



WORLD
RESOURCES | ROSS
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PRIZE FOR CITIES

Transformative projects
igniting citywide change

2020–2021







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Welcome to the 2020-2021 WRI Ross Center Prize for Cities.

We launched this cycle of the Prize in February 2020, unaware of how the global pandemic would upend city life and the devastating toll it would take on millions across the globe. As the impacts of this global tragedy are coming into sharper focus, one thing is clear: we must be more determined than ever to make our communities more inclusive and sustainable.

In this disruptive time, we nonetheless received unprecedented interest in the Prize. The 2020-2021 theme, "Inclusive Cities for a Changing Climate," is more important than ever. The global pandemic has widened existing fault lines tied to income, race and postal codes, but cities also face longer-term trends related to climate change that require them to think creatively about how to lift up already vulnerable and marginalized groups.

We chose the 2020-2021 theme to identify global leaders in tackling the climate crisis and urban inequality at the same time. Selecting five finalists, and from these, one grand prize winner was not an easy task. WRI's experts reviewed over 260 submissions over multiple evaluation rounds and our independent jury of leading urban thinkers and practitioners then selected one of these to receive \$250,000, while the four runners up each received \$25,000.

The 2020-2021 finalists reflect a breadth of approaches and show what is possible when people are put at the center of responses to interconnected challenges. They offer powerful and innovative stories of positive, lasting change from which the global community can learn. Most importantly, they remind us that even in a time of crisis – indeed, especially in a time of crisis – the work of creating more just and sustainable cities must go on.

I invite you to learn more about each of the 2020-2021 finalists and encourage you to think for yourself, how can I become an urban changemaker?



A handwritten signature in black ink that reads "Ani Dasgupta". The signature is fluid and cursive, with a long horizontal stroke at the end.

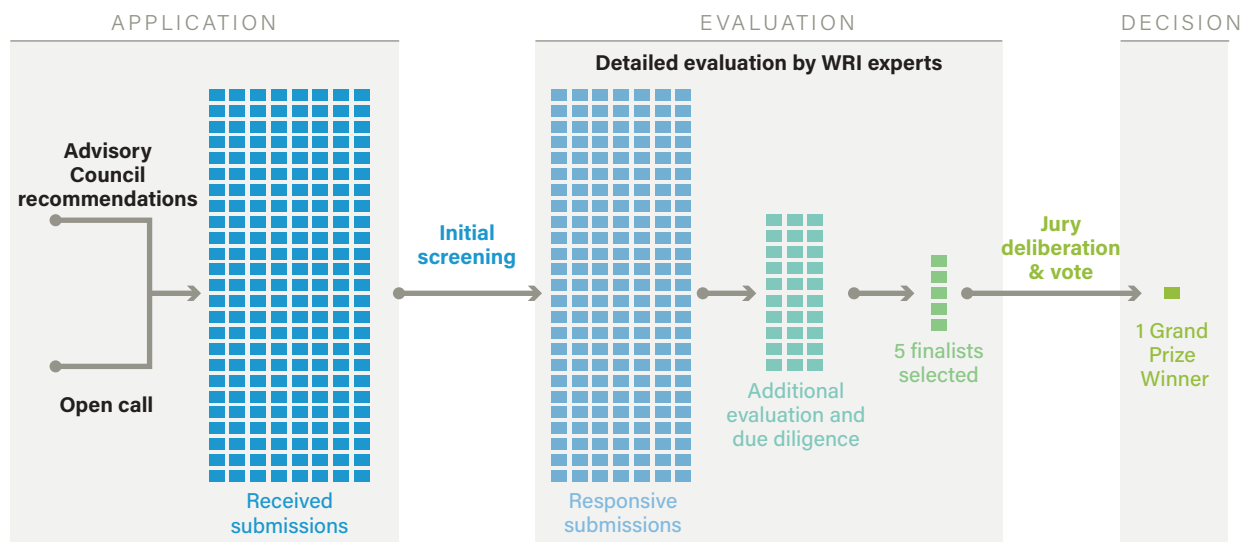
Ani Dasgupta
President & CEO
World Resources Institute

ABOUT THE PRIZE

The WRI Ross Center Prize for Cities is awarded to trailblazing projects and initiatives based on their contribution to inclusive urban transformation. It seeks to inspire urban changemakers across the globe by amplifying lessons and telling impactful stories of inclusive urban transformation. With the generous support of Stephen M. Ross, it was awarded for the first time in 2019.

Submissions are sourced from recommendations made by the Advisory Council, a network of leading urban practitioners and thinkers, and through an open call. From this pool, an international and multi-disciplinary evaluation team selects five finalists based on how they exemplify qualities to be emulated: they should apply big ideas to critical urban problems, demonstrate life-changing impact on people's lives and on their communities, and have ripple effects on institutions, the wider city, and other cities.

The distinguished, independent Prize for Cities Jury selects the grand prize winner from the five finalists through deliberation and voting based on their unique and diverse experiences and expertise.



A MOVEMENT OF CHANGEMAKERS

The Prize brings together people who dedicate their days and nights to making cities better places in some way or another.

- **Applicants** – a growing number of organizations from the public, private and not-for-profit sectors are submitting their projects and initiatives to be considered for the awards each year.
- **Jury** – leaders and visionaries from civil society, business, and government organizations, who each have an exceptional track record and commitment to inclusive cities.
- **Advisory Council** – several hundred urban practitioners and thought-leaders from across the globe recommend applicants to the Prize every cycle and help spread the word.

This growing community of urbanists is driving a common agenda in pursuit of inclusive urban transformation. Together, we are building on what we know and uncovering what was not widely known in order to develop useful and practical knowledge to generate life-changing impacts in our cities.



5 FINALISTS FROM AROUND THE WORLD

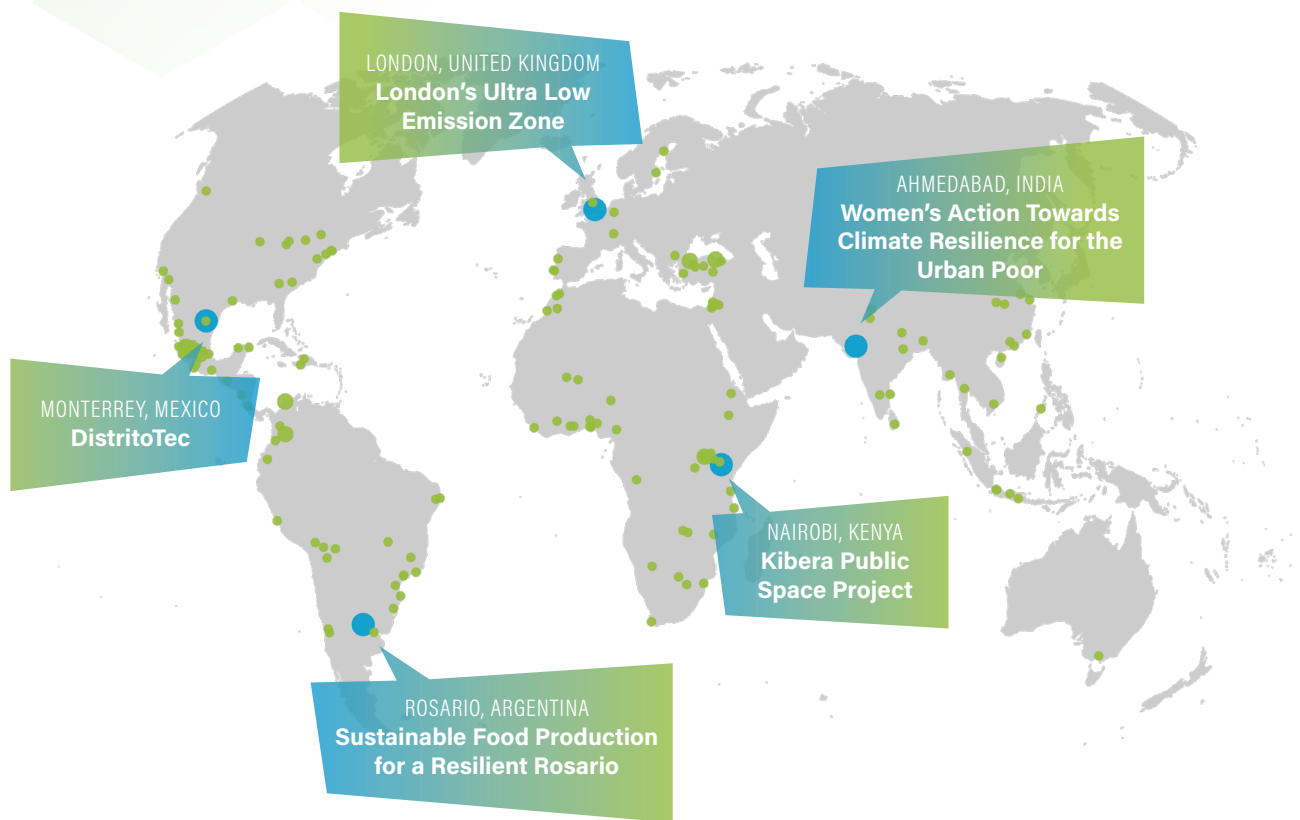
262
SUBMISSIONS



160
CITIES



54
COUNTRIES

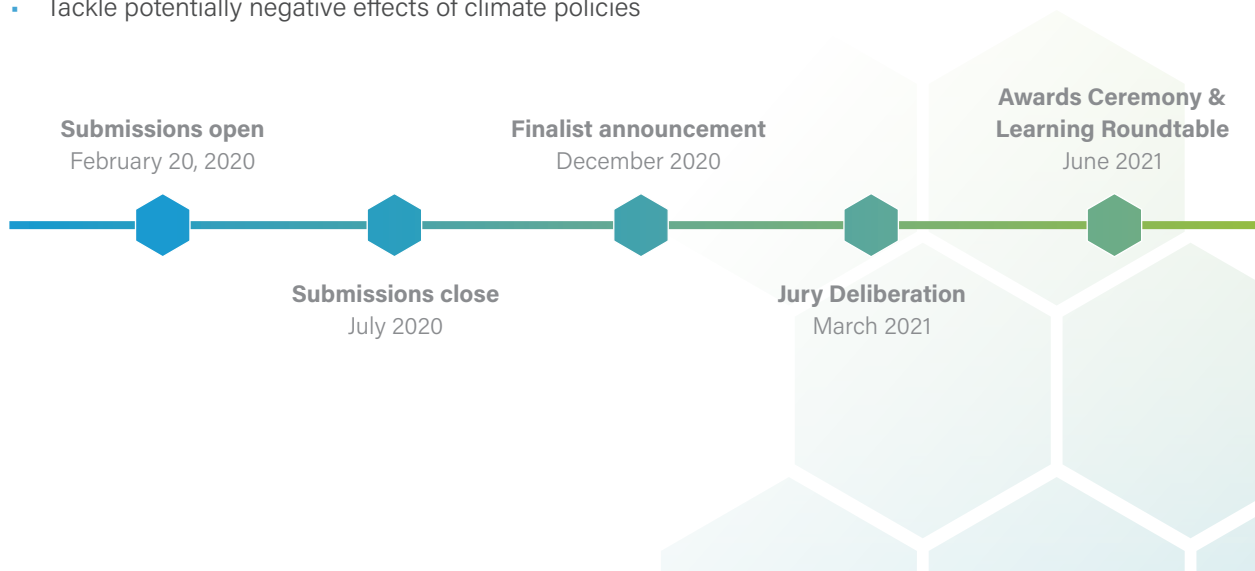


INCLUSIVE CITIES FOR A CHANGING CLIMATE

By 2050, an additional 2.5 billion people could be living in urban areas. As more people move to cities, many areas are seeing rising housing prices, unequal access to employment opportunities and public services, and the increasing effects of a changing climate. Projections by the world's leading scientists say future cities need to have a carbon footprint near zero, eliminate their reliance on fossil fuels, and be able to manage weather extremes such as heavy rains and heat waves.

The 2020-2021 Prize for Cities focused on the intersection of worsening climate change and widening urban inequality. To help understand what cities can do, we invited submissions that show how to live and thrive in an increasingly unequal and climate-changed world, including those that:

- Protect lives and livelihoods threatened by the changing climate
- Increase accessibility without increasing the carbon footprint
- Fuel innovation and economic opportunity without polluting byproducts
- Shift traditional models of behavior and daily practices
- Use new data, knowledge, governance and/or finance
- Tackle potentially negative effects of climate policies



A WORLD CLASS JURY



Stephen M. Ross

Chairman of the Jury, Chairman and Founder, Related Companies

Stephen M. Ross is the Chairman of the Jury and generously funds the Prize for Cities. In addition to his support for WRI Ross Center for Sustainable Cities, he is the Chairman and Founder of Related Companies and a noted philanthropist and business leader.



Sir David Adjaye OBE

Founder and Principal, Adjaye Associates



Majora Carter

CEO, the Majora Carter Group, LLC



Lord Norman Foster

Founder and Executive Chairman, Foster + Partners



Frannie Léautier

Senior Partner at SouthBridge Group and CEO of SouthBridge Investments



Rahul Mehrotra

Founding Principal,
RMA Architects



**Maimunah Binti
Mohd Sharif**

Executive Director,
United Nations Human
Settlements Programme
(UN-Habitat)



Sheela Patel

Founder and Director,
Society for the Promotion
of Area Resource Centers



**Martha Delgado
Peralta**

Deputy Secretary of
Multilateral Affairs and
Human Rights, Mexico



Steve Strongin

Senior Advisor, Goldman
Sachs



Mark Watts

Executive Director,
C40 Cities Climate
Leadership Group

TACKLING CLIMATE CHANGE AND URBAN INEQUALITY

Every cycle, the Prize for Cities offers an opportunity to uncover high caliber projects and initiatives whose impacts and approaches are not widely known yet. It is not just about who wins the awards, but what can be learned from everyone who applies.

Through this process of discovery, we surfaced many ways in which urban changemakers worldwide are tackling climate change and inequality in their cities. Here are a few themes that stood out from the 2020-2021 cycle:



Increasing climate resilience in informal settlements using participatory approaches that empower local residents.

PROJECTS:

- Kibera Public Space Project (Nairobi)
- Women's Action Towards Climate Resilience (Ahmedabad)
- Coalition for Vila Nova Esperanca (Sao Paulo)



Embedding climate and equity objectives into area-based plans through increased density, greater energy and water efficiency, participation in planning, and improved service access.

PROJECTS:

- DistritoTec (Monterrey)
- Green Ramallah Project (Ramallah)
- Sustainable Innovation Zone (Porto Alegre)



Creating inclusive and low-carbon public spaces using biking and pedestrian infrastructure, 'complete streets,' and non-motorized mobility.

PROJECTS:

- Streets for People (Chennai)
- Tender S.U.R.E (Bangalore)
- Promoting Cycling for the Residents of Buenos Aires (Buenos Aires)



Increasing public and shared transport options and reducing private vehicles using fees, with redistributive benefits for low-income populations.

PROJECTS:

- London's Ultra Low Emission Zone (London)
- Build a New Shared Transportation Ecosystem (Xiamen)
- Nottingham's Workplace Parking Levy Scheme (Nottingham)



Innovating food production, food waste reduction, and nature-based solutions to boost both climate resilience and the livelihoods of low-income residents

PROJECTS:

- Sustainable Food Production for a Resilient Rosario (Rosario)
- Urban-Rural Ecoplots (Medellin)
- Food Rescue US (Detroit)





GRAND PRIZE WINNER

Sustainable Food Production for a Resilient Rosario



Location: **Rosario, Argentina**

Population: **995,000**

GRAND PRIZE WINNER

Sustainable Food Production for a Resilient Rosario

The distinguished, independent Prize for Cities Jury awarded this cycle's grand prize to Rosario's urban and peri-urban agriculture program for the multi-dimensional nature of its impacts and the vision and perseverance of a team of urban changemakers that have carried it forward over several decades.

Sustainable Food Production for a Resilient Rosario provides the opportunity to think differently about what inclusive climate action can look like. Urban farming has become a strategy for building the city's social, economic, and environmental resilience. Remediating vacant and abandoned land helps boost resilience to heat and floods. But agriculture is also a source of livelihoods for low-income residents and vulnerable populations, which the city targets in their outreach. They grow healthy food to eat and sell in local markets and reduce carbon emissions, as the produce sold replaces imports. Meanwhile, school outreach programs teach children about local food production and builds a sense of citizenship.

Faced with climate change and rising urban inequality, cities need to radically evolve traditional ways of managing land and meeting residents' needs. The urban agriculture program's longevity and clever evolution challenges existing stereotypes of inflexible municipal bureaucracies, rigid top-down implementation and policymakers obsessed with novelty. It provides a powerful example of how cities can pivot on the strength of existing programs and maintain the continuity of political agendas while adapting to changing realities, from economic crisis to climate emergency.

Finally, in a world that is still shaking from a global pandemic, the jury's 2020-2021 choice speaks to the need for interventions that promote healthier, more resilient communities and shorter supply chains, especially for critical commodities such as food. Rosario shows us one way to a more sustainable and inclusive future.





JURORS' THOUGHTS:

“Food is infrastructure. We don’t think of how it has this really huge role and should be considered part of the urban infrastructure through the direct impacts that it’s having on people, the quality of their life.”

“Here is a project that started as having nothing to do with climate, but now it absolutely is about climate and inequality. It resonates on the score of thinking differently about various opportunities, as a resilient response to the pandemic.”

“Urban farming is a vital component of the city now and the city in the future. It’s not just symbolic, but an irreversible trend and Rosario is a splendid example.”

“Urban agriculture is sometimes symbolic, but the way it’s grown in scale in Rosario is quite amazing.”

THE PROBLEM

Rising temperatures and flooding are compounding the lingering damage of the 2001 Argentinian economic crisis to exacerbate urban inequality. In many cities, the increased risk of flooding from climate change adds pressure to existing deficiencies in storm drainage, while long food supply chains produce more emissions and are vulnerable to disruption.

THE BIG IDEA

Evolve the flagship urban agriculture program into a cornerstone of the city's inclusive climate adaptation plans through repurposing underutilized public land.







Rosario, the third largest city in Argentina, is located along the Paraná River and serves as a major hub for soybean production and exportation. By the early 2000s, Rosario had begun to depend heavily on vegetable supply chains from regions located over 400km away, produced with extensive use of pesticides. In 2001, the Argentinian economy collapsed, devaluing the currency and leaving a quarter of Rosario's workforce unemployed. With more than half of Rosario's population below the poverty line, desperation led some residents to start looting supermarkets for food.

In response to the crisis, the municipality launched an urban agriculture program that allowed residents to grow their own food on vacant and underutilized land throughout the city. The program provided seeds, tools and training on agroecological production – farming done without agrochemicals. Demand for fresh produce was so high that the city quickly opened a new farmer's market to enable growers to sell agroecologically produced fruits and vegetables and to provide new sources of affordable and healthy local produce to residents.

In 2004, as the economic crisis stabilized, the mayor approved a municipal ordinance allowing the city to grant temporary tenure of vacant land to the poor for urban agriculture, formally integrating the program into city law.

But in 2007, another crisis struck: record-shattering rainfall over five days forced Rosario to evacuate more than 3,000 people. Recognizing that flooding would only worsen with climate change, the city identified flood-risk zones to inform development priorities in the 10-year Urban Plan of Rosario. The new plan included Vegetable Garden Parks, an initiative

aimed at converting underutilized land to create green productive spaces to help absorb excess water and prevent floods.

In 2007 and 2008, the first two Vegetable Garden Parks opened, offering a variety of social programs around sustainability, including workshops and tours of the gardens. In 2008, the city launched its 10-year strategic plan, envisioning a “green circuit” throughout the city that expanded the Vegetable Garden Parks and integrated green spaces into neighborhoods and public housing complexes to help mitigate the urban heat island effect and further increase flood resilience.

In 2013, the municipality passed an ordinance designating 800ha of peri-urban land to be used for agroecological production. Formally adopted into the city’s strategic plan and launched in 2015, the Green Belt program protects land from urbanization and soy farming and provides local smallholder farmers with support to convert to agroecological production practices.

The 2015 Environmental Plan for Rosario further integrated urban agriculture into the city’s environmental policies through new initiatives on green jobs, composting, renewable energy in the Vegetable Garden Parks and training centers for agroecological production. In 2018, the city’s new Strategic Plan expanded local produce sales to grocery stores. The city’s holistic approach to urban agriculture has left enduring positive marks on people’s livelihoods and wellbeing, their resilience to climate shocks and stressors, and the city’s food security and carbon emissions.





LIFE-CHANGING IMPACT

Provides healthy local produce and livelihoods for low-income families and remediates public lands, while reducing emissions from the food supply chain and increasing resilience to floods and extreme heat.

- 75ha are currently used for agroecological production across the city through 7 Vegetable Garden Parks and various smaller neighborhood plots that were formerly underutilized or abandoned land.
- 800ha of peri-urban land are preserved for agroecological horticulture, protecting the land from urban development and conversion to soy crops, while increasing resilience to flooding.
- Almost 2,500 tons of fruits and vegetables are agroecologically produced each year.
- Locally produced vegetables create 95% fewer GHG emissions than the produce imported to Rosario, according to a study by the National University of Rosario and RUAF Urban Agriculture and Food Systems.
- 7 new permanent market spaces and 18 periodic marketplaces established for direct vending of local produce, and a new program launched to sell local produce in grocery stores.





RIPPLE EFFECTS

Sparked a citywide remediation of vacant land for sustainable and healthy food production and increased climate resilience while expanding to include peri-urban areas.

- The urban agriculture program is fully integrated into several of the city's plans, including the Urban Plan of Rosario in 2007, the 10-year Strategic Plans of 2008 and 2018, and the Environmental Plan of 2015.
- The program has empowered farmers by organizing them into a citywide network and establishing a National Secretariat for Family Farmers, which gives farmers tax and pension benefits.
- The program has inspired urban agroecology initiatives in the Argentinean cities of Morón, Mar del Plata, Rio Cuarto, Corrientes, Tucumán and Santiago de Estero, and Rosario has supported knowledge exchanges between them.
- Rosario is also part of the Latin American Agroecology Movement (MAELA) and has inspired other Latin American cities, including Lima in Peru, Belo Horizonte and Guarulhos in Brazil, and Bogotá in Colombia.

The Argentinian economy collapses, pushing 5.2 million people into poverty

2001

Rosario responds to the economic crisis by launching the municipal urban agriculture program

2002

The municipality approves an ordinance that allows residents to gain temporary tenure of vacant land for agroecology

2004

Floods in Rosario cause 3,000 people to be evacuated; the Secretariat of Public Works begins analyzing flood risk across the city

2007

Rosario launches a 10-year urban plan, making a specific provision for the agricultural use of public land as Vegetable Garden Parks

2007

2008

The Rosario Strategic Plan is launched, further integrating urban agriculture into the city's urban planning by envisioning a "green circuit" throughout the city made of agricultural plots and gardens

The municipality creates a new land-use ordinance that protects 800ha of peri-urban land to be used for agroecological fruit and vegetable production

2013

2018

The Rosario Metropolitan Strategic Plan lays out a plan for expanding vegetable garden production and vending spaces, further integrating the urban agriculture program into the city's fabric



FINALIST

DistritoTec

"DistritoTec reminds us that we should be measuring success by how many people stay and work in our communities, helping them flourish economically and sustainably."

JURORS' THOUGHTS



Location: Monterrey, Mexico

Population: 1,142,000

THE PROBLEM

Rapid outward expansion created a low-density, resource-inefficient metropolitan area plagued by congestion as drug violence tore at its social fabric.. Many cities around the world are sprawling and suffer from a range of negative impacts, including including the high costs of long commutes and increased CO2 emissions.

THE BIG IDEA

A university-led revitalization process that works with the government and communities to pilot new, more compact, district-scale design methods, along with supporting policy and finance changes.







From 1980 to the early 2000s, Monterrey underwent rapid urban expansion and car-centric development as policies favored investment in new neighborhoods outside the city center. The city's population doubled, but its density decreased by 75% as more residents and businesses moved to the periphery and increasingly relied on private vehicles. In the neighborhoods around the city's historic and prestigious private university, Tecnológico de Monterrey (Tec), the population fell by 22% between 2000 and 2010, and by the end of the decade, 36% of homes were uninhabited. Meanwhile, violence from the war on drugs brought insecurity and further tore at the social fabric of the city.

In 2010, the situation came to a head when two Tec students were killed in a crossfire between drug cartels and the Mexican army on the doorstep of the campus. As enrollment declined over the next two years, the university considered moving to a different part of the city where it could ensure a safer environment. Instead, the university decided to stay in its historic location and open itself to different stakeholders in the community to co-create a solution that would transform the surrounding neighborhoods and draw people back to the area.

Tec launched the DistritoTec regeneration initiative in 2014 with \$200 million in seed funding from its endowment. The project team unveiled a new master plan for the campus that integrated the university with 24 surrounding neighborhoods, forming a new district, DistritoTec. Consultations began with residents and business owners and converged around a set of goals: educational and employment opportunities, entertainment, affordable housing, high-quality public space and sustainable mobility options.

With encouragement from the project team, local residents began meeting and building trust. Many organized themselves into neighborhood committees which have representation in a larger district council, the Neighborhood Council of DistritoTec. In 2015, the Monterrey City Council approved DistritoTec as a special development zone under Mexican law, which set out guidelines, strategies and projects to create mixed-use development and increase density. This paved the way for physical changes to begin and the project team started with the boundaries of the Tec campus, redesigning them to remove fences and walls and create four new pocket parks.

Other changes included more than 3km of “complete streets” to improve pedestrian and cycling infrastructure and safety as well as the transformation of the Garza Sada roundabout, a major hotspot for road traffic injuries. These changes complemented active programming in the district, including cinema nights, concerts, local markets, art shows and monthly open street days called “Callejero.”

In 2018, the Neighborhood Council of DistritoTec was granted formal recognition by the city in the Municipal Law of Public Participation, giving it a formal voice in city affairs. The following year, Monterrey approved the DistritoTec public trust, a financial instrument that allows a portion of public revenue to be captured and reinvested into infrastructure and public space priorities. Besides providing a new stream of resources for future initiatives within DistritoTec, the public trust is a viable financial model for new districts in Monterrey and other Mexican cities.





LIFE-CHANGING IMPACT

Increased access to public space and green space, walking and cycling, business activity, and social cohesion through cultural and community programming, and participatory governance.

- 17,000m² of renovated and new public parks and 3km of new "complete streets" developed.
- Directly benefits the 16,900 residents of DistritoTec, 21,600 students and staff of Tecnológico de Monterrey, and 24,000 employees of local businesses through improved physical surroundings and safety.
- 98,500+ people have attended events hosted in DistritoTec, including the Callejero open streets program and local market, outdoor movie theater and community center since 2015.
- 23% increase in registered businesses in DistritoTec between 2015-2019, three times the city average.
- Since the project's inception, \$500 million in new private investment has been leveraged through donations and partnerships for programs, services and building within DistritoTec.



RIPPLE EFFECTS

Established new regulations for density and public participation as well as financial instruments for district-level investments, while informing national and international efforts to create cohesive neighborhoods.

- Other regions of the Monterrey metropolitan area are drawing from the DistritoTec approach. Different stakeholders have established three new districts, Distrito Purisima Alameda in downtown Monterrey, Distrito Universidad around a public university north of the city, and Distrito Hospitales near a cluster of health institutions, which are now in their early stages, and receive support from the DistritoTec team.
- The project has inspired other Tec campuses across Mexico to develop their own district transformations, including the Tlalpan Innovation District currently underway in Mexico City.
- Tec formed a knowledge partnership with Universidad de los Andes de Colombia and Pontificia Universidad Católica de Chile to continue working on urban development issues in Latin America.



Two Tec students are killed near campus, shocking the community and prompting discussions around the future of the university

A new master plan for the campus is created, integrating university boundaries with the surrounding neighborhoods for the first time

2010

2012

2013

2014

After considering moving the university decides to stay in its historic location

DistritoTec is officially launched with \$200 million in seed funding from the university's endowment, and the new master plan is made public

DistritoTec begins establishing a governance structure by organizing neighborhoods into committees. Each committee has representation in the district-wide Neighborhood Council

The Monterrey Municipal Law of Public Participation is updated to include a designated representative from district governance bodies, starting with the DistritoTec Neighborhood Council

2014

2015

2018

2019

Monterrey City Council approves the DistritoTec Partial Urban Development Program, giving legal basis to DistritoTec's transformative vision

The municipality approves the DistritoTec public trust, which captures a portion of public and private resources generated in the district for reinvestment into infrastructure and public space projects



FINALIST

Kibera Public Space Project

"The Kibera Public Space Project builds momentum for change: if people are empowered, they have a sense of belonging and will continue creating change."

JURORS' THOUGHTS



Location: Nairobi, Kenya

Population: 4,735,000

THE PROBLEM

Poor drainage and sanitation infrastructure and precarious housing make the residents of Kibera, one of the world's largest informal settlements, vulnerable to extreme flooding. As of 2015, 2.3 billion urban residents globally lack safely managed sanitation.

THE BIG IDEA

Develop a network of community-designed and managed public spaces where flood protection and green and grey infrastructure are layered with basic services and amenities, like sanitation and laundry facilities, recreational spaces and small businesses.







Covering just 2 square kilometers along the Ngong River, Kibera is home to more than 300,000 people, making it one of the most densely populated informal settlements in the world. While Kibera is a critical source of affordable housing, most residents lack land tenure, municipal services and adequate public space. Compounding these challenges, the settlement faces increasingly severe and unpredictable rainy seasons, with floods damaging homes and overwhelming the settlement's limited drainage infrastructure. Consequently, Kibera has been the site of many development efforts, but these efforts have traditionally taken top-down approaches that often repeat the disenfranchisement and injustice faced by residents, creating a heightened need for community-owned and community-led approaches to settlement upgrading.

The Kibera Public Space Project proposes an alternative to large-scale, top-down upgrading programs. The Kounkuey Design Initiative (KDI) launched the initiative in 2006, initially focusing on improving public spaces by reclaiming abandoned areas and dumpsites without touching existing housing. The team works closely with community-based organizations and brings landscape architecture, engineering and urban planning skills to co-create public spaces that layer together infrastructure, flood protection and amenities in direct response to community needs.

For its first public space, KDI partnered with the New Nairobi Dam Community Group (NNDC), who identified flooding from the Ngong River, safety, poverty and lack of recreation opportunities for children as key issues. In response, KDI helped design and construct a multifunctional site that included a pavilion, office, garden, playground,

bridge and gabions to reduce flood risk. After construction, the NNDC took over maintenance and management of the space.

After finishing a second public space in 2011 using a similar approach, KDI began formalizing its process. It started issuing requests for proposals through local radio stations and posters, allowing local organizations and residents to propose solutions. It also began more targeted engagement – with young people, women and elders – and conducted site mapping to build collective visions for spaces.

In 2012, KDI won the \$150,000 Swiss Re Foundation International ReSource Award for Sustainable Watershed Management to help scale up its work, which led to the construction of three new spaces in quick succession, focusing more deliberately on water, sanitation and flooding.

In 2015, KDI conducted a survey of nearly 1,000 households and community groups to better understand watershed-level flood risks, in partnership with the Technical University of Kenya. The results showed that more than 50% of residents experienced flooding, and not just from the river but from drainage channels as well. This led KDI to sign a Memorandum of Understanding with the Nairobi County Department of Public Works in 2016 to remediate flood hotspots along the Ngong River using new community-level data.

In 2020, after two years of lobbying by KDI and Slum/Shack Dwellers International (SDI), the Nairobi Metropolitan Services approved the Kibera Special Planning Area, creating a large-scale, formal opportunity to reshape the city's approach to development and better incorporate the perspectives of residents.





LIFE-CHANGING IMPACT

Significantly improved basic service access and flood protection for over 125,000 residents, benefiting women and young people in particular.

- 11 new public spaces now make up 35% of all purpose-built public space in Kibera, improving the physical conditions of over 9,000m² of formerly abandoned and wasted spaces by installing pavement, bridges, sanitation blocks, and drainage, while also providing a range of amenities, including playgrounds, small business kiosks, laundry pads, and community centers and gardens.
- 520m of flood protection and 840m of installed drainage benefit 8,000 households, including the lowest-quality, flood-prone homes located closest to the Ngong River that are primarily occupied by women and children.
- 9 new taps and kiosks provide affordable water to 10,000 families on a weekly basis.
- Over 5,000 residents have been involved in the design of new public spaces through over 300 workshops.
- Increased access to sanitation, play and gathering spaces for over 125,000 people.





RIPPLE EFFECTS

Influenced the uptake of new climate, water, and sanitation initiatives across Nairobi, and inspired a new approach to upgrading informal settlements that prioritizes community-level knowledge and perspectives.

- Successfully advocated for a Special Planning Area for Kibera, initiating a process of formalization for the settlement and presenting an opportunity to further integrate community-level perspectives into Nairobi's urban planning processes.
- Established a formal relationship with the national meteorological services for both Kenya and Tanzania to reduce the vulnerability of informal settlements to extreme weather events through a program called Developing Risk Awareness Towards Joint Action.
- Insights from KDI's work have been recognized by the UN as an environmental best practice, and KDI was invited to co-author the publication "Handbook for Gender-Inclusive Urban Planning and Design" with the World Bank, published in 2020.

KDI partners with the New Nairobi Dam Community Group to co-design its first public space in Kibera, piloting a community-owned and community-led model of informal settlement upgrading

2007

KDI wins \$150,000 through the Swiss Re Foundation International ReSource Award for Sustainable Watershed Management for its work on flood resilience in its first two public spaces, and a third space is constructed

2012

Three additional public spaces are constructed with funding from the International ReSource Award, adopting a more deliberate focus on water, sanitation and flooding

2013-2014

With support from the Technical University of Kenya, KDI interviews 1,000 households in Kibera and finds that more than 50% are affected by flooding from both the river and drainage channels

2015

KDI signs a Memorandum of Understanding with the Nairobi County Department of Public Works to integrate community-level data into its flood risk management and collaborate on remediating flood hotspots

2016

2018

KDI works with the Kenya Meteorological Department and residents to develop accessible weather and climate services; the program is later adopted by the national metrological services for Tanzania as well

Four additional KDI public spaces open

2018-2020

2020

A Special Planning Area for Kibera is approved by the Nairobi Metropolitan Services

Rule
Before



Please keep
your distance

For your safety and the
safety of our staff

Before

04 199
71 1035

TRANSPORT FOR LONDON

ARRIVA
a DB company

global

12	68	148
171	176	468
Night Bus N68	Night Bus N89	Night Bus N155 N171

Service disruption
Please see page 1
Monday 22 until
Monday 23 February

68	176	468
N68	N89	N155
N171		

Fares in
operation



You must
touch in
or you risk
a fine

HV 395



No Entry



Board at
front doors
only

No Entry



Board at
front doors
only

HYDRO
CLEANER
FOR LONDON

FINALIST

London's Ultra Low Emission Zone

"London has cracked the code of finding market solutions to environmental concerns and addressing social issues simultaneously!"

JURORS' THOUGHTS



Location: London, United Kingdom

Population: 9,304,000

THE PROBLEM

Toxic air pollution is a public health, environmental and social justice issue, with people in the poorest parts of London suffering the worst effects despite being the least likely to own a car. More than 80% of people living in cities that monitor air quality are exposed to pollution that exceeds limits set by the World Health Organization.

THE BIG IDEA

Establish the world's toughest driver-pays low emission zone to encourage residents and businesses to switch to cleaner vehicles, public transport, and walking and cycling.







London's Ultra Low Emission Zone (ULEZ) is the culmination of almost two decades of ambitious road-user charging policies aimed at reducing air pollution and traffic congestion, as well as complementary investments in public transportation and sustainable mobility infrastructure.

In 2000, Ken Livingstone was elected as the first mayor of London under the new Greater London Authority (GLA), running on a manifesto to reduce traffic in the city center through a congestion charge. Transport for London (TfL), the city's transport agency, held consultations on the congestion charge with the disabled community, small business owners and other community groups, establishing the agency's foundational practices for inclusive public engagement. In 2003, a congestion charge was introduced, with revenue redirected into public transit.

The congestion charge reduced private cars in central London by 30% and was expanded westward in 2007. However, air pollution from NO₂ produced by diesel vehicles was emerging as a larger issue. In response, the GLA proposed the Low Emission Zone (LEZ), an area in which heavy vehicles must abide by strict "Euro 3" emissions standards or pay a charge. The LEZ came into effect in February 2008, with plans to implement increasingly strict emissions standards over time.

In 2008, Boris Johnson was elected mayor. Two years after, the UK adopted EU standards for air pollution nationwide, increasing the pressure for London to improve its air quality. International pressure ahead of the 2012 Summer Olympics also pushed the administration to act on air pollution.

In 2013, Johnson declared plans for the ULEZ, requiring vehicles to meet "Euro 6" standards in central London by

2020. In 2016, Mayor Sadiq Khan was elected on a platform that prioritized improvements to air quality, including quicker adoption. He initiated a test run of the ULEZ in 2017 by implementing a Toxicity Charge ("T-Charge") on older, polluting vehicles in central London. Public buses in the area began to undergo retrofits and replacements to meet Euro 6 standards, as did those in 12 pollution hotspots identified by TfL outside of central London.

The GLA projected the environmental, economic and health benefits of the ULEZ and used these insights to build support for the new charge. After public consultations found that over 70% of Londoners supported the ULEZ, it was launched in April 2019, replacing the T-Charge with a stricter emissions requirement for all vehicles. The GLA also launched a fund of over \$60 million to help small business, low-income residents and those with disabilities to scrap their older cars and reinvest in ones that meet ULEZ requirements. Select groups were given an extension to replace their vehicles.

The ULEZ is explicitly meant to be part of a comprehensive mobility package. The GLA has invested in charging infrastructure to support the transition to electric vehicles and rolled out thousands of electric taxis. TfL also launched the School Streets program, which closes roads around schools to vehicle traffic at pick-up and drop-off times to encourage walking and cycling and improve road safety. During the COVID-19 pandemic, the GLA established the Streetspace for London program, providing boroughs with financial support to install temporary infrastructure to help make streets safer for pedestrians and cyclists and promote active mobility. The ULEZ is set to expand again in October 2021.





LIFE-CHANGING IMPACT

Reduced toxic emissions from road transport, expanded low-emission public transport and non-motorized mobility options, and decreased disparities between the most and least deprived areas.

- A study conducted 10 months after introduction of the ULEZ found that 44,100 fewer polluting vehicles were driven into central London every day, a 49% reduction. Overall traffic flows were reduced 3-9%, and CO2 emissions from road transport were reduced 6% in central London. The study also found a 44% reduction in NO2 concentrations, indirectly benefitting inner London's 3.2 million residents.
- A \$60-million vehicle scrappage fund was established to help targeted groups of residents replace noncompliant vehicles, a direct result of extensive stakeholder engagement by TfL.
- \$105 million was invested in retrofitting and purchasing new public buses to meet or exceed "Euro 6" emission standards (9,200 buses total), making London the owner of Europe's largest fleet of electric buses.
- Over 380 School Streets have been implemented, and there has been a 97% reduction in schools located in areas exceeding legal pollution limits.
- The amount of protected space for cycling has almost tripled through the Streetspace for London program, which also gave low-car-ownership boroughs funds to invest in sustainable mobility infrastructure and encourage modal shifts.





RIPPLE EFFECTS

Invested in low-emissions public transport and sustainable mobility infrastructure across London and inspiring other cities to roll out air quality interventions, from pedestrian and cycling infrastructure to car-free days.

- All new taxis licensed since 2018 have been required to be electric, contributing to industry investment totaling over \$450 million in a new UK factory to produce zero-emission vehicles and creating 1,000 green jobs. Uber has also committed to driving an all-electric fleet in London by 2025.
- The GLA is engaging in knowledge sharing activities about the ULEZ, the scrappage scheme and London's wider air quality agenda, including through national air quality summits with city leaders from the UK and with the World Health Organization.
- Revenue from the ULEZ and private investment helped establish the \$30-million Mayor's Air Quality Fund, which supports a series of borough-led projects addressing air pollution, including low-emission streets and extended bicycle networks.

The Greater London Authority introduces a congestion charge focused on reducing traffic congestion by charging a daily fee for most cars and vehicles driving into central London

2003

Mayor Boris Johnson declares plans for the Ultra Low Emission Zone (ULEZ) to help meet new EU air quality standards

2008

The Low Emission Zone is introduced, aimed at reducing traffic pollution by charging a daily fee for trucks, RVs, minibuses and vans driving into central London that do not meet certain emissions standards, in addition to the congestion charge

2013

Sadiq Khan is elected mayor, running on a platform to improve London's air quality and rapid implementation of the ULEZ as a signature policy

2016

The Toxicity Charge ("T-Charge") is launched for all vehicles not meeting certain emissions standards, preparing Londoners for the introduction of the ULEZ

2016

The Low Emission Bus Zone program begins in areas outside of central London that have a high percentage of emissions from bus transport. All buses in these areas are replaced or retrofitted to meet higher "Euro 6" standards in advance of the citywide roll-out of improved emissions buses in 2020

2017

2019

The ULEZ is launched in central London, replacing and augmenting the T-Charge

2020

The Streetspace for London program is launched, installing temporary cycling infrastructure, widening sidewalks, and closing streets to cars on certain days during the COVID-19 pandemic as part of the city's investment in improving sustainable mobility options



FINALIST

Women's Action Towards Climate Resilience for the Urban Poor

**"MHT is turning public health into a
base denominator to make generations
of families safer and healthier."**

JURORS' THOUGHTS



Location: Ahmedabad, India

Population: 6,000,000

THE PROBLEM

Rapid urban expansion and increased severe weather events have made slum communities particularly vulnerable to climate change, causing damage, disease and loss of critical livelihoods that disproportionately affect women. Globally, 12,000 people lose their lives every year due to extreme heat, and that number is expected to jump to 260,000 by 2050.

THE BIG IDEA

Empower women to conduct climate-risk assessments for water shortages, extreme heat, flash floods, and vector-borne diseases through a partnership model that helps them to access and implement both technical and non-technical solutions in their communities.







Ahmedabad suffers from multiple climate extremes, which deepen inequality. In 2010, a devastating heat wave claimed more than 1,300 lives in the city and the Ahmedabad Municipal Corporation (AMC) developed the city's first-ever Heat Action Plan in response. Aware of the potential for climate change to disrupt the lives and livelihoods of the poor, the Mahila Housing Trust (MHT), a grassroots organization that works to solve policy implementation issues and build social capital in slum and low-income communities, also began to integrate a climate-resilience perspective into its work.

Women's Action Towards Climate Resilience for the Urban Poor utilizes MHT's women-led model to empower women slumdweller to be climate champions for their neighborhoods and city. In 2014, MHT began surveying community climate risks, with "Vikasinis" – select women leaders who have formed their own federation – leading focus group discussions with community members. They identified extreme heat, flooding, water scarcity and vector-borne diseases as major community-level risks.

In parallel, MHT began holding quarterly multi-stakeholder workshops with slumdweller, technology innovator, local official, and academic institution to develop climate change training, tools for resilience assessment, and solutions that would fit the needs of women, their households and their communities.

In 2016, women from 38 slum communities began attending interactive training to learn about climate change and learn how to spread awareness back to their own communities using similar interactive methods. Later in the year, MHT started a climate surveillance system, setting up monitoring stations and training children to collect data on larvae breeding spots

and test water quality. These drives were hugely successful in deepening community awareness of climate risks and motivating behavior change. Using evidence from these drives, communities sent requests to the AMC to clear drains, pave streets, connect water and sewer lines, and install streetlights.

In 2017, a small team of Vikasinis and MHT staff began using new vulnerability assessment toolkits, developed during the multi-stakeholder workshops, to build women's understanding of community climate risks. Once completed, they developed plans to improve community-level resilience. MHT, in partnership with a variety of sectoral experts, implemented key solutions, including community water meters, planting indigenous plants and worm composting.

Meanwhile, MHT encouraged families to make climate-resilient investments by demonstrating cool roofing solutions, such as white paints and thermocol roofs, as well as sprinkler taps, rainwater harvesting systems, and mosquito nets. The cool roofing solutions garnered particular interest from the AMC Health Department, and MHT was asked to input into the city's 2017 Heat Action Plan.

In 2018, communities developed monsoon action plans with the support of MHT, to be updated yearly. They also established a communication channel for the city to monitor real-time conditions from its flood control room and alert communities to enact the plans if needed.

MHT's model of bottom-up engagement has empowered women slumdweller in Ahmedabad and across South Asia, and significantly increased community-level understanding of climate impacts. Residents now see climate change as man-made and something they can act on, rather than simply an "act of God."





LIFE-CHANGING IMPACT

Increased household and community resilience through a range of physical upgrades, increased access to city-level initiatives and decision-making, and improved status of women in community and municipal decision-making processes.

- 9,500 women in 38 slum communities in Ahmedabad participated in trainings, drives and community resilience planning.
- 300 slum households in Ahmedabad have installed modular cool roofs, half of whom received micro-loans from MHT, and advocacy efforts led the AMC to install cool roofs in 17,000 affordable housing units.
- Evidence-based approach to understanding climate risks motivated a shift in community behaviors, including improved water storage and handling practices, regular dredging of drains and sewers to prevent water logging and contamination, and the development of evacuation measures in case of extreme floods.
- Significantly improved slum residents' understanding of climate change, with residents better understanding the physical processes and available solutions.
- Empowered women in both their households and communities by increasing their knowledge on climate change and their capacity to enact change, shifting local officials' perceptions of women slumdwellers from just beneficiaries to active collaborators.



Established formal input channels into multiple municipal climate action plans, including those for heat and monsoons, and inspired the creation of similar models in six other cities across South Asia.

- Advocacy work has established MHT as a formal collaborator on several climate action plans in Ahmedabad, including those for extreme heat and monsoons, as well as the Ahmedabad City Development Plan 2020, the City Sanitation Plan and the Zero Waste Management Plan, benefiting residents both in and outside of slums.
- Vikasinis are currently providing input on the development of the Ahmedabad Cool Roof Policy, which will scale up the implementation of cool roofing technology to additional households and draw insights from MHT's experience installing roofing solutions in slum communities.
- Contributed to greater awareness of climate impacts and solutions, leading Ahmedabad to make a substantial budget allocation in 2020-2021 plan towards climate resilience.
- Scaled through MHT network and partners as of late 2020 to reach 125,000 people across 107 slums in 7 South Asian cities, including Bhopal, Bhubaneswar, Jaipur, and Ranchi in India, Dhaka in Bangladesh, and Kathmandu in Nepal.

Multi-stakeholder workshops led by MHT begin on a quarterly basis, bringing together technology providers, academics, and city officials to design trainings on climate change, toolkits to assess community climate resilience, and technology solutions

Focus shifts from trainings to collecting evidence of climate risks to build credibility within slum communities. Disease tracking begins in 20 slums, including training and mobilizing children to gather evidence of mosquito larvae. Water quality testing begins shortly after

2015

2015

2016

2016

Mahila Housing SEWA Trust (MHT) leads community focus groups with women slumdweller and technical experts, identifying water scarcity, floods, vector-borne diseases and extreme heat as major climate risks

Women from slums attend trainings on climate change using materials developed in multi-stakeholder workshops. They also learn strategies to spread awareness of climate risks within their communities



OUR VISION

We focus on integrated solutions to long-standing and new urban challenges. Through innovative research, deep engagement with urban leaders, and global partnerships, we catalyze and accelerate transformative urban initiatives that turn cities into resilient, inclusive, low-carbon places that are good for people and the planet.

ABOUT WRI ROSS CENTER FOR SUSTAINABLE CITIES

WRI Ross Center for Sustainable Cities is World Resources Institute's program dedicated to shaping a future where cities work better for everyone. We expand the transport and urban development expertise of the EMBARQ network to catalyze innovative solutions in other sectors, including air quality, water, buildings, land use and energy. We combine the research excellence of WRI with two decades of on-the-ground impact through a network of more than 370 experts working from Brazil, China, Colombia, Ethiopia, India, Mexico, Turkey and the United States.



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