goal 11: Sustainable Cities and Communities – especially on environmental impact of cities; and risk reduction; as well as many aspects of other MDGs

Goal 17: Partnership for the goals

 Guadalajara, Mexico

## Citizen-led Metropolitan Coordination Mechanism



Guadalajara Metropolitan Area (GMA) is located in the State of Jalisco and includes nine municipalities of different levels. It is also the second-largest metropolitan area in Mexico and is known as the “Silicon Valley” of the country.

The GMA has experienced exponential growth. It has exceeded all limits without a comprehensive plan governing its expansion, pushing the GMA’s economy and society into physical and functional fragmentation.

Against this background, the GMA decided to take the initiative and reform its scheme of planning and with the aim of assembling the three metropolitan bodies for integrated planning. The three bodies are: the Metropolitan Citizens Council, the Metropolitan Coordination Board and the Institute of Metropolitan Planning (IMEPLAN). With citizens’ participatory coordination and governance, the administration of the GMA has been significantly improved. It is this innovative practice that makes Guadalajara one of the fifteen shortlisted cities in the 2018 Guangzhou International Award for Urban Innovation.



### ▶ BACKGROUND ◀

The GMA has experienced exponential growth. It has exceeded all limits without a comprehensive plan governing its expansion. There has been a strong movement of the population towards the periphery, leaving empty and uninhabited centers, with poor infrastructure planning, reduced economic opportunities and poor public services including transport. Social alienation has also resulted in high rates of vandalism along with serious pollution and lack of green spaces. Individual municipal government bodies cannot solve such problems, which would inevitably affect the GMA’s neighboring jurisdictions. Thus the GMA decided to take the initiative and reform its scheme of planning and view the problems from a metropolitan point of view instead of an individual municipal one.

The Metropolitan Coordination Act for the State of Jalisco (the Coordination Act

for short) has offered a practical basis for the implementation of the Metropolitan Coordination Board and the Institute of Metropolitan Planning (IMEPLAN). The Coordination Act establishes the mandate of the metropolitan scheme to generate tools for city-wide planning. The instruments generated through the IMEPLAN include the Project Bank, the Metropolitan Development Program and the Metropolitan Plan of Land Use, among others. These instruments use various methodologies and indicators to promote the application of the sustainable development goals at the local government level and the implementation of strategies of the International Labor Organization and the Economic Commission of Latin America.

### ▶ IMPLEMENTATION ◀

#### 1. Operational mode

Through the cooperation with nine metropolitan municipalities and the state

government, Guadalajara has achieved an unprecedented level of coordination. A new governance structure has been established – the Board of Metropolitan Government, which acts as a comprehensive entity responsible for regional development planning. Its mandate is to guide regional development through multi-stakeholder, multi-jurisdictional consultations and democracy. Citizens can contribute to decision-making through the Metropolitan Citizens Council. The core of the initiative is the commitment to involve citizens, experts, and municipalities in a participatory planning process through collaborative roundtables, workshops, education and training. The system encourages all concerned social and institutional actors to imagine, innovate, and plan at a metropolitan scale and to envision the city they wish to live in. The initiative was officially launched in 2012, after the implementation of the Coordination Act, and came into effect in 2014.

The citizen-led metropolitan coordination mechanism of Guadalajara was formed by the three metropolitan bodies: the Metropolitan Citizens Council, the Metropolitan Coordination Board, and the IMEPLAN. This scheme and planning initiative was formalized into an institute called the IMEPLAN, the first one of its kind in the history of Guadalajara, and Mexico.

2. Roles of different tiers of governments

Mexico is a federal system and by national law, all three tiers of government (municipal, state and federal government) are required to have a Development Plan. The plans are renewed every time there is a new political administration, as constitutionally mandated, with no obligation to make use of or align with previous plans. Therefore, every six years for State and federal governments and every three years for municipalities (in the case of Jalisco State), a new plan with limited continuity from the previous plans is enacted. The development plan defines the strategic goals for the administration and ideally should build on the past, but in reality, the plan becomes the “personal seal” of the newly elected political leader. A recent change in the Federal Constitution may result in less frequent changes as re-election will be allowed at the municipal level for a second contiguous term. This might have some influence on the practice of local-level planning, coordination and continuity.

By law, all municipalities must have an Urban Plan, meaning they must produce “partial urban development plans” that define in detail the land use for each of the areas of the municipality, among other issues regarding urban development. Land use is managed between the Urban Development Council, presided by the Mayor, and the correspondent policy domain department. The supposed scope is more than six years but the effectively used one is three years as the governments change. The responsibility of land use is ultimately held by the City Council, but the administrative offices have high technical influence in the decisions.

Mobility and urban planning dockets are located in separated departments, respectively at the state and municipal levels, with no formal arrangements to coordinate them except the dialogue between

Governors and Mayors’ offices, which can be effective or erratic depending on political alignment, or lack thereof.

3. Key characteristics of the initiative

The core of the initiative is involvement of citizens, experts, and municipalities in the participatory planning process through collaborative roundtables, workshops, education and training, encouraging all social and institutional actors to innovate, plan at a metropolitan scale and envision the city they wish to live in. This has changed the phenomena where the governance of the GMA was heavily dependent on traditional upper echelons of political power. More importantly, it has engaged citizens in their respective regions and enabled them to participate in decision-making through transparent and democratic processes. Thus the situation where bureaucrats would conduct “closed-door decision-making” has changed completely.

▶ OUTCOMES ◀

The Metropolitan Coordination Scheme aims to develop a close, compact, connected and equitable city by achieving a polycentric urban model. Public services will be managed by metropolitan agencies



that will work with the collaboration of the local governments under the topics defined in the metropolitan agenda.

The Metropolitan Coordination Scheme seeks to identify and define the real needs of citizens, as they emerge through the participatory planning process. The Metropolitan Plan of Land Use, on the other hand, defines the criteria to be used in planning urban development so as to avoid the chaotic development of the past. The choice of a polycentric city model by the Metropolitan Plan in GMA, which is also called POTmet, was made to control and prevent urban sprawl, consolidate the urban area and reduce the negative impacts caused by chaotic development.

Finally, all processes and information that IMEPLAN sets forth are available to the public for consultation and monitoring. Moreover, IMEPLAN takes on efforts to involve the public in training and consultation, enabling people to participate effectively in the decision-making process at the metropolitan level.

▶ CHALLENGES ◀

The challenges to be addressed in order to carry forward the initiative are as follows:

First, the budget to ensure sustainability: Although the GMA members’ finan-

cial autonomy rate (ratio of the self-owned income and the total income) ranks second and the collected property taxes ranks sixth in Mexico, four municipalities of the top 20 local governments with the highest debts and liabilities are also in this region. The high level of liabilities results in restricted financial support for the initiative.

Another key challenge is the chaotic way infrastructure, including roads and viaducts, was designed and built in the past. This leaves a considerable negative legacy in terms of poor landscaping, loss of green space and environmental degradation. These challenges can only be overcome in the long term and whereas consensus is not so difficult to reach for short-term common priorities, consensus is much harder to reach on long-term actions. This will require considerable education and training and continuous dialogue between experts and the various social actors.

▶ HIGHLIGHTS ◀

The Metropolitan Coordination Scheme in Guadalajara is the only one of its kind founded by non-governmental organizations. The Metropolitan Citizen Council, the Metropolitan Coordination Board, and the IMEPLAN have formed the citizen-led metropolitan coordination mechanism. Under this mechanism, the IMEPLAN enjoys greater power. The IMEPLAN is an inter-municipal decentralized public body, with legal status, its own assets, and benefits from technical and managerial autonomy in the exercise of its power. The innovation of this project lies in that the professional ability of the IMEPLAN has been greatly enhanced especially in the following areas:

(i) The IMEPLAN promotes effective metropolitan management through evaluation of the provision of public services and municipal functions in the metropolitan area of GMA, and the analysis and recommendations needed for their convergence. The IMEPLAN is a critical element in the implementation process of decentralized planning with a long term and perspective and using a holistic approach to development planning, land-use planning, risk management and the systematization of the metropolitan information.

(ii) In addition, IMEPLAN is recog-

nized as a professional, efficient and effective organization in fulfilling its responsibilities as the technical entity responsible for coordinating metropolitan planning. Insulating strategic plans and actions from short-term politics through participatory processes and multi-stakeholder engagement will enable the GMA to engage in a more systemic and systematic approach to urban development and to keep people’s needs and priorities for improved quality of life at the center of future development.

▶ LESSONS ◀

This initiative is exemplary in many ways. First, it represents a major innovation in metropolitan governance. It is multi-stakeholder and multi-jurisdictional by design and puts long-term and strategic planning decisions in the hands of specialized institutions and the people. While decision-making by consensus has inherent risks in that the decisions taken may represent the lowest common denominator, the initiative is also expert and evidence driven with a heavy focus on awareness building, education and training.

The GMA has also taken important steps in building a coordination scheme that is citizen driven and based on the Law on Metropolitan Coordination. The latter clearly defines the roles, responsibilities



and powers of three metropolitan bodies that make up the coordination scheme: the Metropolitan Citizen Council, the Metropolitan Coordination Board, and the IMEPLAN. The IMEPLAN, which is the basis of the scheme, is the result of the work of organizations of local civil society that promoted the existence of a metropolitan agenda and the demand for metropolitan coordination.

The key to the GMA participatory governance model is the judicious combination of specialized institutions guiding and informing the planning and decision making process and guiding decision-making organizations led by civil society and social actors.

This set up is a radical departure from past practice of “closed-door decision-making”. Most importantly, the consultative governance system is now enshrined in law, ensuring sustainability.

▶ SDG ADDRESSED ◀

The initiative addresses all the targets of Goal 11: Sustainable Cities and communities, especially Target 3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

 Utrecht, Netherlands

## Localizing the SDGs Through Multi-Stakeholder Partnerships



Situated in the centre of the Netherlands, 35 kilometres from Amsterdam, Utrecht is the fourth largest city in the Netherlands, and also one of the most multi-cultural. In 2019, the population stood at 353,000 inhabitants, drawn from 169 nationalities. It is also the country's fastest growing city with the population expected to rise to 400,000 inhabitants by 2024.

Utrecht University is the largest and best in the country, coming in at number 49 in the Shanghai Ranking in 2018. The city's large student population has helped the municipality in its vision for a modern, green, technology-driven city "with a human touch". The university courses have a strong focus on the life sciences and technology, including climate change and sustainable development.

The university is also a major employer as well as the subsidiary businesses

that connect to it. With a buoyant economy, there were 262,000 jobs in 2018, of which 39,000 in health care. Banking is also a significant employer and Utrecht has a significant student population. The Royal Netherlands Meteorological Institute, the Dutch national weather service is also based in the city.

The city is also a major transport hub for a large part of northern Europe. Because of its central location in the Netherlands, Utrecht Central is the most important railway hub in the country with more than 1,000 departures per day and 194,000 embarking and disembarking passengers, excluding transfers.

Utrecht is also one of Holland's greenest cities with an estimated one tree for every inhabitant, criss-crossed by canals and a beautiful medieval centre.

### ▶ BACKGROUND ◀

The municipality found in the SDGs an opportunity to take advantage of a global agenda to make its own city cleaner, greener and healthier, whilst also maintaining an internationalist approach to its

own urbanization challenges.

Utrecht already had a track record of commitment to United Nations-set targets for sustainable development and global poverty reduction through its commitment to the Millennium Development Goals and the eight targets aimed at reducing poverty and poverty-related diseases that ran from 2000 to 2015.

Civil society involvement proved crucial in activating fair-trade campaigns and in a twin city project with Leon in Nicaragua. The two cities had been officially twinned in 1986, a process largely driven by Desirée van de Ven, a strategic advisor of strategy and public affairs at the municipality.

Recognized by UN-HABITAT as demonstrating best practice for local government cooperation, the partnership with the city of Leon has benefitted both parties through knowledge-exchange and capacity building, as well as gains in sustainable economic and urban development, including a reforestation campaign started in 2009 in Leon. So far, over one million trees have been planted in partnership with international investors including raising funds through the search engine ECO-





SIA that uses its profits to plant trees. The world's first fair trade coffee company Max Havelaar has its headquarters in the city.

When, in 2015 the United Nations adopted 17 global Sustainable Development Goals (SDGs) an international blueprint to achieve a more sustainable future by the year 2030, Utrecht seized on the opportunity to incorporate the goals into its own urban planning strategy for the rapidly expanding metropolis and declared Utrecht a "Global Goals City" in April 2016. The idea was to use the targets set by the UN to serve as a sustainability focus for local development and also as a means to connect local initiatives with international development in the global south. In doing so, Utrecht has become something of an environmental and sustainable trailblazer in Europe along with other cities such as Malmo in Sweden and Bonn in Germany.

The Utrecht municipality saw its role as translator of a complex abstract framework into a practical strategy that would actually change the lifestyle choices, behaviour and consumption patterns of a wide range of stakeholders. In order to see if the strategy works, the municipality is also developing local SDG indicators to measure and track its own SDG performance. The process has been helped by the constant involvement of the city's mayor, Jan van Zanen, who is a centre-right politician with the support of the elected

left/green administration.

Separate, but related to the SDGs, the city also had a number of other progressive policies in place, such as regulations to protect green spaces, making people aware of the negative consequences of paving gardens, and providing a balanced housing market in the struggle against segregation by class and ethnicity. A fundamental part of the planning requirements for new building sites is space for bikes, and connectivity to public transport. The city also has a 2050 target to take all houses off the gas grid for heating to be replaced by renewable energy.

By 2020, at least ten percent of the city's roofs will be equipped with 37 megawatts of solar power. Currently, five percent of the city's roof space is installed with 17 megawatt PV systems. This is equivalent to almost 120 kilowatts per 1,000 inhabitants, the highest in the Netherlands.

Regarding the challenge of mainstreaming the UN SDGs, the first step was to understand which existing municipal policies were already aligned to the goals, starting with procurement. Then began the enormous task of looking at all the other policies on every single topic that council has in place and finding out what already existed where there was a connection to the SDGs, creating a dashboard and analysing where the city was doing well and the areas where there was room for im-

provement.

The city found it was already quite well advanced in areas such as clean energy, quality education and health, but the SDG framework enabled it to show the connection between the council's policies and creating a more sustainable world, beyond the city and country. The exercise also showed the areas in which the municipality could take future action, including a faster energy transition, improving the quality of work and reducing economic and social inequalities. It also enabled policy-makers to get a better view of how different policies impact on each other.

Health was already a special focus for Utrecht, even before the UN SDGs were adopted. The city had been seeking ways to gain a distinct identity as a healthy city – in comparison to for example, Rotterdam's reputation as the port city, the Hague as the political capital and Amsterdam as the tourism and economic centre.

### ▶ RAISING PUBLIC AWARENESS AND CITIZEN'S INVOLVEMENT ◀

Compared to most cities in the world, Utrecht was able to benefit from a general appreciation of the need for sustainability and health living, as well as a long tradition of cycling in the almost entirely flat country lined with canals. Part of the reason for adopting the global goals initiative was to further increase awareness of the SDGs and show people how they impact their own lives as well as impacting the lives of those in other countries.

The municipality's international affairs unit then decided to fund an NGO, Utrecht4Goals, with a colourful U logo, and campaigns to educate people in plain simple language. One such campaign used the slogan "all the SDGs are in your jeans" looking at the social and environmental implications of the production and transport costs of the basic piece of clothing. The NGO also strove to make social actions "hip" with young people. It has initiated annual Whole Utrecht "U" awards (Heel Utrecht U Awards) for civil society actions and businesses, and there is even a global goals walkway in the centre with a ceramic mosaic picture of each one inserted into the pavement. In 2017, 28 percent of the city's population said they had heard of

the SDGs and the city plans to double that percentage in the coming years.

In 2021, Utrecht will host the start of the 75th edition of the Spanish cycling race the Vuelta a Espana, following on from its successful 2015 "grand depart" of the 2015 Tour de France and the 2010 Giro d'Italia. It has organised this competition to have minimum environmental impact and will promote the SDGs to the world.

The city has also made use of its municipal mascot, Miffy, a female cartoon rabbit, the character of a series of popular children's books from the 1950s written by a local writer.

In collaboration with the NGO ANNE (All Netherlands to New Energy), and a number of local businesses including Rabobank, an important Dutch bank headquartered in the city, Utrecht built Het Rabo Groen Huis, a fully-sustainable building with a timber frame that showcases and promotes sustainable living. Another partner in the project is Sustainer Homes that designs and builds homes that consume almost no energy. The project won the 2017 "U" award.

### ▶ DEVELOPING THE CITY CENTRE ◀

Utrecht's refurbishment of the station area, part of the new city centre, on both sides of the railway tracks of the main central station, adjacent to the old city, has been a focal point for driving change in the city. Old photographs show a typical traffic-filled station area and asphalt roads packed with cars. Today there is hardly a car to be seen. In a country famous for its bicycles, the city is proud to be host to the biggest cycle park in the world, neatly stacked underground, controlled by digital passes, containing up to 12,000 bikes at any one time with total station bike parking facilities of 22,000.

The roofs of the station itself and surrounding buildings are clad with solar panels, while the new white town hall is an almost 100 percent carbon-neutral building.

The transformation plan was carried out following a popular referendum that gave voters a choice of either a widespread development through the entire station area or a focused development on a particular line through the area after nearly 20 years of political discussions.

Both plans involved restoring an old canal that had been covered over for a road and developing the station area, but the latter also included a new shopping mall and improving the connectivity of public transport with cyclists in a city where more than half of workers now travel by bike for at least the last part of their journey.

Over the past year, 300 "bee-friendly" bus stops were rolled out, with green roofs covered by plants popular with pollinating insects. The Austrian city of Vienna is now following in Utrecht's footsteps and Munich in Germany also considering doing the same.

### ▶ INVOLVING LOCAL BUSINESSES IN THE SDGs ◀

In cooperation with the Utrecht Economic Board, the process was started by a series of economic and knowledge education workshop where business owners could learn about the SDGs, see active case studies from businesses that have successfully used them as a template, and gain guidance on how to apply the SDGs to their own business. Many of these participating businesses were initially sceptical because they thought they had to adhere to all 17 but learnt that they could start by focusing on just a few that were directly relevant to their business. Issues range from whether or not to provide employees with electric bikes, to serving fair trade coffee or adopting an international development project with employees.

A few minutes from the central station, an old building which had been on the point of demolition, has been restored to create the innovative Social Impact Factory, a bustling business support centre that aims to spur social enterprise creation and embed more socially responsible behaviour in businesses. The centre hosts a number of meeting spaces that large companies are able to book, the fees helping to sustain the other activities. Examples of initiatives include the Dutch airline KLM's initiative to recycle staff uniforms into a new material that can be used to clad walls, for seating or for bags. There is also a small shop selling sustainable products made by local companies.

The Factory has an online market-

place, called Social Impact Market for traditional companies willing to purchase social products or services from social enterprises. The Factory organizes a six-month program connecting diverse stakeholders around a specific social challenge submitted by the municipality. The objective is to design solutions in an entrepreneurial way as well as engage in communication, research and lobbying efforts to accelerate change towards a society where doing business fairly, sustainably and inclusively becomes the standard.

The Netherlands is a nation of innovators, and Utrecht, which boasts of 20 Nobel Prize Winners is also leading the way in solar driven cars that also provide energy for homes in the old working-class district of Lombok. The Dutch King Willem-Alexander attended the launch in March 2019 of the durable energy and mobility ecosystem developed by Robin Berg, founder of We Drive Solar. In a partnership with Renault, the system deploys shared electric Renault ZOE cars and charging stations, enabling the Renault ZOE to both charge and discharge energy.

This innovation turns the car into a battery on wheels which can store solar energy and later discharge unused energy to the electricity grid. This enables a more efficient use of sustainable solar and wind energy. The bidirectional technology will also make recharging cheaper for customers.

We Drive Solar is part of LomboXNet started by Berg. The young company, in close collaboration with the local grid operator, built its own microgrid and in June 2015 installed the world's first bidirectional public charging station powered by solar power.

Berg says for every shared car, five privately owned cars disappear, not only reducing emissions but also freeing up space in a fast-growing city.

The goal is to equip all roofs in the area with photovoltaic systems and to integrate the batteries of the electric cars as energy storage systems, so as to make Lombok more energy self-sufficient. Berg believes if the company can use all available roofs, the district could achieve 60% of energy self-sufficiency. For existing buildings, this would require 20 solar modules with a capacity of 250 to 270 watts per household, with new buildings having

up to 40 solar panels per household. The aim is also the extensive renunciation of private cars in the district, the construction of a network of 200 solar charging stations and 200 e-car sharing vehicles with fixed parking spaces and the further promotion of cycling and public transport. An important concern for Berg is to contribute to grid stability through bidirectional and intelligent charging. The partner in the charging station management is the service provider Elaad NL, a joint venture of several Dutch network operators, including Tennet.

▶ CULTURE ◀

Culture and heritage are an integral part of SDG11 that seeks to make cities inclusive, safe, resilient and sustainable. The municipality's support of the Jongerius Villa, a beautifully restored art deco villa and car factory, now used as a restaurant and conference centre is a case in point.

The buildings were built in the 1930s by the gardener-turned-entrepreneur Jan Jongerius who opened Utrecht's first petrol pump and eventually built a car factory, now part of the site. During the Second World War it was occupied by the Germans, and then bombed by the British. It laid derelict for years before a family foundation helped to rebuild and restore it.

▶ IMPACT ASSESSMENT ◀

One of the biggest tasks the municipality is facing is developing a methodology to assess more deeply the impact of the global goals on the city and its stakeholders. To this end Utrecht is committed to open communication, a continuous learning cycle, and collaboration. Utrecht sees itself as a facilitator rather than an imposing leader, and this has successfully boosted buy-in and co-ownership, resulting in positive action and impact. To map and track the municipality's own SDG performance, the departments of international affairs and research started developing local SDG indicators. To show the connection between the SDGs and local policies, existing local indicators were linked to the SDG targets and UN indicator framework. By rearranging existing data on for exam-



ple, public health and energy, according to the SDGs, municipal departments are stimulated to recognise the interconnections and consider the broader impact of local policies.

The municipality developed the Global Goals Dashboard to present local SDG-related data in a user-friendly way. This tool enables the user to make connections between various data points and policy areas, and by establishing a baseline, to see where progress is being made. This tool gives municipal employees a clearer view of how their own work relates to the SDGs, and how the SDGs link their work to that of their colleagues. Its purpose is to challenge the siloed model of policy- and decision-making by offering an integrated framework through which to view and implement Utrecht's strategies and activities. Connected to this is the challenge to develop new working methods to enable different municipal departments to collaborate effectively on intersectional issues such as climate change and social inclusion.

The first version of the dashboard will be published in May 2020. Over the next few years, Utrecht will continue to develop the dashboard aligned with the Association of Dutch Municipalities. Utrecht already publishes several monitors annu-

ally or bi-annually, ranging from a Public Health Monitor to a Sustainability Report, to inform stakeholders about what is happening in these areas.

This initiative also demonstrates that localizing the SDGs can help cities to improve what they are already doing. This is through the necessary inter-sectoral communication and collaboration and improved understanding of the linkages between different issues related to sustainable development. SDGs can also be used to mobilize organized civil society, the business community and citizens in general to understand their contribution to the sustainability problem (including an appreciation of the city's environmental footprint) and the possible solutions. Utrecht is also open to cooperating and sharing knowledge with other cities and regions working on similar tools.

SDG Addressed:

- Goal 1: End poverty in all of its forms
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3: Ensure healthy lives and promote well-being for all ages
- Goal 4: Ensure inclusive and equitable education and promote life-long 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 impacts

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, and halt and reverse land degradation and halt biodiversity loss

Goal 16: Promote peaceful and inclusive societies for sustainable development

ment, provide access to justice for all and build effective, accountable and inclusive institutions for all

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development





 New York, United States

# GLOBAL VISION URBAN ACTION

## New York City's Voluntary Local Review of the Sustainable Development Goals



New York City (NYC), located along the Atlantic coast, is the largest city and port in the United States. NYC's Global Vision | Urban Action (GVUA) aims to focus on the growth, sustainability and resilience of the city and to highlight the issues concerning equality behind all Sustainable

Development Goals (SDGs). In July 2018, as part of GVUA, NYC became the first city in the world to submit a Voluntary Local Review (VLR) to the United Nations (UN), reporting on the local implementation of SDGs.

In its pursuit of "building a strong and

fair city by 2050" (OneNYC), the city has put forward four visions of urban development to become a "growing, thriving city", a "just and equitable city", a "sustainable city", and a "resilient city," thus consolidating NYC's leading position among global cities.



### ▶ BACKGROUND ◀

In September 2015, world leaders gathered at the United Nations to commit to 17 goals to end extreme poverty, eliminate inequality and injustice, and prevent the damaging effects of climate change by 2030. These goals are called the Sustainable Development Goals (SDGs), or Global Goals.

Since 2015, based on OneNYC (New York City's Plan for Sustainable Urban

Development), NYC has been localizing the SDGs. Through GVUA, the NYC Mayor's Office for International Affairs (IA) has identified the synergies between the 2030 Agenda and NYC's strategy, and employs the SDGs as a framework to discuss NYC's innovations and challenges in sustainability with cities and countries around the world.

In May 2018, NYC announced a VLR, an initiative implemented by the Mayor's Office of International Affairs to launch GVUA, with the following specific objec-

tives:

1. Report directly to the UN on their efforts to achieve the SDGs;
2. Lift 800,000 New Yorkers out of poverty;
3. Increase access to nutritious, high quality and low price food and ensure that the groups most affected by climate change (usually the most vulnerable New Yorkers) are protected;
4. Create opportunities to share NYC's experience beyond borders.

## IMPLEMENTATION PROCESS

In December 2015, the Mayor's Office for International Affairs launched GVUA, which takes the SDGs as the framework to communicate globally about shared challenges and innovative local solutions as well as to share best practices.

**Cooperation:** the VLR was developed by the IA in partnership with the NYC Mayor's Office of Operations and Office of Climate Policy and Programs, and was conceived, implemented and prepared in consultation with other relevant agencies in NYC. The review was further shaped in consultation with SDG stakeholders (including UN agencies, UN member states that have submitted VNRs, and representatives of city organizations) as well as government and civil society experts involved in the development, implementation, and supervision of the SDGs.

**Publicity:** NYC mapped the SDGs onto the OneNYC strategy in 2016. Taking the mapping as the basis for formulating related projects, it then published two booklets entitled A City with Global Goals Part I and Part II.

**Resources:** the entire initiative was undertaken within the existing resource allocations for the OneNYC strategy; with the city's personnel taking on GVUA responsibilities alongside their other roles.

**Management:** GVUA is specifically in the charge of a strategic relationship manager, with field visits conducted by NYC officials from time-to-time during office hours.

**External liaison:** NYC invited diplomatic missions from all over the world to visit communities around the City's five administrative divisions, so that they could better understand how NYC is implementing the SDGs at the local level and discuss the challenges they face together.

**Activities:** The IA has carried out a series of field visits in partnership with relevant city agencies, to highlight implementation of different SDGs. In July 2018, several organizations embarking on reviewing the SDGs visited a recycling facility - illustrating implementation of SDG 12 (Ensure sustainable consumption and production patterns); they also boarded a sludge boat for better understanding SDG 6 (Ensure availability and sustainable management

of water and sanitation for all); they visited the community gardens for SDG 15 (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss). During these visits, the NYC organizations also focused on how to combine and leverage their work with other SDGs.

In April 2019, NYC released the OneNYC 2050 strategic plan to fulfil its role as host to the United Nations and the world's largest diplomatic community and organized field trips and conducting policy

discussions with the UN community.

## RESULTS

The effectiveness of the NYC GVUA program can be measured by qualitative and quantitative indicators.

In terms of internal coordination, NYC has worked with more than 20 departments and organizations to organize 17 events, group discussions and field trips for the UN diplomatic community since the roll-out of the GVUA program. At the UN High-level Political Forum held



in July 2018, nearly 20 NYC representatives shared with others their expertise in a bilateral meetings and other exchange activities. NYC also participated in the voluntary national review breakfast meeting hosted by the United Nations Department for Economic and Social Affairs (DESA) and listened to the opinions of the administrations on the voluntary national reviews.

In terms of urban exchanges and collaboration, NYC representatives shared their experience in the NYC voluntary local review at the Guangzhou International Award for Urban Innovation Ceremony in December 2018 and the SDG Global Festival of Action in Bonn in May 2019. Briefings from other cities and stakeholders were also conducted via teleconference. Urban organizations such as the United Cities and Local Governments (UCLG) and the Local Governments for Sustainability (ICLEI) have called for deeper involvement in the activities related to this topic. Other groups, such as the UN SDSN Organization and the Brookings Institution, have also expressed their commitment to supporting the engagement of cities.

As far as external partners are concerned, NYC's endeavor to implement sustainable urban development has been recognized by the UN Secretary-General, UN Under-Secretary-General, Administrator of the United Nations Development Programme (UNDP), Executive Director of the UN-Habitat and many other UN high-level representatives. The NYC civil society groups regularly invite stakeholders to demonstrate what has been done and call for increased cooperation between all stakeholders. The United Nations Foundation and other organizations have identified NYC's voluntary review report as a noteworthy trend.

In May 2019, NYC was named a finalist for the UN SDG Action Award. In addition, DESA has designated VLR as an "excellent practice" for its SDG knowledge platform.

## CHALLENGES

One of the challenges facing the GVUA program lies in the time allocation of relevant staff. The staff of relevant departments in NYC have time constraints as far as undertaking other obligations

beyond their scope of responsibilities, so efforts need to be made to ensure that the GVUA activities complement those organized by the existing departments in NYC, so as to avoid additional burdens on the relevant staff. To address this problem, NYC and colleagues from other departments have taken the initiative to join the ongoing GVUA program to design activities and actions in a coordinated manner.

Additionally, due to the unavailability of travel budgets for NYC, the staff of the NYC Mayor's Office seldom have the opportunity to participate in the relevant activities outside NYC. It makes it difficult for NYC to establish ties with other cities that are also committed to their own localization practices for SDGs. To solve this problem, NYC makes use of its substantial social media resources and conducts extensive promotion to ensure that its work has been effectively publicized via media so that other cities can understand what NYC is trying to achieve

## HIGHLIGHTS

In the past, the city-level units have rarely communicated with the United Nations in respect to Global Goals. The difference, however, is that for the SDGs, it is readily acknowledged by a wide range of stakeholders, researchers and academics, that more than two-thirds of the SDGs will require action at the local level. Indeed, a cursory analysis of goals and targets including health, education, safety, social inclusion, gender equality, access to water, sanitation, transport, and others can only be meaningfully achieved at city or community levels.

This has led all of the major city associations, United Cities and Local Government (UCLG), Mtopolis, ICLEI and C40 to request their members to undertake VLRs.

NYC's initiative has shown that urban sustainability requires cross-disciplinary innovation and city-to-city exchanges and cooperation. Cities and regions have much to learn from each other as the issues and challenges they face are very similar.

NYC's contribution to the attainment of the Global Goals is also exemplary at another level. NYC has shown to cities and regions worldwide, and to the international community, that an important step towards

the local implementation of the SDGs is to map out what a city or region is already doing and to see where action is already being taken and what are the areas that need further effort. NYC has shown that implementing the SDGs is not just another "unfunded mandate", that the SDGs are a useful tool and template for cities to adjust existing policies and strategies.

## INNOVATION AND LESSONS (BEING LEARNED)

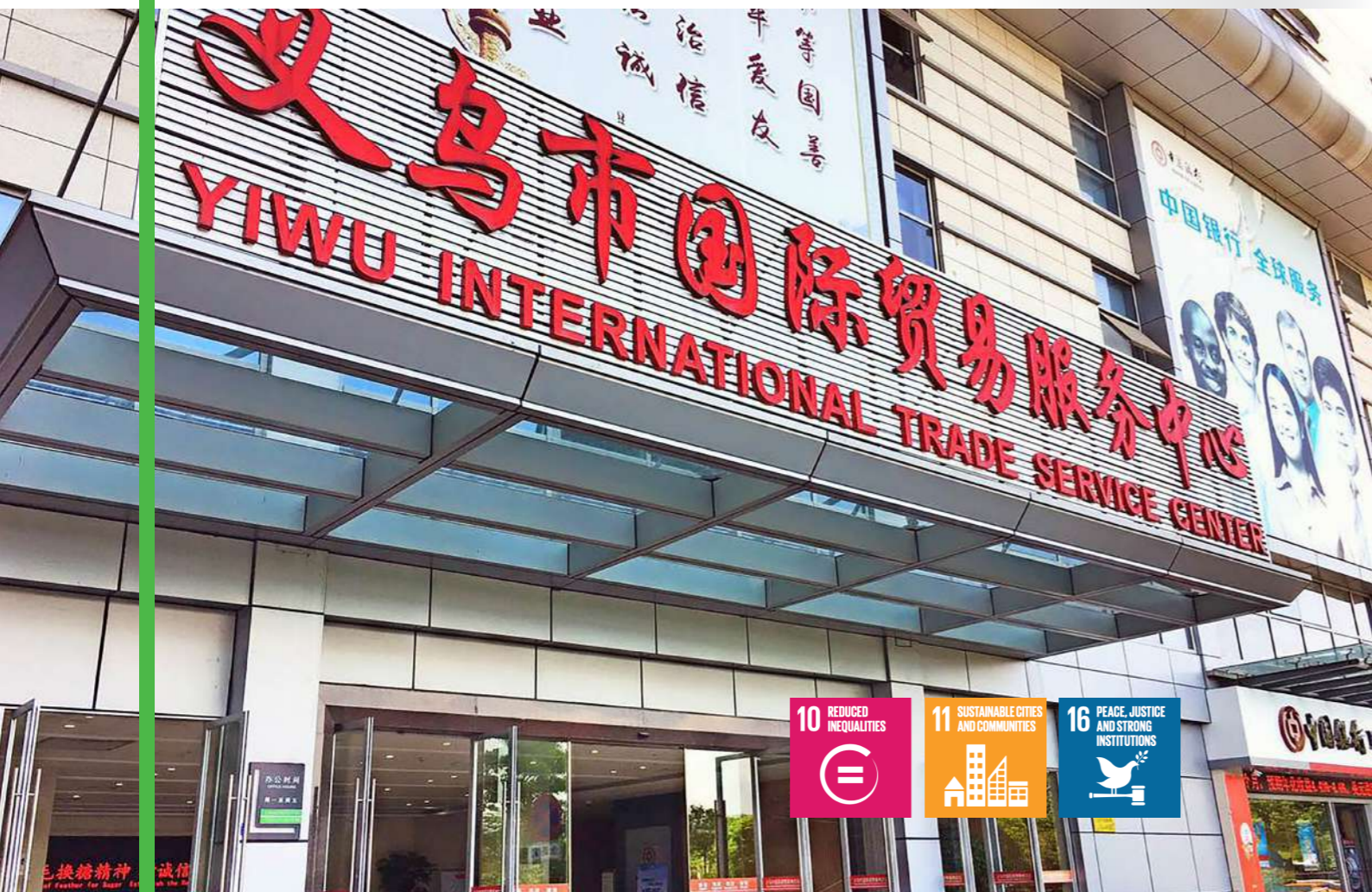
The Global Vision | Urban Action program has made NYC a pioneer at the city level in terms of direct submission of a Voluntary Local Review to the United Nations. It innovatively links the vision of NYC with the UN SDGs and localizes the goals. The move has promoted coordinated actions of agencies at all levels of the NYC Government and strengthened ties among cities and between local authorities and international organizations. It is an exemplary practice worth being expanded or replicated. NYC has recognized the potential for global learning and exchange on city issues, challenges and innovations using the SDGs as a common language and point of departure. This initiative demonstrates that localizing the SDGs can help cities to improve what they are already doing. New York City was formulating and using development and performance indicators long before the SDGs. The current initiative of localizing the SDGs can be used to validate what the city has been doing as well as improve on the future.

Since the implementation and promotion of the program, many cities have sent their representatives to NYC for exchange and learning and to share development strategies. NYC has definitely set a trend and a movement that is raising global awareness of the role of local authorities and communities in achieving sustainable development at the global level.

The initiative addresses all 17 of the SDGs and reinforces the importance of city-level data. By reporting to the United Nations, NYC is also highlighting the importance of cities and city government in the global sustainable development agenda.

 Yiwu, China

## INNOVATING FOREIGN SERVICE INITIATIVES TO BUILD A HARMONIOUS AND INTEGRATED YIWU



Located in Zhejiang Province, China, about 300 kilometers away from Shanghai, Yiwu, a city of 1.2 million inhabitants, is famous for producing and wholesaling artisanal products such as jewelry, ornaments, toys as well as household appliances. According to historical records, the earliest wholesale market in Yiwu dates back to the 18th century. For centuries, Yiwu has played an increasingly important role in China's entrepreneurial and trade development. In 1995 Yiwu was identified as a national comprehensive reform pilot county (city), the only one in Zhejiang Province. By 2004 and 2005, Yiwu was

rated by the United Nations, the World Bank and Morgan Stanley as "the most favourite Chinese cities of domestic and foreign public" and "the largest small commodity wholesale market in the world". In 2011, Yiwu was approved as a pilot city for China's international trade reform.

With the development of international trade, Yiwu is becoming more and more international. Over the past 17 years, the population, including foreign visitors and residents, has increased by 240%. Yiwu has been particularly concerned about the groups of foreigners who have come to do business in and who have already lived in

Yiwu. To this end, it has made a series of commitments to deepen service provision for foreign traders and expatriates and to create a good business and living environment and a sense of shared prosperity for all.

In September 2018, Yiwu announced the "innovative foreign-related management service measures to build a harmonious integration of Yiwu" initiative. This initiative made it to the shortlist of 15 finalists for the fourth cycle of the Guangzhou International Award for Urban Innovation.



costs and enhance service delivery and capacity. The increase in both the number of foreigners and the countries they are coming from has also diversified their needs and demands on local service providers. These needs and demands go beyond the obvious ones such as language services but also a deeper understanding of the social, cultural, political and self-realization needs of foreigners.

The number of foreign business people coming to Yiwu, including a growing number of recurrent visitors and those that have decided to reside in Yiwu has changed the nature of exchange between foreigners, the citizens and institutions of Yiwu. Undeniably, new social and cultural exchanges have emerged obliging the government of Yiwu to find new ways to deal with these emerging trends, needs and demands.

### ▶ BACKGROUND ◀

Yiwu is the first county-level city in China to have the authority to invite qualifying foreigners to come to China to live and work in Yiwu. It is also the first county-level city in China to carry out cross-border business in RMB; and the first pilot city in the field of comprehensive reform of international trade approved by the State Council. In addition, Yiwu is the first county-level city in Zhejiang Province to have the authority to register and manage foreign traders.

As of June 2019, Yiwu had more than 500,000 enterprises and start-ups with over 550,000 overseas merchants coming to Yiwu each year. More than 15,000 overseas merchants from over 100 countries and regions reside in Yiwu, and the city exports commodities to more than 210 countries and regions in the world, with global market coverage of more than 65%.

The exponential increase in international exchanges and business transactions, and the corresponding increase in demand for services by foreign business people and trading enterprises required the local government to reduce transaction

### ▶ IMPLEMENTATION ◀

The key measures undertaken by Yiwu to improve its external services include the following:

In January 2012, Yiwu set up an international trade service center with 13 foreign-related departments, including 52 windows dedicated to foreign-related affairs, and designed to handle 125 different categories of foreign trade-related procedures and approvals. The Management Committee of the International Trade Service Centre is responsible for the day-to-day operation of the Centre and the management of relevant government

departments, social organizations and service providers.

(i) In May 2013, the People's Mediation Committee dealing with foreign-related business disputes was established under the Yiwu Judicial Bureau. It is composed of 13 foreign mediators who were engaged in business in Yiwu and 28 Chinese mediators representing market operators and judicial administrators. The role and functions of the foreign mediators are officially recognized by the court of Yiwu – most probably the first time that any judicial system has admitted foreigners as officials of a court system in the world. This collaboration between foreign and domestic mediators guarantees a better understanding and communication between parties coming from very different social, cultural, commercial and legal backgrounds. Both foreign and domestic mediators work as a committee mandated by the People's Procuratorate of Yiwu and the People's Court of Yiwu. Three judges of the Yiwu People's Court serve as mentors and advisors to this joint committee of mediators.

(ii) In 2014, Yiwu initiated the community construction project of international integration. Under the management and guidance of Yiwu Civil Affairs Bureau, Jimingshan Community Manager and Professional Social Workers (Tong Yue Social Workers) jointly set up the Yiwu Tongyue Social Workers Service Center. This center is the first non-profit social service center in Yiwu and it is dedicated to building bridges between foreign communities in Jimingshan Community and local inhabitants. It provides language training, assistance on everyday life issues, as well as opportunities for cross-cultural and business exchanges for foreign businessmen and residents living in and around the community.

(iii) In 2015, the Office of the Municipal Foreign Affairs Leading Group pledged to strengthen the implementation of the annual "Ten Measures to Improve Foreign-related Management and Services" and called for the establishment of a "family of nations". Yiwu's international family of nations is managed by the Yiwu Commerce Bureau. The "family of nations" is conceived as a space where foreigners and local people engage in joint social and cultural activities to promote cross-cultural

interaction and understanding.

(iv) In 2016, the Yiwu Public Security Bureau and the Yiwu Social Security Citizen Card Service Company, Ltd. jointly developed the "Foreign Business Friends Card". This card serves several functions. It is an identity card obviating the need by foreigners residing in Yiwu to carry their passports all the time. It is a service access card that enables foreign residents to access all of the public services that citizens of Yiwu are entitled to. It also functions as a charge card for small amounts, typically to pay for services such as public transport, taxis, library services, etc.

## RESULTS

The effectiveness of these innovations is evidenced as follows:

- In 2017, the Yiwu International Trade Service Center handled more than 328,000 applications. By 2018, out of 125 foreign-related approvals, 117 were obtained through "one-stop service", with a success rate of 93.6%. Of these, 31 were transacted and approved on-line without requiring physical presence.

- Since its establishment in 2013 until the end of July 2018, the People's Mediation Committee of Foreign-related Disputes in Yiwu City had settled 489 disputes involving traders from the United States, Russia, Australia, Pakistan, Iraq, India and 26 other countries. The total value of contentions successfully mediated without recourse to litigation amounted to 610.856 million RMB (approximately 1\ US\$ 100 million) with a mediation success rate of 96%. This represented a net saving in terms of legal and court fees for all parties concerned amounting to 31.1498 million RMB (approximately US\$ 5 million) for both domestic and foreign merchants.

- Between 2016 to October 2019, more than 100,000 e-cards have been issued to foreigners residing in Yiwu and to frequent foreign visitors.

- The successful mediation experience of the People's Mediation Committee on Foreign-related Disputes in Yiwu and the story of the foreign mediators have been widely reported. In 2016, Yiwu's mediation practice of foreign-related disputes was awarded the "Excellent Award" of the Fourth Zhejiang Provincial Public Man-

agement Innovation Case and the "Special Recommended Project" by the Jury of the Third Guangzhou Award for Urban Innovation.

- In the course of promoting the construction of international integration community in Yiwu, the Chinese and foreign residents self-government committee was established. This joint Chinese and foreign residents' self-governing committee won the silver medal in the volunteer service competition in Zhejiang province in 2018.

- The initiatives of Yiwu have attracted many reports by the media and have solicited many inquiries and visits by other cities and provinces in China. Since 2017, relevant departments from the provinces of Hubei, Shandong, Sichuan, Yunnan, Hangzhou and Huzhou have sent people to study Yiwu's approach to ensuring social cohesion and the integration of foreigners.

## CHALLENGES

There have been some problems with foreign services, but Yiwu has taken corresponding measures.

- In the process of popularizing the "One-stop Government Service" and perfecting the Foreign Service platform, it is difficult for the local government to coordinate with the siloed government departments. Several departments are involved in dealing with approval for foreign-related issues and activities, each with their respective rules, regulations and bureaucratic requirements. To this end, the Municipal Committee and the Municipal Government actively organized investigations and research to provide a viable basis for harmonizing all the requirements of relevant departments on a single platform.

- The management of the joint foreign and domestic Mediators' Committee for foreign-related trade disputes presented several new challenges as the mediators come from different countries and very different legal and judicial systems and practices. Furthermore, most of the mediators worked either on a voluntary basis or as consultants. This compelled Yiwu's People's Court to adopt a more flexible and rotational system for serving the court and to organize monthly coordinating meetings. The commitment of



the mediators to the system remains very strong as all parties acknowledge the tremendous costs that have been avoided by using mediation rather than the regular court system. Indeed, in Chinese culture, litigation is viewed as a last resort, in some ways a recognition of the failure to reach a mediated solution and thus a loss of face.

- Even the best ideas, intentions and policies need to be sustainable and the case of Yiwu's initiative to ensure social cohesion and promote international trade and commerce need to be resourced accordingly. For this reason, Yiwu has set up a management system of volunteer services and partnerships, which links the services provided to foreigners with local training and career development. Volunteers working in the various services designed to make foreigners' living conditions in Yiwu easier and to facilitate business relations and international trade are recognized and rewarded. Similarly, the International Family initiative, through small grants and certificates of recognition, are incentivized to continue their work in building bridges between foreign and domestic inhabitants. These, and other measures, have effectively mobilized civil society and the local business sector to contribute to Yiwu's unique approach to social inclusion, inter-cultural relations and city diplomacy.

## INNOVATION

Although many cities have set up one-

stop service windows to facilitate business and trade, Yiwu goes several steps further in a comprehensive approach to social inclusion, social cohesion, inter-cultural exchange and understanding and diplomacy. The Yiwu International Trade Service Center pioneered a one-stop service for foreign trade-related procedures and approvals, made full use of Information Communication Technology and most importantly, broke the silos and data barriers between various departments, so that foreign businessmen and enterprises can obtain the greatest convenience and reduce transaction costs. Perhaps the most important and significant impact is that this change in governance structure and thinking has permeated the entire local government system and all transactions, regardless of whether they involve foreign or domestic entities, are being re-examined in terms of their contribution to effectiveness, efficiency and accountability.

The People's Mediation Committee of Foreign-related Disputes in Yiwu is the first such institution in China and possibly in the world. It allows foreign business people and entities settled or semi-settled in Yiwu to act as officially recognized mediators to settle trade disputes, thus avoiding costly litigation. This is a revolutionary idea in the application of the rule of law in China and perhaps worldwide.

Yiwu advanced the pilot project of building an internationally integrated community and set up China's first service center for foreigners to serve the local

economy with innovative community governance.

The International Family Initiative has fostered a sense of belonging for foreign business people and their families and has helped create a favorable environment for the prosperity of international trade by providing a platform for exchange, cooperation and assistance to business people and their families from all over the world.

The Foreign Business Friend Card, a spontaneous innovation of Yiwu, which obviates the need for foreigners to carry with them their passports on a daily basis and confers the same rights in terms of access to public services as those enjoyed by the citizens of Yiwu.

## LESSONS LEARNED

The Yiwu Project is a bold experiment designed to help Yiwu become a truly global and inclusive city. While we are witnessing trends in many regions of the world that tend towards populism, racism and exclusion, Yiwu's multiple initiatives are like a breath of fresh air and demonstrate what a local authority can and should do to combat racial intolerance, exclusion and segregation. Yiwu's initiatives constitute a wakeup call to all cities and communities around the world that they can make globalization and urbanization work for the common good while promoting international peace and understanding. In this sense, Yiwu teaches us all the true meaning of city diplomacy, international cooperation and more inclusive development.

## SDGS ADDRESSED

Goal 10: Reduce inequality within and among countries

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- Target 3: Participatory, integrated and sustainable human settlement planning and management;

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all.

 Santa Ana, Coata Rica

## SANTA ANA EN CLETA

Active Mobility and Empowerment of Women



First workshop for elderly women learning from scratch how to ride a bicycle

to the World Bank in 2015 its GINI inequality index was 482. Santa Ana's main economic activities encompass services, agriculture and tourism. Many multi-national companies have established hubs or service centers in Santa Ana because of favourable tax conditions, attracting a considerable population of expatriates.

The city's budget sources consist of income tax, sales taxes and transfers from the central government. The political structure of the country is organized by a central or national government, then there are authorities at the provincial level (Costa Rica has seven provinces) and finally local government occurs at the scale of a municipality or county. Mayors in Costa Rica are elected by popular vote. The current mayor of Santa Ana is Gerardo Oviedo. Santa Ana en Cleta is a relatively new initiative but recently has been incorporated into the newly created Municipal Program on Active Mobility and Sustainability. It was shortlisted for the 2018 Guangzhou International Award for Urban Innovation.

The county of Santa Ana, within the province of San José, Costa Rica, has, according to the latest (2016) census, a population of 57,307 throughout its six districts. Most of its inhabitants are Costa Rican nationals of mixed Spanish and Indigenous ethnicities. However there is also an important percentage of people who have immigrated from Nicaragua (Nicaraguans currently make up between 20 - 25% of the total Costa Rican population). At 61.42 square kilometres the county of Santa Ana has a population density of 934.19 inhabitants per km<sup>2</sup>. In 2018 Costa Rica's GDP per capita was 12,039 USD and according

"Santa Ana on the bicycle." It was initially conceived as an initiative for gender inclusion, focusing on improving women's mobility by teaching them how to ride a bicycle and to use it as a means of transport. But it is more importantly, an initiative to change the mobility culture in the entire population of Santa Ana and Costa Rica at large, by promoting alternative, non-fuel dependent modes of transportation. Its main components include cycling lessons and events as well as programmes for children to ride their bicycles to school and more. The initiative has the advantage of simultaneously addressing many of the SDG goals such as improved health, reduction of the carbon footprint, gender inclusion, inter-governmental and international alliances, and reduction of inequalities, all within a single programme. It combines three specific areas: Empowerment of women, sustainable mobility and the strengthening of communities, with women's empowerment as the entry point. So far 200 women have learnt to ride a bicycle. The target for the next stage is to expand the number of direct beneficiaries, to 500 people, and indirect beneficiaries to 2000 people.

Santa Ana en Cleta was named by the mayor as a Municipal Commission with an assigned budget of 25 million Colones, (roughly \$42,000) to begin the programme

### ▶ BACKGROUND ◀

Santa Ana en Cleta (Cleta is short for "bicicleta" or bicycle in Spanish). The title of the initiative could be translated as

in 2018. In addition, \$5,250 remaining from the previous year's Committee of Women Inclusion budget was used to purchase bicycles to teach the courses of Santa Ana en Cleta. The commission's committee is

comprised of a representative of the Mayor's office itself, the Department of Sports, Department of Environment, Budget Department and the Committee of Women Inclusion, which are existing offices within

the Santa Ana Municipality. Santa Ana en Cleta is an independent programme within the Municipality, which gives it the advantage of being directly accountable to the Mayor.

## ▶ THE INITIATIVE ADDRESSES THE SUSTAINABLE DEVELOPMENT GOALS (SDGS): ◀

### Ecology

**Goal 3. Ensure healthy lives and promote well-being for all at all ages.**

In terms of health benefits, increased activity is one of the best antidotes to obesity, depression and other health issues. Bicycle riding also produces endorphins and adrenaline which are positive stimulants to the nervous and immune systems. Collaboration with the Ministry of Education begins in January 2020 with programmes for children to be able to walk or ride bicycles safely to school. The Ministry of Health wants to adopt the programme to address the county's growing obesity among children (estimated at 34% of the population under 18 years of age)

**Goal 13. Take urgent action to combat climate change and its impacts**

Increased use of bicycles for transportation by all ages and demographic sectors encourages non-motorized transportation which will help reduce the production of carbon emissions. Currently, citizens aspire to own and drive cars as proof of personal success. Changing this mentality and culture will be challenging, but essential.

### Economics

**Goal 8. Promote sustained, inclusive and sustainable economic growth.**

By making it easier for people, especially women, to move, they can begin to access many new opportunities for

jobs, entrepreneurship, capacity building and social engagement. By learning how to ride a bicycle, women in less affluent communities can become mobile with increased freedom. This, in turn, opens new opportunities for work, learning, and social interaction.

**Goal 10. Reduce inequality within and among countries.**

Current mobility infrastructure accentuates urban inequality. Up to 70% of urban public space is occupied by streets designed solely for cars, while only 30% of the population uses them. Santa Ana en Cleta seeks to educate drivers and adapt road infrastructure, making it more democratically accessible and shared among various forms of mobility, not just vehicular, and therefore more socially inclusive.

### Governance

**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.**

Recently, Costa Rica passed a new 'Transportation Law' (Ley de Seguridad y Movilidad Ciclista) that recognizes the Mobility Pyramid with the following hierarchy 1. Pedestrians 2. Cyclists 3. Public transportation 4. Motorized vehicles. Based on this law, operational changes will begin to be implemented. The Municipality of Santa Ana will begin to require

bicycle parking spaces in all institutional and commercial buildings. The public buses will be required to include space for bicycles within their contracts. The new law allows bicycles to occupy a complete lane, although no one yet seems to know this! There is an important synergy among several government entities at the local and national level, pointing toward a change in the mobility culture.

**Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.**

The programme's sponsors have been building partnerships at the level of the national government with the Ministry of Transportation through new agreements with the public transportation providers to include space for bicycles; the Ministry of Education through the programme "Safe routes to school" which has a pilot project beginning in January 2020 and if successful should be replicated elsewhere; and the Ministry of Health, through its programme Recafis – network of physical activity by district – which wants to address growing levels of obesity currently affecting 34% of children. The Municipality of Santa Ana has also built international alliances with the German Society for International Cooperation (GIZ), the Mexican Embassy, Walk 21 – an international charity championing "the right to walking", and other multinational institutions.



Locally, the initiative involves various public-public, public-private and public-community partnerships. The main partners at the public level are the Vice Ministry of Transport, supporting development of an inclusive cycle infrastructure. The other public actor that is important is the ICODER (Costa Rican Sports Institute) with funding for some activities. Private sector partners have provided funding for training workshop logistics. Other partnerships being explored include establishment of a public bike system, and parking areas for bicycles.

The Santa Ana "regidora" (council woman) explained that they are relying on the initiative's unique advantage of touching on numerous SDGs, which countries have agreed to. The programme's holistic nature and ability to advance several SDGs, act as a strong safeguard to maintain its organization and funding regardless of political changes that naturally occur with the political cycle.

## ▶ CHALLENGES ◀

The programme is just beginning and although it has gained important momentum it faces serious challenges. The network within the Municipality of Santa Ana has been solidly established by the current mayor. However, alliances and partnerships with the various Ministries are pending formal agreements. At present the collaborations are based on declared good intentions and promises.

Public transportation works through private concessions that have agreements with the Ministry of Transportation. Negotiations will need to be made with bus operators to include infrastructure and space for people to bring their bicycles. This is critical because Costa Rica's urban model is dispersed and low density. Average trips in Santa Ana are between 15 and 20 kilometres – much more than the 5-8 kilometres generally defined as a comfortable bicycle commute. Combining bicycle and bus mobility can make the longer distances possible.

Santa Ana and in general Costa Rica's road infrastructure is problematic as narrow lanes with deep rainwater channels on either side, inconsistent number

of lanes and bad road surface conditions have generated a very hostile driving culture. The city will have to embark on ambitious educational campaigns to address driver rage that has caused the high number of road accident-related deaths in the country. The city will also need to invest in its road infrastructure as a prerequisite to the change in behaviours it hopes to generate.

## ▶ EMERGING LESSONS ◀

Education campaigns regarding the county's mobility culture and improved programme-support communication in general are an important next step. At present communication is handled by the program's promoters and they already have too much responsibility. There is little awareness at present regarding pedestrian and cyclist rights. Education campaigns may begin in schools. Children could be trained to become champions of the initiative, pointing out to parents and other adults that the city's design does not cater for them, or for cyclists and pedestrians. The city and country should embark on a very ambitious educational campaign directed to drivers to change their road behaviour, and increase awareness and interest in using bicycles or other non-motorized transportation.

Furthermore, owning and driving a car is something most Costa Ricans desire. It is an aspirational symbol of well being and wealth. Automobile dealers post advertisements on buses saying, "Stop riding this bus, buy a car." Banks are able to offer long term, low-interest rate loans to people to buy cars, making it much easier to purchase a car than a house. The city and national governments should acknowledge the contribution of easy access to credit for the purchase of cars to the carbon footprint of the city and counter it with education campaigns as well as significant economic incentives to adopt alternative modes of transportation.

Another notable hurdle to overcome is access to bicycles. People with lower incomes, including women, are interested in riding bicycles. However, they do not have sufficient resources to purchase one. There are initiatives by NGOs that acquire used bicycles and refurbish them

at a very low cost. These initiatives should be further supported through incentives to citizens to donate used bicycles, and/or subsidized bicycles.

An incipient bicycle sharing program introduced by a private company (OMNI) could also be a solution in addition to the Santa Ana Municipal bicycle sharing programme at-no-cost that is to begin early in 2020. The programme will use the bicycles that were purchased for the Santa Ana en Cleta bicycle courses. These efforts are still developing and very small in scale. Another idea would be to use the equivalent of three months of the public transportation subsidy given by the government to individuals that financially qualify, to cover the cost of a bicycle. This alternative could be offered as a parallel public transportation programme, for interested citizens. Such a programme would require public education to ensure buy-in.

A first look at the Santa Ana en Cleta's initiative would suggest that the main issues would have been about motivating citizens to participate. However, a closer look shows that they still face challenges in terms of getting people within the municipality and national government ministries on board. Further, the programme is still to gain wide and full enthusiasm of all stakeholders, which will be needed for the success of the programme. Latin America, in general, is well behind other parts of the world in adopting changes with respect to alternative mobility, and Costa Rica has the additional difficulty of having a low density, dispersed urban model. And yet change needs to begin somewhere. Introducing cycling into the municipality as a gender inclusion initiative was very insightful on the part of its promoters, because it allowed them to get funds, become an official municipal programme, and avoid the dissenting voices regarding transportation, which are complex and touch on many interests.

A compelling lesson from Santa Ana en Cleta for any local government is that initiatives that respond holistically to the SDGs will have a much stronger chance of continued support, including funding, regardless of the political changes that will naturally occur within municipalities from one electoral period to the next. The norm tends to be that programmes are discontinued by incoming administrations. How-



ever, programmes that are well articulated within a network of many departments, ministries and civil society, and that also respond to a globally approved agenda, can build enough momentum that they cannot be easily dismantled.

The most critical issues in terms of mobility that Santa Ana and Costa Rica face are the constraints imposed by a very weak infrastructure. The physical conditions of roads are not good and very few streets have sidewalks. Instead of sidewalks, because of heavy rains, roads tend to have deep and wide channels for rain water on both sides. Sidewalks are considered the responsibility of each property owner and have not been treated as part of the public domain. This explains their inexistence or poor condition. Adapting roads will require very steep investment.

Another challenge is a driving culture that is very hostile toward other drivers, pedestrians and cyclists. Because the

road infrastructure is poor, it has compelled drivers to become aggressive in their behaviour and this has created a very poor driving culture. Santa Ana and Costa Rica at large will have to engage a very vigorous and massive education/ communication campaign to pacify the conduct of drivers, and create safer conditions for non-motorized vehicles and pedestrians.

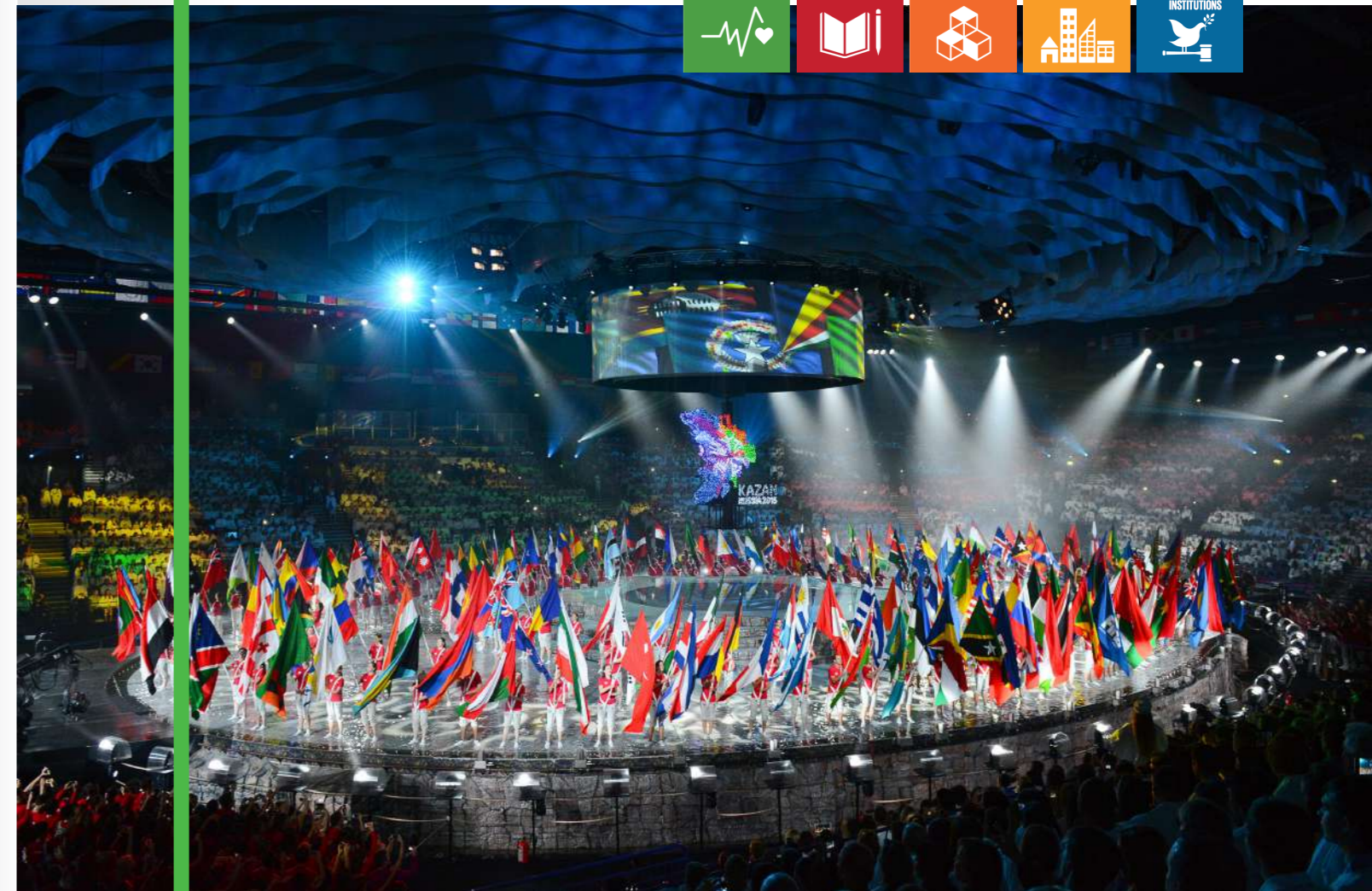
At present Santa Ana en Cleta is cantered in Santa Ana but once it is better consolidated, it quickly needs to spread to other municipalities and be promoted at the national level. Critical to the initiative's success will be to get key stakeholders in the municipality and the state government agencies fully on board and committed not only with good intentions, but also with resources. Currently the only resources the programme has are from the Municipality of Santa Ana. Even with the Ministry of Transportation's direct involvement, Ministry of Education and the Ministry of Health,

none of these entities contribute financially to the programme at present.

In summary, the case of Santa Ana en Cleta is indicative of many other local initiatives that have recognized the importance of the SDGs to their ongoing efforts to promote more sustainable urban development. These initiatives are perceived, in large part, as small and highly localized efforts to improve local living conditions and address local challenges. They are not perceived by central government policy makers as an integral part of the efforts required by stakeholders, at all levels, to bring about a more inclusive, just and equitable society. Santa Ana in Cleta has the merit of showing how gender equality can be used as an effective entry point to raise awareness among and engage key stakeholders in a wider debate on the issues and challenges associated with urban mobility and sustainable development.

 Kazan, Russia

## Innovative Social and Economic Development of the City of Kazan



Kazan, the capital of the Republic of Tatarstan, has a population of 1,234,500, growing at a rate of 0.95 per annum. It covers an area of 614 square kilometers and has a population density of 2025 inhabitants per square kilometer. Kazan is arguably Russia's most multicultural and

multi-ethnic city. It is also multi-religious, with mosques standing side by side with Orthodox Christian cathedrals. Both the government and citizens highly appreciate this ethnic, cultural, and religious diversity and are safeguarding it as part of Kazan's unique cultural heritage. The "Innovative

social and economic development of the city of Kazan" initiative consists of three related sub-initiatives recently implemented by the city of Kazan: "Healthy Kazan", "Environmental Development", and "Embracing Diversity."



### ▶ BACKGROUND ◀

The "Innovative social and economic development of the city of Kazan" initiative reflects recent developments in three areas (multi-national relations, urban environment and urban lifestyle). Sub-initiatives in each of these areas are in turn represented by a number of projects. At first glance the Kazan City initiative may look like a random set of projects implemented under different state or municipal programmes. However there are several common elements that serve as the thread that brings all of the sub-initiatives together.

The first common element is the val-

orization of the heritage of the City of Kazan. Recently Kazan City became the venue for a number of international events, notably: the 2013 Universiade; the 2018 FIFA World Championship; the 2014 Water Sports Championship; the 2019 World Skills competition. These events not only attracted a substantial amount of public (both state and municipal) and private investment in the city's infrastructure but they also greatly enhanced the reputation of the city as a promising tourism destination. These events allowed the international community to discover the unique ethnic cultural mix and diversity of Kazan. Two nations (Russians and Tatars) and two religions (Christian Orthodoxy and Islam)

co-exist in the same city and region as do over 100 different nationalities (ethnic groups) that span, in terms of east to west, almost half of the world. The common thread of the initiative was not only to look for the best and sustainable use of physical infrastructure built for big international events but also to look for best means of marketing the unique social and cultural capital of Kazan.

The second element common to all three sub-initiatives is their design and approach. Each of them is driven by a flagship project such as The House of Friendship of Nations for the 'Embracing Diversity' initiative, a new design for a city park for the Environmental initiative, and a

specialized facility for provision of healthy food for school meals for the 'Healthy City' initiative.

The third common element lies in the open format for fostering and engaging the active participation of stakeholders including public authorities, municipal departments, the private sector, civil society and residents' associations.

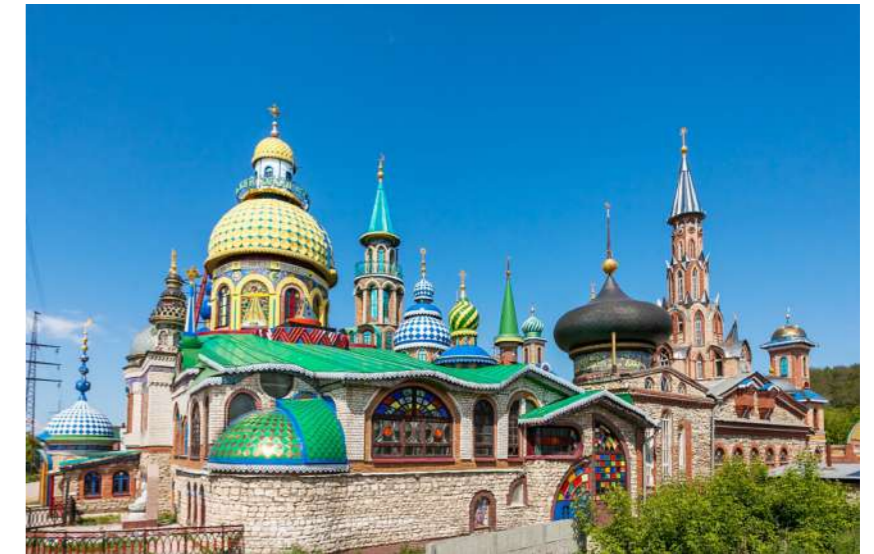
In summary, all of the initiatives, sub-initiatives and projects share two desired outcomes: better health and well-being for all inhabitants of Kazan and social interaction and cohesion between communities. The following are short descriptions of specific backgrounds for each of the sub-initiatives.

### ▶ EMBRACING DIVERSITY ◀

With representatives of more than 115 nationalities, Kazan is one of the most multinational and multi-ethnic cities in Russia. Historically, ethnic, cultural, and religious diversity in the city of Kazan has created positive ethno-confessional relations among its citizens. Centuries of living and working together have bred a culture of good-neighborliness, religious tolerance, inter-ethnic harmony, friendship and cooperation. Today, despite the fact that the inhabitants of Kazan represent all the major groups that are involved in antagonist friction and conflict in many parts of the world, in Kazan these same ethnic and religious communities live in peaceful coexistence.

With an already very diverse community mix in the city, Kazan continues to attract migrants from former territories of the Soviet Union. Maintaining social cohesion and promoting tolerance remain therefore main issues and an area of focus for the city. The City's peculiarity is that most of the migrants represent ethnic groups that already have organizations, both formal and informal, that from part of the civil society landscape of Kazan. The social and cultural capital of Kazan is thus being continuously reinforced and even enhanced with the recent attractiveness of Kazan's higher education institutions for foreign students.

Kazan is experiencing two trends: rapid urbanization and globalization that lead to uniformity and erosion of cultural



peculiarities, especially among the young, and at the same time a legacy characterized by ethnic, cultural and religious diversity. Striking a balance between these two apparently contradictory trends is central to the narrative and endeavors of the city of Kazan. In the final analysis, there is only one way forward for Kazan: encourage, celebrate and preserve diversity in all of its forms while rallying all communities around the theme of health and well-being.

### ▶ THE HEALTHY CITY ◀

Rapid and massive industrial development during the Soviet period left Kazan with many environmental problems, characterized by, inter alia

- high levels of air, water and soil pollution, exacerbated by the high number of private vehicles and the concentration of polluting industries;
- low ratio of urban greening and lack of useable landscaped gardens, green space and recreational space including people-friendly river banks;
- an inadequate system of industrial and household waste collection and disposal and the absence of an effective garbage recycling infrastructure.

The "Healthy Kazan" initiative is a complex project aimed at promoting sports and increasing the health and well-being of citizens. It includes a number of areas:

healthy food for children, campaigns for abandoning poor habits, popularizing a healthy lifestyle among citizens, creating a sport culture, building sport facilities, modernizing healthcare facilities and much more.

Environmental protection and healthy lifestyles go hand-in-hand and require a combination of physical and social infrastructure. Until recently the City of Kazan lacked such infrastructure and a healthy lifestyle was not effectively promoted among the citizens.

As a result, only one out of seven people (or 13.1% of the total population) regularly participated in sports and recreational activities, the city observed an increase in the number of lifestyle related diseases.

Similarly an imperfect nutritional system for children in municipal schools significantly contributed to problems of health and wellbeing. A lot of schools in the City of Kazan are located in old buildings with inadequate facilities which made difficult the preparation of healthy food, including hot meals inside school premises, and the quality control of such food.

The main goal of the "Healthy Kazan" initiative was to tackle all these challenges so as to improve the quality of life and health of the citizens of Kazan. The city chose a comprehensive approach: construction of new sports facilities and infrastructure in favor of walking and cycling



(embankments, bicycle paths and parking, bicycle lines), modernization of the health-care system and improvement of the children's nutrition system. This was accompanied by a campaign through the mass media, to encourage the entire population to engage in sports and other social activities, and to use public space for healthy recreation.



## IMPLEMENTATION

The 'Embracing Diversity' sub-initiative is implemented under a Municipal programme on Strengthening Civil Harmony. This programme coordinates activities of 34 municipal departments, committees and public associations. Leadership for this initiative lies with the Department for Development of Languages and Interaction with Public Organizations at the Kazan Municipality. The main activity of the Department is the coordination of the activities of local agencies and their interactions and working relations with national-level cultural, religious and political organizations. Moreover, there are religious organizations, numerous NGOs and cultural associations that collaborate with each other to implement various initiatives and events aimed at preserving and promoting cultural heritage. The Programme's annual budget is about five million Roubles (US\$800,000) to support about 200 different activities. Some of these activities take place in the House of Friendship of Nationalities that was created with the aim to develop friendly relations between the different cultural and ethnic associations of the city and the region. Since 2005, the House of Friendship of Nations has been interacting with 200 national cultural associations representing 36 ethnicities. The House of Friendship of Nationalities has a unique information web portal, consisting of 36 independent sites of the national cultural associations. On each site it is possible to use the native language of every

representative of a given ethnic group. This is the first internet project of this kind in Russia. Introduced in 2012, the new five-floor building of the House of Nationalities includes offices for dozens of national communities, a library, an information centre, an editorial office for the journal, Our home - Tatarstan, a conference room, a concert hall, and a museum. The Multi-national Sunday school provides courses on native languages, culture, song and dance, history and geography for 500 children of 18 minority groups.

The 'Environmental Development' sub-initiative is a multi-faceted undertaking that includes the effective management of the environment including waste management, and more. The primary goal of the initiative is to create a comfortable, safe and user- and eco-friendly environment for the inhabitants of Kazan through, inter alia:

- the provision of inclusive public spaces and green areas that are easily accessible by all;
- the promotion of the sustainable use of terrestrial ecosystems;
- the provision of urban amenities including new and revamped parks, public gardens, and other green recreational spaces,
- the development of public and private partnership projects in the area of environmental management and
- the promotion of social responsibility by the private sector and citizens.

The initiative is led by Committee for

Public Services and Amenities and Directorate for Public Parks and Gardens. The main activities of the Committee are the design, construction and repair of local roads and street lighting, participation in addressing road safety issues, the organization of landscaping and the protection of green spaces and water bodies, which includes flood mitigation and protection. The Directorate manages public parks and gardens in order to create favourable conditions for mass recreation.

Public-private and public-community partnerships have been shown to be effective mechanisms for solving the problems of efficiency and the leveraging of public funds to improve the quality and volume of public services. In the implementation of the "Environmental Development" sub-initiative, an important role was played by the Environmental council chaired by the Mayor of Kazan. The council was formed in 2012 and brought together leading independent experts in environmental science together with all relevant city departments. Together it was decided that the flagship project of the sub-initiative would be the 'Public Parks and Gardens' project to create new parks and gardens and refurbish existing ones.

The partnerships were also used in the implementation of many urban development, landscaping, and greening programmes. In the "Green Record" project, together with citizens more than 150,000 trees and 66,000 bushes were planted in the city, and more than half a million

square meters of new lawns were laid. The annual "Blossoming Kazan" flower competition gave the city 22 million flowers over three years. The "Blossoming Kazan" involves professional groups, local enterprises, non-commercial organizations, schools, and ordinary citizens.

The 'Healthy Kazan' sub-initiative is implemented within the framework of the "Strategy of Social and Economic Development of Kazan to the year 2030".

Since 2006, Kazan has been implementing the municipal programme dealing with the organization of a healthy diet and the introduction of modern technologies for the production and transportation of ready-to-eat breakfasts to the educational institutions of Kazan. The main programme activities include:

- The creation of a 'Single Supplier' of school meals – Department for Food and Social Nutrition;

- The transfer of the food production equipment and the food certification laboratory built for 2013 World Universiade to the Supplier;

- The reconstruction of three enterprises to produce school meals under 'cook@chill' technology;

- The purchase of 56 specialized vehicles to transport food and meals;

- The development of scientifically approved menus at municipal level and testing the menu sets with children and parents;

- The organization of an electronic nutrition monitoring system with parents' access to information on the food consumption of their children;

- The introduction of subsidies to children from low-income families (currently 18% children receive meals at reduced prices).

The food programme is in addition to the initiatives focusing on the general population, and encouraging participation in sports, use of outdoor spaces and healthy recreation.

## RESULTS

Activities carried out in the 'House of Peoples' Friendship' with the support of the Municipal Programme for Strengthening Civil Harmony were possible as a result of partnership between the gov-

ernment of the Republic of Tatarstan, the mayor's office of Kazan and local ethnic, cultural and religious communities. The stakeholders are, in the final analysis, both social actors and inhabitants of the city. The House of Peoples Friendship has led numerous religious organizations, NGOs and cultural associations to collaborate with each other to implement various initiatives and events designed to preserve and promote cultural heritage and identity. The national cultural centers also became entry points where migrants from other regions and other countries come with their specific problems including those related to communication with state or municipal authorities. Social cohesion and relations between ethnic groups and religions in the City are subject to annual household surveys. According to the most recent survey 87.5% the citizens of Kazan positively assess the situation in inter-ethnic relations and 79.5% - in inter-faith relations. Today, Kazan is a clean, comfortable, and beautiful city. Kazan is one of the first cities in Russia to introduce innovative "green standards" that determine the higher environmental requirements in the construction of buildings as well as in architectural planning, and territorial development.

The successful experience of Kazan was taken as a basis for the adoption of similar programmes at the regional and federal levels. Since 2017, such programmes are being implemented throughout Russia within a priority federal project titled "Building a Comfortable Urban Environment", in which Kazan serves as a platform for transferring experience and best practices to other regions and municipalities in the country. The experience of Kazan is unique in addressing the problem of city greening and infrastructure renovation in an innovative way that involves authorities, citizens, industrial enterprises, Small and Medium Enterprises (SMEs), universities, and the youth.

Thanks to the active work of the city leaders and citizens to improve the city's ecology, Kazan rose by 38 positions and took the 7th place in the ecological rating of major Russian cities (in 2012 the city was in the 45th place). Every third Kazan citizens actively and regularly participate in sports and recreational activities- about 40% of the population.

The implementation of the projects

within the "Environmental Development" sub-initiative framework had a positive impact on the image of the entire city of Kazan, making it more attractive and environmentally friendly for citizens, tourists and investors. The sub-initiative was implemented within the framework of the "Strategy of Social and Economic Development of Kazan until 2030" that ensures it as a long-term priority for the local authorities.

The 'Healthy Kazan' sub-initiative promoted healthy lifestyle among the citizens of Kazan. One of the main effects is improvement of city demography: since 2009 the number of births exceeded the number of deaths and natural population growth has been achieved. The increase is both due to fertility growth and reduction in mortality rate. The life expectancy of the citizens has increased to 75 years, which is above the national average.

The situation regarding nutrition in schools also has changed dramatically: the share of pupils with access to hot school meals grew from 37% in 2005 to 83% in 2018. Regular surveys show that the overwhelming majority of parents and children positively assess quality of food (85%) and the degree of choice (80%).

Another positive effect is additional support for the local economy. In order to provide children with high quality local food at schools, the Kazan Department of Food and Social Nutrition works with local farmers from neighboring rural municipalities. This has created a new dynamic and new relationship between the city of Kazan and its neighboring rural districts, helping to bridge the urban-rural divide, and with benefits both ways.

## CHALLENGES

Globalization often leads to uniformity and erosion of cultural particularities, especially amongst the younger generation. This is the main challenge of the 'Embracing Diversity' sub-initiative and there seems to be no other solution but keeping up efforts to support the many national and cultural identities at the same level at least, and to closely monitor situation for timely fine-tuning of supported activities.

The main challenge of the 'Environmental Development' sub-initiative is the low level of public awareness of the envi-

ronmental issues, including the issues of waste separation, collection and disposal.

For many years, the usual practice was that garbage was collected from households and buried in landfills without extracting useful waste. Now the city has started the reform in the garbage collection and management based on separation at source in order to extract as much reusable and recyclable waste as possible and reduce the amount of waste to landfill. To meet the challenge the city organizes information campaigns and sensitizes citizens about environmental issues with a special focus on the younger generations that in turn can affect the attitudes of their parents and friends.

However it became evident that it would be extremely difficult to change people's habits and convince them to separate waste at source. Information campaigns alone were insufficient. The city should think on developing a more comprehensive policy comprising a wide range of material (financial) and moral incentives for both citizens and organizations, and also differentiated among different social, age and professional groups. Capacities of homeowners' associations and other NGOs should be also mobilized.

Some projects within the 'Environmental Development' sub-initiative assume construction of new roads and other elements of physical infrastructure which may adversely affect certain neighbourhoods and citizens, who could therefore resist change. Kazan has instituted quite an advanced and efficient system of stakeholder analysis and management that is widely used by city authorities and municipal organizations. The city engages in dialogue first explaining the reasons for proposed change and second by arriving at mutually acceptable conditions under which opposing citizens finally agree to let the projects be implemented.

'The 'Healthy Kazan' sub-initiative has a number of challenges of a different kind.

Firstly, for the school feeding programme, there is a risk that the single provider of school meals will misuse its monopoly position and will compromise food quality. The risk however has been well managed and controlled thanks to the efficient communication with and feedback from parents including:

- introducing a procedure when only the meals approved by children and parents during pilot testing are included in the official list of meals offered to schools;

- establishing a Parents' Journal with comments and suggestions provided by parents;

- organizing tours to food producing enterprises for interested parents including active bloggers and other users of social media and

- conducting regular household surveys.

Secondly, there was a risk of stigmatization since children from low-income households receive meals at reduced prices. The system of electronic transactions with special cards mitigates this risk – so there is no unauthorized access to information and the children do not know who is being subsidized;

There is also a challenge in terms of capacity since every year the number of school children increases so the demand for food to be delivered to schools increases as well. There is also a potential need to link schools which still do not have access to 'cook@chill' meals to the system and expand the nutrition system to hospitals (there are few already linked). Given the increasing demand, the Department of Food and Social Nutrition slowly increases its capacities from year to year but this implies additional budget allocations.

Also despite good quality and healthy food currently provided in most of Kazan's schools, there is a lot of unhealthy junk food available to children and their parents elsewhere. Therefore it is necessary to educate children and their parents to eat healthy food at home and outdoors. To meet the challenge the Department organizes educational programmes for children and their parents in a manner that they in turn can influence each other and their friends as well.

## INNOVATION

Over the past ten years, Kazan has developed an open format for the interaction of city authorities, public associations, civic organizations and residents. It is civil society that mostly makes proposals on what Kazan should be doing, and it is the role of the public authorities to find the

resources, partners and opportunities for implementing these proposals. This format has proven to be effective in the areas of the three sub-initiatives considered. Innovative solutions that were developed through the interaction of local authorities and the citizens were translated into municipal and regional programmes in the areas of sports, healthcare, nutrition, and the environment. Large enterprises, experts, environmentalists, specialists in the field of urban planning, as well as public organizations joined the work on the greening and landscaping of the city.

It was possible to make a breakthrough thanks to innovative ideas in choosing development approaches in the area of improving citizens' health, actively attracting financing through the organization of international events, consistently building dialogue with citizens and involving them in solving urban problems.

## LESSONS LEARNED

The city has learned a lot over the past 10 years. First of all, the city has built a successful communication scheme with all interested parties and stakeholders. This allows the City to realize its own potential and the potential of partnerships to solve problems and not just engage in rhetoric and token "participatory" meetings.

The initiative is directly related to other programmes that are implemented in the Republic of Tatarstan (including Kazan). The regional programme 'Implementation of the state national policy in the Republic of Tatarstan for 2014-2020' aims at developing and supporting all ethnic minorities living in the region, preserving of inter-ethnic and inter-faith peace and harmony and consolidating the "all-Russian" civil identity, including successful socio-cultural adaptation and integration of migrants. 'The Strategy of Social and Economic Development of Kazan to the year 2030' approved in 2015 emphasizes the importance of safeguarding the cultural and religious diversity of the city of Kazan.

Thanks to the consistent actions of the municipal team, its close and effective interaction with the regional and federal authorities, breakthrough decisions in choosing drivers for the development of the city, the active attraction of invest-

ments, the consistent building of dialogue with residents, Kazan has since 2005 experienced a huge breakthrough in the development, becoming one of the most modern and comfortable cities of Russia.

The concentration of political will on solving a particular problem, the willingness of officials to take action, relying on public support and support by engaged stakeholders discussing a problem and finding solutions together with the citizens, consistency and perseverance, active inclusion in national and federal programmes and grants allows the city to implement the complex and ambitious initiatives.

Kazan's experience in the development of a healthy urban environment can be extended to other regions and countries. Attracting major international sports events can be beneficial for many cities that lack adequate financial resources to realize their goals. Such events can be a means of attracting external financial resources and taking advantage of public-private partnership mechanisms. But even more important is the City of Kazan's experience in being strategic in the use of assets developed for major international events to meet actual needs of the city. The latter implies careful planning of post-event use of assets ahead of the events.

According to the City Strategy, by the year 2030 Kazan will be a territory of health, a livable city, a city of active, responsible and creative citizens, a city with open government and safe urban environment. The main goal of the initiative is to turn Kazan into a "health territory" by year 2030, in accordance with the best quality of life standards and criteria of the World Health Organization. An important objective is to bring the share of citizens systematically engaged in physical activities and sports to 50%, to extend the period of active longevity, and to increase the life expectancy to 76 years.

The Kazan initiative demonstrates the critical role of leadership that public authorities must play in creating the conditions for social stability, inter-ethnic and inter-faith peace and harmony. This has been achieved through a combination of discrete yet inter-related actions. The first one was to create a space for cultural expression and inter-action. The House of Friendship of Nationalities provided this

space for all different ethnic, religious and other groups to organize events that bring people together. This formal space for social and cultural interaction was supplemented by less formal spaces for socializing, mixing and recreation. The improvement to the environment with a major focus on public parks, gardens and green spaces, accessible to all has proven again and again and in very different contexts to be effective in improving and maintaining social cohesion and inclusion. Last but not least, Kazan's focus on health and wellbeing through the building of an extensive infrastructure for sports and the implementation of healthy school meals showed the City's genuine concern for people's welfare on a very personal level. In conclusion, the three-pronged approach that the City of Kazan has implemented has proven to be a powerful mix of initiatives that have made the most of Kazan's diversity, helped create a shared sense of place and identity and is well on the path of "leaving no one behind".

### SDGs addressed

Goal 3: Ensure healthy lives and promote well-being for all ages

Goal 4: Ensure inclusive and equitable education and promote life-long learning opportunities for all

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

- Target 3: Participatory, integrated and sustainable human settlement planning and management

- Target 4: Safeguard cultural and natural heritage

- Target 7: Universal access to safe, inclusive and accessible green and public spaces, in particular of women, children older persons and persons with disabilities

- Target 8: Support positive economic, social and environmental links between urban, peri-urban and rural areas

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions for all.



 Mezitli, Turkey

# WOMEN PRODUCERS MARKET



## ▶ BACKGROUND ◀

Mezitli is one of the four second-level municipalities in Greater Mersin, Turkey. The municipality was established in 1968 and became an official province of Mersin in 2008. Within a relatively short time, Mezitli has grown into a municipality with modern housing and workplaces, schools, hospitals and other government services as well as infrastructure.

However, traditionally, women from Mezitli are economically dependent on their husbands and other male relatives, resulting in their lack of confidence and inability to independently choose the life they want. Further, due to capital shortage and the administrative environment that limits their development, women have a limited choice in terms of productive activities and have trouble getting employed. In Turkish society, women are still considered as one of the most vulnerable groups.

For inclusive economic growth and gender equality, the government of Mezitli has built the women producers market to encourage women to actively engage in business activities and improve their

economic independence. Meanwhile, the project also enhanced the social interaction between women with different social, economic and cultural backgrounds. To be specific, the project aims to:

Mezitli is a fast-growing city located in Mersin, south Turkey. It has experienced modern rapid growth due to migration within Turkey as well as from Syria, its neighboring country. However, local women are still highly dependent on their husbands and male relatives, making it hard for them to important make life decisions independently. Against this background, it has been identified as a priority to implement economic projects and inclusive measures to improve the economic status of women, reduce poverty and potential conflicts brought by gender inequality.

In 2014, Mezitli implemented a women's empowerment project, namely constructing the "Women Producers Market". Only women residing in Mezitli and surrounding areas are allowed to sell products in the market and the government

provides training, infrastructure, financial support and management services for women entering the market. After a few years of development, the women producers market has expanded from one market to nine markets. With the help of these markets, women have become more economically independent and have created a wider social network. There is a broader consumer market for agricultural products, handicrafts and other local merchandise resulting in a rise in the overall consumption level. Media inside and outside Turkey is also paying increasing attention to this experience.

- Reduce gender-related barriers
- Expand employment opportunities for women
- Enhance social and cultural exchange between women
- Encourage women to be actively engaged in society

## ▶ IMPLEMENTATION ◀

The "Women Producers Market" is a cooperative project between the local municipal government and local women (pro-

ducers and consumers). Since the beginning, the Mezitli Women Producers Market Foundation has been supporting cooperation among Mezitli City, local women producers and consumers. The Foundation organized a meeting to identify local women who were willing to enter the "Women Producers Market".

On August 25, 2014, Mr. Neşet Turhan, Mayor of Mezitli, established the first women producers market. By September 2018, Mezitli had nine women producers markets. At present, the nine markets have 612 women producers from young to old. The nine markets serve on different days of the week and at different locations. One or several markets are available every week. In these markets, only women are allowed to sell their products which include agricultural products, food, knitting jewelry and other handicrafts.

The conditions for entering the markets include:

- All sellers must be women and must come from Mezitli
- All sellers must be committed to keeping themselves engaged in the market
- Products must be handmade or



self-produced, following municipal hygiene standards

The government of Mezitli provides infrastructure, financial support and management services in the market. Experienced municipal workers organize and implement the initiative and hold regular information seminars. Female producers who apply for an entry must be trained and certified. The training includes both hygiene knowledge and marketing skills. The training courses also encourage them to use glass and paper for packaging instead of plastics.

In terms of management, women producers do not need to pay the rent or utilities after their entry. The Women Producers Market Cooperative is an important regulator of the women producers markets, whose main job is to protect the rights of women producers and to evaluate their production. Meanwhile, the government sets maximum prices for goods in the markets to guide pricing, so as to ensure that goods sold in the markets are of high quality and reasonable price.

In terms of infrastructure, except for the nearby toilets, mosques and play-

grounds, solar cooling systems have been installed in the markets with government funding in June 2018. The air conditioners not only help prevent the goods sold by women from going bad but also provide convenience to consumers who might choose not to go shopping because of the hot weather in summer. The system converts heat from the sun to cool and is very cost effective. The government's long-term plan for the project is to build women producers markets in all 40 communities of Mezitli. In the meantime, women producers are already applying for positions in these markets and are put on the waiting list. What's more, the government is encouraging women producers to start their own companies.

## ▶ RESULTS ◀

The control audit is used to evaluate the development of this initiative because the government is providing basic financial support for the markets. Regular reports provide sufficient data to prove the positive influences of this initiative.

For local women producers, the markets make them more active and visible and increase their opportunities for income and employment. This initiative gathers women of various backgrounds and provides them with a platform to improve their economic independence. At the same time, it also provides a platform for women to connect and cooperate. Some women producers said that they have found and gained new friendships in the markets, thus expanding their social networks.

In terms of the local economy, small-scale production of local traditional products (e.g. homemade handicrafts and organic products from gardens) has increased because of the rules for selecting sellers and commodities, which give priority to local products entering the market. This promotes environment-friendly production and consumption and local economic development. Overall local consumption level has risen. As women producers started to sell fresh fruit, vegetables, pastries and all kinds of handicrafts made in their own homes, residents of Mersin have found an alternative source of affordable food of high quality. Many women from rural areas

now can afford cars on their own and have learned to drive and obtained their driver's licenses – increasing their mobility and reducing isolation.

As for building the city's image, the women producers markets have received extensive media attention. Fox TV, one of the most viewed TV channels in Turkey, entered the markets, interviewed the owners of various booths, and talked to women producers, which have been broadcasted on the news. This creates a good image of the city.

## ▶ CHALLENGES ◀

The population growth is mainly due to immigrants from eastern Turkey and an influx of people from neighboring countries such as Syria, which brings certain instability to the local society. At the same time, including these Syrians and asylum seekers in the framework of Women Producers Market challenges the government. The region needs to adopt social/cultural inclusive policies and applicable economic projects to ensure local peace and a quality living environment with economic opportunity for all inhabitants - citizens and migrants. Other challenges include the need to continually ensure adherence to sales policies and product quality standards, to monitor and regulate prices.

## ▶ HIGHLIGHTS ◀

Community markets are common in cities, but men are usually dominant in such markets. The Women Producers Market Project of Mezitli is a revolutionary one because it is the first market fully supplied and operated by women in Turkey and in the region. In the past, every booth in the market was very expensive to rent and difficult to acquire. Even when having money, people could not rent any booth without lobbying. The Women Producers Market Project managed to cover women producers from the 40 communities of Mezitli. Booths for women have only two prerequisites: living in Mezitli and being a women producer. The women producers markets, with hundreds of thousands of customers have made local women

confident and independent. The concept of this initiative makes economic development accessible to women who do not normally leave home without family permission. Now that these women are more independent, they can communicate with each other. In the nine women producers markets, 650 women producers have their own booths.

## ▶ LESSONS LEARNED ◀

This initiative provides a reference for promoting women's economic independence in a culturally sensitive way. By only allowing women producers in the markets, the male monopoly in the economic market has been broken and institutional guarantee has been provided for women to carry out economic activities. The producers markets have inherent limitations as they have little scope for long-term prospects for economic expansion. They have, however, served as a platform and a bridge for women to earn an income, enjoy public space exchange and cooperate amongst themselves. The training provided by the government for women before and during their entry in the market has improved women's business capacity, laying a foundation for them to conduct larger-scale economic activities, set up companies or start their own business.

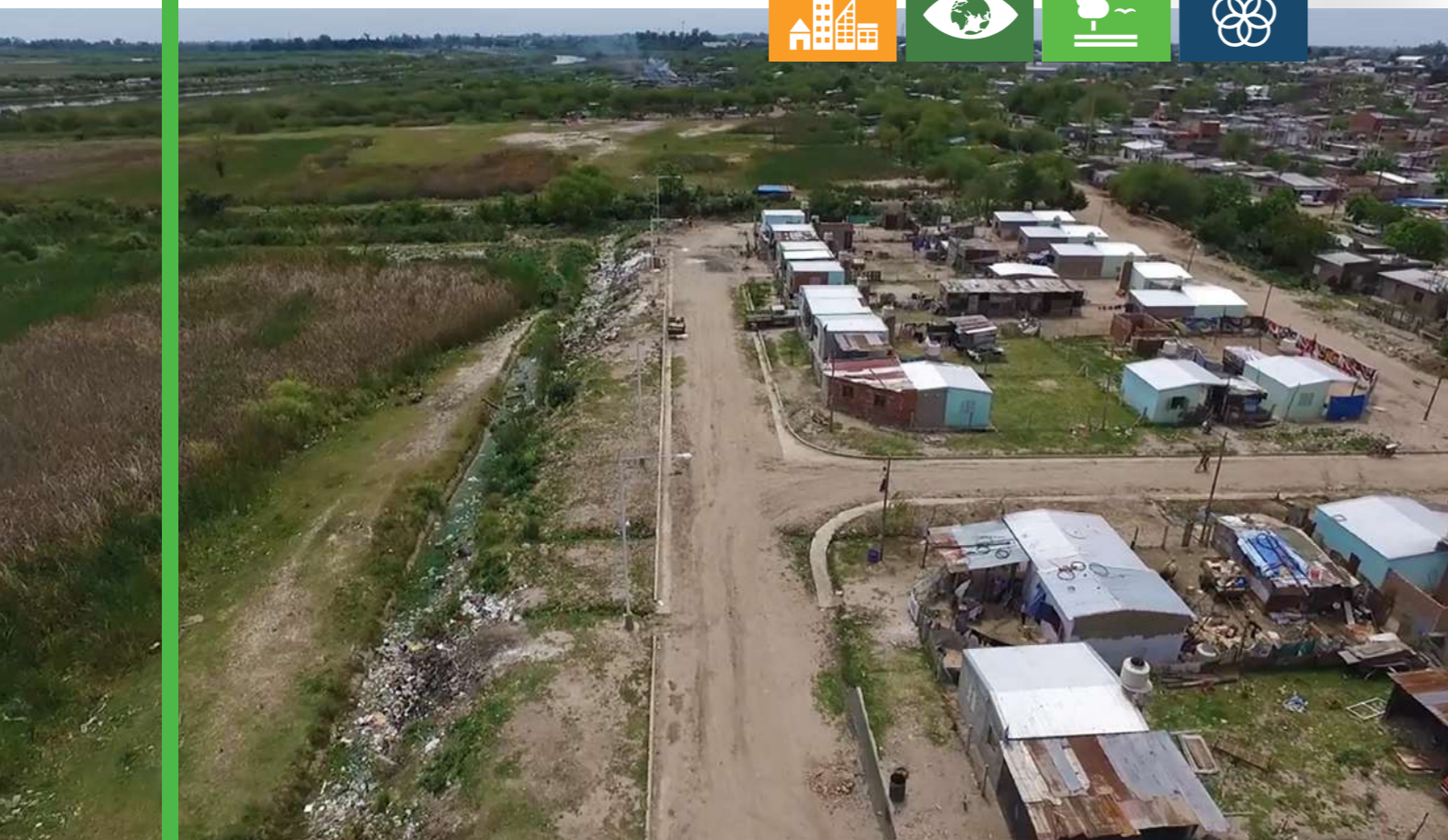
### SDGs addressed

- Goal 1: End poverty in all of its forms
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 5: Achieve gender equality and empower all women and girls
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable employment and decent work for all
  - Target 3: Participatory, integrated and sustainable human settlement planning and management
  - Target 8: Support positive economic, social and environmental links between urban, peri-urban and rural areas employment and decent work for all

 Santa Fe, Argentina

# WESTERN URBAN NATURAL RESERVE

## Embracing The Hydroclimatic Risks



The city of Santa Fe is situated in north-eastern Argentina, near the junction of the Parana and Salado rivers. It has a population of 417,224 growing at a rate of 11.42% per annum. The surface area is 268 square kilometers, with a population density of 1620 persons per square kilometer.

After two major disasters, namely the overflow of the Salado River in 2003 and the heavy rains that caused widespread flooding in 2007, Santa Fe adopted Disaster Risk Reduction as a core policy and an integral component of the city's development plan. The Western Urban Natural Reserve (WUNR) is an innovative initiative incorporated in the current development plan, and co-financed by the French Global Environment Facility. It started in 2015, with the objective of transforming 142 hectares of reservoirs into a protected natural area. In this way, the reservoirs were incorporated into the system of Green Public Spaces in order to benefit more than 80,000 residents, promote environmental awareness, and improve quality of life in the city. The ini-

tiative also promotes economic and social development through training and advice for the transformation of informal waste

collectors, creation of community orchards and the establishment of a plants nursery for the restoration of this degraded area.



### ▶ BACKGROUND ◀

This initiative is framed in the City Ordinance N°12179 titled "Urban Natural Reserve and Climate Risk Management Project", passed in April 2015. It is also part of the *Santa Fe Resilience Strategy* that describes the city's relation to the surrounding rivers, and includes key data to understand the territorial risks, as well as the actions needed to mitigate them.

It is also based on the *Disaster Risk Management Policy* and the "Comprehensive Development Plan" (*Integrated Urban Program (PUJ)*).

The geographic location of the city of Santa Fe defines its character and development context. The city is located in the flood valleys of two rivers Parana and Salado - with their cycles of rain and floods. In this context, the western

neighbourhoods face a double vulnerability. People in low-lying areas next to the Salado River have a higher flood risk. In addition, because the city grew westward without an orderly urban planning policy, the neighbourhoods are mostly slums, with precarious houses and no accessible to basic public service. Unemployment is high and 350-400 slum dwellers work in informal waste collection and urban animal husbandry.

### ▶ IMPLEMENTATION ◀

This initiative has a planned duration of 48 months during which it should:

- Create the Western Urban Natural Reserve (WUNR) through: physical boundaries legal definition and formalization of a western urban limit. This should be supported by the generation of new

urban land for the relocation of families in flood risk areas, construction of an accessible square and an administrative building to receive visitors as well as the establishment of a nursery of native plants for environmental restoration.

- Reduce flood risk through the deepening of reservoirs, the development and nurturing of a local risk management culture and the construction of a "Flood Memorial".

- Promote the socioeconomic development of informal waste workers, planting of urban orchards and other sustainable work initiatives.

### ▶ PARTNERSHIPS ◀

The initiative benefits from a diversity of partnerships including:  
Public-Public:



- French Facility for Global Environment (FFEM) co-finances this initiative.
- National University of the Litoral (UNL) provides technical assistance.
- University and City of Rennes (France) serves as an institutional and scientific partner.
- Government of the Province of Santa Fe and National Government of Argentina are part of the Advisory Council.
- Public-Civil Society -Community:
- Movimiento Los Sin Techo (Homeless people's movement) and "The Flag of the Humble Cooperative" assist in building homes for the relocated families.
- Habitat and Development Foundation is part of the Advisory Council.

### RESOURCES

The total budget of this initiative is 3,247,612 euros. About 30% of that amount is contributed by French Facility for Global Environment (FFEM). This grant is provided by The AFD (Agence Française de Développement). The human resources are provided by the Municipality of Santa Fe, using the municipality employees from the different Secretariats. Each one of these areas has technological and public management resources that are used to address different challenges.

### INNOVATIVE ASPECTS

Many national and international experts have described the Western Urban Natural Reserve as an innovative, revolutionary and outstanding initiative because it combines different dimensions such as education, poverty reduction, social inclusion with sustainable management of the environment, water resources, land and other natural resources. The comprehensive approach to the socio-economic and environmental vulnerabilities of a specific part of Santa Fe gives genuine value to one of the most important green lungs of the city and promotes the sustainable use of public space.

This initiative is not an isolated intervention, but part of a specific program *Integrated Urban Program (PIU)*. This particular management tool was designed and implemented by Santa Fe City Council in 2008, following the example of Medellin, Colombia. "*West Integrated Urban Program (PIU)*" is intended to gather available public resources to reduce geographic and socioeconomic vulnerability in neighbourhoods in the west area of the city. The Western Urban Natural Reserve is part of this dynamic, adding the environmental dimension as a key element in the development of the risk management process

and the socio-economic improvement of the community.

### CHALLENGES

Several challenges are encountered in the implementation of this initiative.

- The community's ownership of the initiative make it sustainable. Through education, workshops and lectures involving those residents from the west side of the city in different activities of the project, the challenge of ownership is addressed.
- Citizens' participation and commitment is enhanced through incorporating their views and suggestions. These are collected through surveys.
- A possible change of local government is always a concern – a new government may not be as committed. To face this, in 2015, the City Ordinance N°12.179 declared the land area of the initiative as a Natural Reserve, including it in the Nature Reserve Systems of the city (City Ordinance N°12.025). Also, the initiative is now widely recognized as an important part of the Santa Fe Resilience Strategy.

### RESULTS

At the local level, the following

planned outcomes have been realized:

- Delimitation of the WUNR and formalization of a western urban front and generation of new urban land: Up to now, 250 meters of street and 29 plots (first stage) have been created. In the near future 700 meters of street and 70 plots will be completed (second stage).
- Re-housing families in informal settlement: From 90 families living in the zone more than 30 have been relocated into safe areas and the exercise is ongoing;
- Building 2,700 square meters of access squares, a nursery and an administration building by the year 2019; Reducing flood risk: 43,000 square meters have been excavated to deepen the reservoirs.
- Developing a local flood risk culture: the city has published two short books titled "*The city and the river*" and "*Live with the River*", and a "Flood Memorial" will be built.
- Socio-economic development: Of 171 families living from the informal collection of waste, 106 already have healthier and more sustainable work.

The stay on track, city of Santa Fe has also developed a program called "*How we go - Santa Fe*" to develop official indicators to monitor and evaluate the quality of life of local citizens. Some of the indicators that are used in the initiative are:

- Number of informal waste collectors rehabilitated.
- Number of families resettled.
- Square meters of green space per inhabitant

In addition different tools have been developed and are being applied to enhance the results.

For more effective communication, a WUNR platform provides information to citizens about the initiative and promotes citizens' participation. Agreements with strategic actors help to achieve the objectives while Municipal ordinances provide the policy and legal support to safeguard the initiative. Finally, an Observatory of Environment and Climate Change has been created in collaboration with the UNL, to monitor the environmental quality of reservoirs and the hydro-climatic variables, through measuring and using specific equipment and software developed for the initiative.

### LESSONS

Santa Fe has become an example in terms of local public policies for risk management, and has been recognized internationally for its capacity to learn from disasters to build resilience.

From the WUNR other cities can learn:

- How to simultaneously improve the quality of life, the environment conditions and the needs of the local population.
- How to promote citizen engagement, NGO and institutions' involvement.
- How to build a special identity of the neighbourhood and a hydro climate risk management culture.
- How to embrace living with rivers and water-related shocks, and to build resilience.
- How to promote and revalue degraded areas for public use through environmental restoration.
- How to raise awareness on risk management and climate change mitigation, and on the importance of indigenous flora and fauna.

This initiative also includes a stage of international exchange and cooperation with cities around the world that face similar challenges. France and countries from Africa are potential destinations for cooperation. Already a learning and exchange of experience programme with Porto Novo (Benin) and Duala (Cameroon) has been started.

SDGs addressed:

SDG11: Sustainable Cities and Communities

- Target 1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- Target 2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding pub-

lic transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

• Target 3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

• Target 4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage

• Target 5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

• Target 6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

• Target 7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

• Target 8: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

• Target 9: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

Salvador, Brazil

## Environmental Recovery Program of the Canabrava Park & Caravana da Mata Atlântica



Salvador, a coastal city in the north-east of Brazil, is the capital of the Brazilian state of Bahia. It has a population of 2,953,986, growing at a rate of 6.3% per annum. The land area is 693.00 square kilometers with a population density of 3,859 inhabitants per square kilometers.

Over the past 10 years, with agricultural development and urban expansion, an average of 5000 hectares of forest nationwide has been destroyed every year, thus seriously threatening biodiversity in Brazil. Moreover, climate change has exacerbated the loss of plant species diversity. The two initiatives from the city of Salvador address the issue of environmental degradation caused by unregulated urbanization which, in turn, negatively impacts the city and its residents.

### CARAVANA DA MATA ATLÂNTICA

The Mata Atlântica (Atlantic Forest) is a South American tropical rain forest that extends along the entire Atlantic coast of Brazil, and inland as far as Paraguay and parts of Argentina. By strengthening efforts to protect Mata Atlântica, which is considered one of the five most important biodiversity hotspots on the planet and functions as a carbon sink of global importance, the "Caravan" aims to achieve SDG 11, as well as the Aichi Biodiversity Targets agreed at the UN Biodiversity Convention, as well as the Paris Agreement.

Caravana da Mata Atlântica is a participatory program that aims at engaging citizens in the planting of trees and other activities aimed at creation of an ecologically-conscious and sustainable culture in Salvador. It is an itinerant action in which a specialized team of the Sustainable City and Innovation Secretariat (SECIS) develops and implements a wide range of actions. These can include working with a community, a group of interested citizens, students from a school or local inhabitants in a landscaping, afforestation or urban garden project. During the Caravan, SECIS raises awareness of the importance of preserving and protecting the environment, and encourages citizens to plant trees and gardens and to demand more green spaces from the public and private

sectors. The Caravan is implemented under the auspices of the Municipal Policy for the Environment and Sustainable Development and the Urban Afforestation Directive Plan.

#### ▶ BACKGROUND ◀

Salvador used to have all of its territory covered with the Mata Atlântica, which is considered one of the five most important biodiversity hotspots on the planet and serves as a carbon sink of global importance. Nowadays Salvador has very few significant areas of the forest remaining. The deforestation occurred without criteria or any type of control, motivated by the expansion of the city and by an unsustainable economic development, which built over existing green spaces and channelled rivers indiscriminately. According to the National Institute of Spatial Researches (INPE) Bahia was the second state on the deforestation ranking in 2012. Besides causing the rise in temperatures, creating heat islands and affecting water resources, the deforestation of the city and surroundings caused many wild animals to invade urbanized areas of the city, creating chaos or endangering either the lives of the animals or of humans.

Most of the areas with few or no green spaces and trees are usually inhabited by poorer and vulnerable communities, reinforcing the spatial inequality in the city. Such neighbourhoods are exposed to warmer temperatures due to heat islands, more polluted air and less natural space for leisure. In order to reverse this scenario the "Caravana da Mata Atlântica" was created. It aims to change the culture of citizens by making them aware of the importance of preserving green spaces and of regenerating the environment. Activities include planting trees and enhancing vacant areas with urban gardens - including in schools.

#### ▶ IMPLEMENTATION ◀

Caravana da Mata Atlântica aims firstly at increasing green spaces in the city by planting and distributing indigenous seedlings in schools, parks, and squares as well as creating ecological corridors. The goal for the city is to plant 100,000 trees and to renew the plants and trees in 56 Km of street and 260 public spaces, as well as to create seven new parks by 2020.

Secondly the re-greening campaign is accompanied by environmental education initiatives, for children and adults, in

order to achieve a more sustainable life-style, by 2049.

The leading partner is The Brazilian Network for the Mata Atlantica that gives advisory and technical support - including the creation of the Urban Afforestation Manual. The Brazilian Institute of Environment and Renewable Natural Resources (Ibama) is also an important partner, helping with the recovery and control of Mata Atlantica' fauna and flora. Similarly, SECIS has partnered with universities and colleges to help with the development of studies as well as for volunteer work and internships. To ensure public participation SECIS has developed partnerships with many community groups, and public and private sector organizations for the urban food gardens and afforestation projects.

One of the main partnerships is with municipal public schools and the Education Secretary to plant food gardens and fruit trees in schools with the participation of the students. Other examples are the partnerships with Hebert Daniel Foun-

ation to increase urban food gardens in public spaces, and Camisaria Souldilla, an important partner in one of the big tree planting events. Similarly, SECIS has partnered with Bahia Viva Foundation to build a municipal park.

To date, SECIS has spent US\$ 445,127 on the planting new trees and US\$ 24,226.00 on the maintenance of green spaces. Additional funding was provided by partners, such as Camisetaria Souldilla and Hebert Daniel Foundation. As mentioned before, Ibama and The Brazilian Network for the Mata Atlantica have given technical resources. Similarly, the Catholic University of Salvador and the colleges Unijorge and Centro Técnico Irmã Dulce have deployed students for volunteer work and developed studies to help the programme.

## ▶ INNOVATION ◀

The initiative can be considered

mostly evolutionary. It has evolved and improved, incorporating a Disk Mata Atlantic which is a hotline any citizen can call to ask for seedlings or to arrange a planting event in their neighbourhood. It has also evolved to start supplying watering cans to the citizens and by encouraging people to take care of the areas and trees they planted by "adopting" these places. The development of a comic book that is distributed to children and that teaches them environmental education and sustainable life styles, has also helped to change the culture and the importance citizens attach to the city's environment. Very importantly, an innovative approach is being applied in the design and implementation of the strategy. The design and implementation are participative, improving as citizens give feedback, as students develop studies about it, and as technical partners give suggestions for improvement. It also evolves as SECIS measures the outcomes and can better analyse what is producing better outcomes and what needs to improve.



## ▶ RESULTS ◀

The changes have been mostly local, at the municipal level. In these past 5.5 years of programme, the Caravana da Mata Atlântica planted 52,520 trees and re-afforested 77 kilometres of streets and avenues and planted 385 trees in avenues and sidewalks around the city. It also produced eight urban food gardens, two orchards and five school food gardens. It also distributed 8,000 tree seedlings from Mata Atlântica to citizens for planting in their neighbourhoods.

SECIS has also been encouraging citizens to plant and preserve the environment and raising awareness of the importance of the environment with initiatives such as the distribution of the Comic Book "Sustainable Group" (characters and stories for children that teach environmental education). This is also helping reduce the cost of replanting trees destroyed by citizens. As citizens adopt the plants and become aware of their importance, they take an active part in fighting against vandalism and deforestation. A very positive impact observed was that in the places where the initiative has been active in raising awareness of and in engaging community in environmental projects, the plant replacement index has diminished to 5%, as opposed to being 40% in other places.

In addition, the program will increase the environmental equity between richer and poorer areas of the city, improve air quality and reduce the heat sink effect of those areas. A successful example was the environmental regeneration of an area

that was an old dumping ground, where the SECIS planted 400 trees and partnered to plant another 15,000 by 2022.

Similarly, the City Park, which had been abandoned and had become a dangerous place, was revitalized, with more than a thousand trees planted. It has since become a popular family and community recreation and gathering space. Over 1,200 events, attracting more than 1.2 million people have been held there. Both of these initiatives will help Salvador's citizens to reconnect with nature and green spaces, and understand the importance of those places for the city and for their well-being.

Besides counting the number of new trees planted in the city and new green spaces, SECIS is also counting the number of trees that are vandalized or stolen and compares it with the previous years in order to measure the plant replacement index. This counting is done physically by its technical team. The Caravana da Mata Atlântica team also receives feedbacks from the work done with communities and schools. This helps them to have a qualitative measurement of the program that is complemented by newspapers, television and magazine articles reporting on the programme.

To attain the desired outcomes to increase the number of trees planted and of the creation of green spaces in the city, SECIS realized it could not depend solely on the annual public budget and went to look for partnerships with businesses and civil-society organizations. Business, associations, NGOs and community groups have dedicated more and more time and

resources on the various projects.

To fight vandalism and the theft of trees, SECIS developed educational methods to educate future generations that are concerned about the environment. The partnership with municipal schools include, in addition to planting and food garden projects, the inclusion of curricular and extra-curricular subjects and activities to highlight the importance of Mata Atlantica, and environmental sustainability in general. Further, universities and colleges also help to raise awareness of the youth on the theme, not only by offering volunteering, internships and studies in partnership with SECIS, but also by increasing the discussion of the subjects within the academic environment, with more degrees related to the area being offered, encouraging the production of academic articles, researches and extension projects about the topic.

There is also a growth in the number of environment-related start-ups in the city mostly in recycling and re-use of waste- including waste water.

This has put Salvador on the map in Brazil, the region, and globally, as a leading city for environment and climate change action. As an example, the city was chosen to hold the 2019 Latin-America and the Caribbean Week on Climate Change. Similarly, officials from other States have been demanding that their own mayors and governors adopt similar programmes. Hopefully this recognition will also attract sustainable businesses and start ups in addition to increasing the quality of life of its inhabitants.

## CANABRAVA PARK RESTORATION

The Canabrava Park restoration project is an innovative practice initiated by the Sustainable City and Innovation Department of Salvador under the Atlantic Forest Protection and Restoration Framework. A large number of young people participating in this park restoration are from marginalized communities which have been the most seriously affected by deforestation. The young people have planted 20,000 native trees in Canabrava Park in three stages, attempting to reverse

the negative impact of urban development through a comprehensive reforestation campaign also aimed at improving public space and raising public awareness of environmental protection.

## ▶ BACKGROUND ◀

Canabrava, which covers an area of 52,000 square meters, was a landfill for the city from the 1970s to the end of

1990s. During these 20 years, a large amount of carbon dioxide and methane gas were emitted in Canabrava. Some poor people eked out a living by collecting recyclable waste and even food in the landfill, which posed a great threat to their health. In 2000, the landfill was converted into a city park, but without addressing the soil pollution that had been caused by the landfill. Subsequently, years of inadequate regulation of waste disposal resulted in severe degradation of the land of Canabrava



Park. The carbon dioxide emitted resulted in temperature increase and faster spread of diseases. In the past 15 years, there have been almost no trees in this region, and the residents seldom go to the park for recreation.

In addition, Brazil in general, is faced with many problems in the process of urban development, one of which is the large gap between the rich and the poor and the resulting social inequality. In Salvador, most poor and vulnerable groups bare concentrated in areas affected by harsh climate or environment, such as heat island effect, air pollution and frequent floods caused by heavy rainfall and poor drainage. There are not enough trees and green space around communities and there are no places for recreation.

**The objectives of the Canabrava Park restoration initiative include:**

1. Rebuilding the city park affected by the landfill to improve overall public health, reduce the incidence of diseases, provide more green space and recreational places for local citizens, as well as reduce social inequality caused by unbalanced urban economic development.
2. Planting local tree species to restore biodiversity, increase the carbon sink capacity of Canabrava Park, reduce greenhouse gas emissions and increase the coverage rate of urban green space. In this way, the heat island effect and flooding risks will have smaller impacts on this region and Canabrava Park can be more effective in contributing to combating climate change.
3. Raising local residents' awareness of environmental protection and making them participate in environmental protection activities by encouraging schools, private enterprises and communities to jointly participate in tree planting projects.

**IMPLEMENTATION PROCESS**

Initiated by the Sustainable City and Innovation Department of Salvador, the Canabrava Park restoration initiative started in 2015. Private enterprises and community members jointly participated in this endeavor. As a waste disposal technology provider, Odebrecht Ambiental was re-

sponsible for converting urban sludge and solid waste from industrial effluent treatment plants into plant fertilizer through anaerobic fermentation. Bahia Association of Forest Based Companies and Paper, Pulp, Cardboard, Wood Pulp and Paper and Cardboard Artefacts Industries Trade Union of Bahia provided 10,000 tree saplings for the reforestation exercise. Jorge Amado University Center, Revita Business and members of some neighboring communities participated in planting the saplings.

The planting procedure is as follows: after receiving and confirming citizens' request for saplings, relevant technical personnel inspect the planting sites to determine the best types, quantity and size of saplings that should be used. They also involve members of the community in the tree planting and grant participants "ownership" of the new trees and the planting area. After that, they set the date of sapling planting and teach participants how to plant and maintain saplings.

Trees are planted mainly in the wet season during which trees can grow faster. The location, pictures and characteristics of each tree are recorded. After planting trees, citizens can find relevant information about the trees they planted on the initiative's website. In addition, citizens can call the Atlantic Rainforest Hotline to obtain free seeds or seedlings, including 15 local fruit tree species, such as Brazilian grapevines, guavas and lobeira (*Solanum aculeatissimums*).

**RESULTS**

The restoration of Canabrava Park has successfully changed a dilapidated landfill into a green place for citizens' recreational activities. This has made Salvador a model and pioneer in Brazil's urban environmental restoration and a leader in the fight against climate change. In addition, this initiative has improved the international status of Salvador in sustainable development as well as its international prestige in the C40 Forum and other international organizations.

In the first year of the initiative, carbon dioxide emissions in this region were reduced by 31,500 tons and the local temperature was effectively abated. According

to a research conducted by the University of Sao Paulo, in the first 20 years, one tree can absorb about 140 kg of carbon dioxide. In the next 20 years, carbon dioxide emissions are expected to be reduced by 2.8 million tons with 20,000 trees planted in Salvador. The Canabrava Park restoration initiative has been listed as one of the 100 urban solutions by the C40 Cities Climate Leadership Group, providing important reference for other cities in terms of the fight against climate change.

Moreover, the park restoration has greatly improved the overall local public health, reduced the health risks of nearby residents, and reduced the incidence of diseases, such as respiratory diseases caused by open landfills. The initiative has provided local residents with more places for leisure and recreation. It has contributed to reducing inequality as everyone now has access to recreational public space and green space, promoting a sense of place. Tree planting activities also provided more opportunities for community members to communicate and interact with each other, thus improving social cohesion.

**INNOVATION**

The main innovation of this initiative lies in the successful transformation of a landfill into a carbon sink, thus reducing carbon dioxide emissions, increasing the coverage of urban vegetation and helping Salvador combat climate change.

In terms of tree species selection, most of the trees planted in other parts of Brazil are exotic species, while the trees planted in Canabrava Park are mainly endangered native species of the Atlantic forest. This measure has effectively slowed down the loss of plant species diversity in Brazil and made citizens have a better understanding of the native flora and the importance of the Atlantic rainforest.

From the perspective of garbage disposal, this initiative converts urban sludge and solid waste from industrial effluent treatment plants into plant fertilizer through anaerobic fermentation. It is an effective soil management method which makes urban waste return to the production chain and promotes the development of an urban circular economy.



In addition, the government cooperates with private enterprises, schools and citizens to ensure the research and successful implementation of the initiative. Private enterprises provide saplings for tree planting activities to solve the problem of the shortage of materials. The cooperation with nearby colleges and universities helps promote their research on environmental engineering and provides students with the opportunity to conduct experiments and do research in real life conditions. Perhaps the biggest benefit has been the community participation and engagement, ensuring a sense of co-ownership and co-creation of a common good. This has been key to the sustainability of the initiative, to protect the trees and the green spaces and have people take pride in creating a sense of place and identity.

**CHALLENGES**

The challenges faced by, and lessons learned from both initiatives (Caravana de Mata Atlantica and Canabrava Park restoration) are very similar.

The biggest obstacles have been the low availability of funding, the poor socio-economic state of the city and vandalism. Financially, even though the environmental budget has increased in the past few years, it is still less than ideal. Therefore, SECIS is constantly looking for partnerships to maintain and increase

the reach of the Caravan. The socio-economic state of the city, which still lacks basic infrastructure in some areas and has problems with its waste management, basic sanitation, adequate dwellings and high unemployment rates and social inequality, does not allow the prioritization of environmental initiatives and projects by the government. Those problems also make the environmental themes to become of lesser relevance for society, and thus there is some resistance on spending a high amount of money on initiatives such as the Caravan. Lastly, vandalism and the theft of trees have been common and they jeopardize some new projects as well as existing green spaces, as they discourage those residents who want to participate.

**LESSONS**

The restoration was made possible by planting native tree species and making disposed waste into fertilizer. Further, the restoration of the land can provide local residents with more green space and improve their living conditions. It can also promote the development of a circular economy around waste, enhance the economic strength of the region and effectively alleviate the imbalance of urban economic development and the inequality in terms of access to clean air and recreational space.

By cooperating and exchanging with

colleges and universities, private enterprises and community members, the government can coordinate the efforts of all parties to promote the research and implementation of the initiative and instill co-ownership and effective engagement, an important reference for other cities.

In order to succeed, initiatives like these need sustained engagement of the community as well as forging of a diversity of partnerships. Data collection and feedback loops ensure improvement of the implementation process and enhance results. For long term sustainability, educating the younger generation in both formal and popular education is important. Further, environmental policies can also help community building and inculcate a sense of community in many areas. Finally, environmental equity has spill over results in reducing economic and social inequalities.

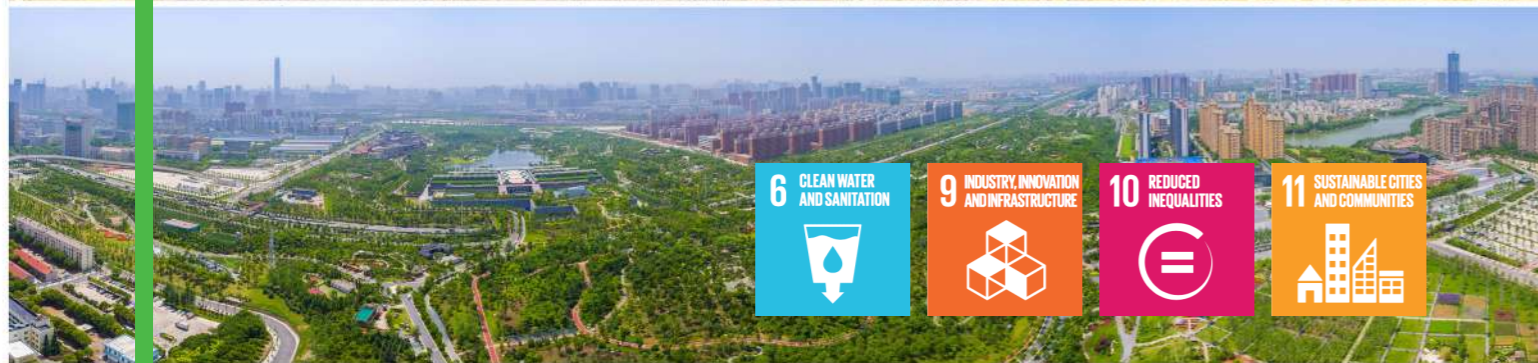
**SDGs addressed**

- Goal 6: Ensure availability and sustainable management of water and sanitation for all;
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable
  - Target 4: Safeguard cultural and natural heritage
  - Target 6: Improve air quality and manage municipal and other wastes
  - Target 7: Universal access to safe, inclusive and accessible green and public spaces, in particular of women, children older persons and persons with disabilities
- Goal 13: Take urgent action to combat climate change and its impacts
- Goal 15: Life on Land - protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

 Wuhan, China

# THE REBIRTH OF URBAN WASTE DUMP

## Ecological Treatment and Return of Plurality



Wuhan is the largest city in central China, with a population of 10.9 million that is growing at a rate of 0.40 per annum. It has a surface area of 8,569 square kilometres and a population density of 78,687 persons per square kilometre. It is located in the eastern part of Hubei Province, in the middle reaches of the Yangtze River. It is a historic city and since ancient times, the three towns of Wuhan (Wuchang, Hankou and Hanyang) where the Yangtze River meets the Han River have a reputation as "thoroughfares in nine provinces" and have been on the ranking list of most liveable cities in China many times.

In recent years, due to the continuous increase of the urban population and the improvement of people's incomes and standard of living, a corresponding increase in urban garbage has resulted in most of the waste treatment plants in Wuhan running at high loads and a continuous deterioration of the urban environment.

The now abandoned Jinkou landfill site was once the largest urban domestic waste landfill site in Wuhan and one of the largest in Asia. In 2012, with the support of Wuhan government, the area of Jinkou Landfill was selected as the main venue of the 10th China International Garden



Expo (2015). This was a contentious decision at the time with many arguing against the idea. But local leaders prevailed and the initiative represents a first in China in terms of building a recreational area and international expo venue on a closed landfill.

Eventually, thanks to the international garden fair, Jinkou garbage dump turned into the most charming ecological

landmark of Wuhan, and also became a demonstration site on an innovative way to solve the problem of closed waste dumps. The restoration was awarded the C40 Award of the UN Climate Conference in 2015, the China Human Rights Development Case Award in 2015, the China Habitat Environment Model Award in 2016 and the Guangzhou International Urban Innovation Award in 2018.

### ▶ BACKGROUND ◀

Wuhan Jinkou Landfill Site is located on the outskirts of Jinkou Zhanggong Dike in the northwest suburb of Hankou. It was built in 1998 to cater for garbage disposal in Hankou area. The total land area is over 400,000 square meters. The total amount of landfill garbage has been over five million cubic meters since it was put into operation.

On 1 July ,2005, the largest landfill site in Wuhan was decommissioned early due to complaints from residents around the city. However, although the management department had sealed up the landfill, the negative effect of the landfill on the environment had not been eliminated. The waste gas, waste water and waste resi-

due produced by the landfill, continuously polluted the air, soil and groundwater, and caused secondary pollution to the surrounding environment.

Equally serious was the lack of any systematic monitoring of the pollution caused by the site for a period of 10 years. According to the survey of the three urban districts of Jiangnan and East-West Lake, nearly 100,000 residents live in 14 communities around the Jinkou garbage dump. The nuisance caused by pollution resulted in an urban development divide whereby the affected neighbourhoods witnessed less quality of life and less local economic development. The Tenth China International Garden Expo transformed the Jinkou garbage dump into a garden park. The renovation represented a strategic attempt by Wuhan city to turn its en-

vironmental situation around. The specific objectives of this strategy included:

- To reduce the man-made adverse impact of the city on the environment, ensure the overall ecological safety of the city, and provide clean air, clean water and environmental sanitation for urban residents.
- To close the "pollution gap" and reduce the social and economic inequalities caused by pollution, for example in the residential neighbourhoods surrounding the landfill site;
- To establish a new eco-friendly urban development model, and promote innovation in order to achieve a balance between industrialization on the one hand and an inclusive and sustainable city culture on the other.



### ▶ IMPLEMENTATION ◀

The overall planning, direction and coordination of the project was shared by the National Housing and Construction Department, Hubei Provincial People's Government, Wuhan Municipal People's Government and Wuhan City Garden and Forestry Bureau;

- Funding came from several partners with a total investment of RMB 4.75 billion (approximately USD 670 million), of which 25% was direct investment from the Wuhan Municipal government, and 75% financed by Wuhan Landscape Construction Development Company Limited. At the project management level, the participants included engineering, design and other relevant experts from 82 Chinese cities and 12 foreign countries. There were more than 100 construction teams working on more than 100 types of large and small projects in parallel. The government of Wuhan took the lead role for overall coordination and planning.

- At the technical level, this initiative was led by Tsinghua University especially with regards to the use of aerobic ecological remediation technology. This technology has four advantages, such as the rapid

degradation of organic waste, no secondary pollution, low greenhouse effect and low cost of leachate treatment.

- To encourage citizens' participation, the city government carried out the "My Garden My Home" activities, and combined the Municipal Party Committee, the City Civic Affairs Office, the City Management Committee, the City Education Committee, Civil Affairs, Housing Administration, Tourism Bureau, League City Committee, Jiangnan District, Qiaokou District, the East Xihu District special interest groups and other municipal departments. These were organized into the special units and participated in regular meetings and thematic symposia to help raise awareness of the issues, stimulate public discussions and debate and engage the inhabitants of the city, especially at the district levels.

- At the national and international level, the Yangtze River Civilization Museum in 2016 launched the "River Dialogue" international forum, co-sponsored by UNESCO and the Wuhan Municipal People's Government and co-hosted by the Wuhan Municipal Bureau of Culture the Wuhan Foreign Office and the Yangtze River Civilization Museum. The purpose of forum was to provide a platform for learning and

exchange between the world's great river basins and to take advantage of the convergence of the latest development experience in watershed management and nature-based solutions.

### ▶ RESULTS ◀

After 12 months of full load aerobic operation, all indicators regarding the Jinkou landfill met the national standards stipulated in "Technical Requirements for Stabilizing Site of Domestic Landfill" (GB/T25179-2010).

This initiative not only completed the landmark achievements such as ecological restoration of Jinkou landfill site and the establishment of an ecological "bridge" linking several different parks, gardens and water bodies, it also established the international garden art centre, the Yangtze River Civilization Museum, and constructed 117 exhibition gardens with remarkable ecological benefits. The ecological bridge consists of a remediated dyke and reservoir, ten previously independent gardens, and a green "corridor" from North to South totalling 50.5 km in length, with an average width of 3.1 kilometres representing 170 square kilometres of ecological parks

and gardens. This blue and green space serves as a "lung" for the city of Wuhan capable of absorbing 63,500 tons of smoke and dust every year, releasing 545,000 tons of oxygen and helping to reduce noise pollution and the heat sink effect of the city.

At the same time, a complementary initiative around the park saw the realisation of 19 new roads, 2 bus stops, more than 20 bus lines, two subway lines and other infrastructure. The multiple improvements have brought business opportunities, boosted local employment and raised the real estate value in the previously negatively affected neighbourhoods. On 10 December, 2015, at the 21st United Nations Climate Conference in Paris, Wuhan won the Third Urban Award of the C40 Urban Leadership Group by sharing the successful example of the landfill-turned-park. It is China's first international award for cities combating the effects of climate change.

### ▶ CHALLENGES ◀

In the course of implementing this initiative, there have been many obstacles and difficult problems, such as garbage disposal, reconstruction of open ditch sewage lines, shantytown demolition, urban village reconstruction, subway and railway construction. The first challenge to address was how to solve the technical problem. The Jinkou landfill with hundreds of millions of cubic meters of garbage, would take at least 30 years to clear through natural degradation, and the total cost of disposing the waste would be up to 1 billion RMB (approximately USD 140 million). With the combination of "aerobic remediation" and "anaerobic closure", the Jinkou garbage dump took only two years to resolve the environmental and safety hazards and at a cost of 200 million RMB.

The second challenge was to mobilise and garner the support of the inhabitants affected by the initiative. The area surrounding the landfill site is located in a difficult area with complex land rights belonging to more than 20 different entities and located in four different jurisdictions. In addition, there were some 200,000 square meters of old structures of different types that no longer complied with building codes and standards and needed to be

demolished which would inevitably lead to disputes and protracted negotiations. In order to ensure a timely and fair solution to the above problems, the Municipal Government of Wuhan used a combination of resettlement and compensation. Affected residents were given the choice between a new housing solution nearby or a cash compensation, both solutions being based on the value of the land they occupied. Residents were also encouraged to participate actively in the ecological restoration and remediation of their neighbourhood. Special courses were organised to impart knowledge and skills and to explain what was being done and why. Residents were empowered by being delegated with recognised roles and responsibilities, providing a strong sense of ownership and high degree of participation and engagement.

### ▶ INNOVATION ◀

This initiative attempts to bridge the "pollution divide" with ecological restoration, in order to transform the environmental and social conditions of residents. This in turn serves to reduce local development imbalances and their accompanying inequalities. The initiative

On waste disposal, after repeated verification, the design party finally approved the use of two technologies: "Aerobic Remediation" and "Closure Treatment". This is the largest landfill in China to use the technology.

On resource mobilisation, the initiative has used innovative funding partnerships, including contribution by different entities in Wuhan and crowd funding, tapping funds from sources in and outside China. Significant contributions in personnel, as well as expertise including designs and ideas were mobilized from Wuhan, China and the world. A high percentage of the ideas proposed by domestic and foreign experts were used in the implementation of the various projects. One of the novel ideas of the initiative was to make the running of the park commercially viable. The park today has become a coveted site for special occasions such as weddings and birthdays. The restored natural environment has made the park a major attraction and world class recreational zone. This, in turn, has attracted a lot of small business-

es as well as start-ups that are always on the lookout for unique spaces to work and play in.

### ▶ LESSONS ◀

This initiative demonstrates exemplary practice to resolve environmental pollution and related long-term urbanization issues. The application of the "Garden+Social Humanity" approach for ecological restoration has addressed pollution, narrowed the ecological and economic development gap caused by pollution within the city, and reduced income disparities and inequality.

Further, the crowd-funding and co-construction Model mobilized government, national and international experts, and people from all walks of life, to tackle the huge environmental challenge that was facing the City of Wuhan. While the primary objective was to resolve the landfill challenge, the model enabled the city and its inhabitants to combine resources for different projects and initiatives to scale up the landfill remediation effort to become a city-wide landscaping and ecological remediation initiative creating eco-bridges and a green and blue corridor.

The Wuhan experience is now being replicated in different shapes and forms starting with a second landfill site in Wuchang district. After having been recognised internationally, many cities throughout China conduct study tours to Wuhan to learn from the city's experience.

#### SDGs addressed

Goal 6: Ensure availability and sustainable management of water and sanitation 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

- Target 3: Participatory, integrated and sustainable human settlement planning and management

- Target 6: Improve air quality and manage municipal and other wastes