



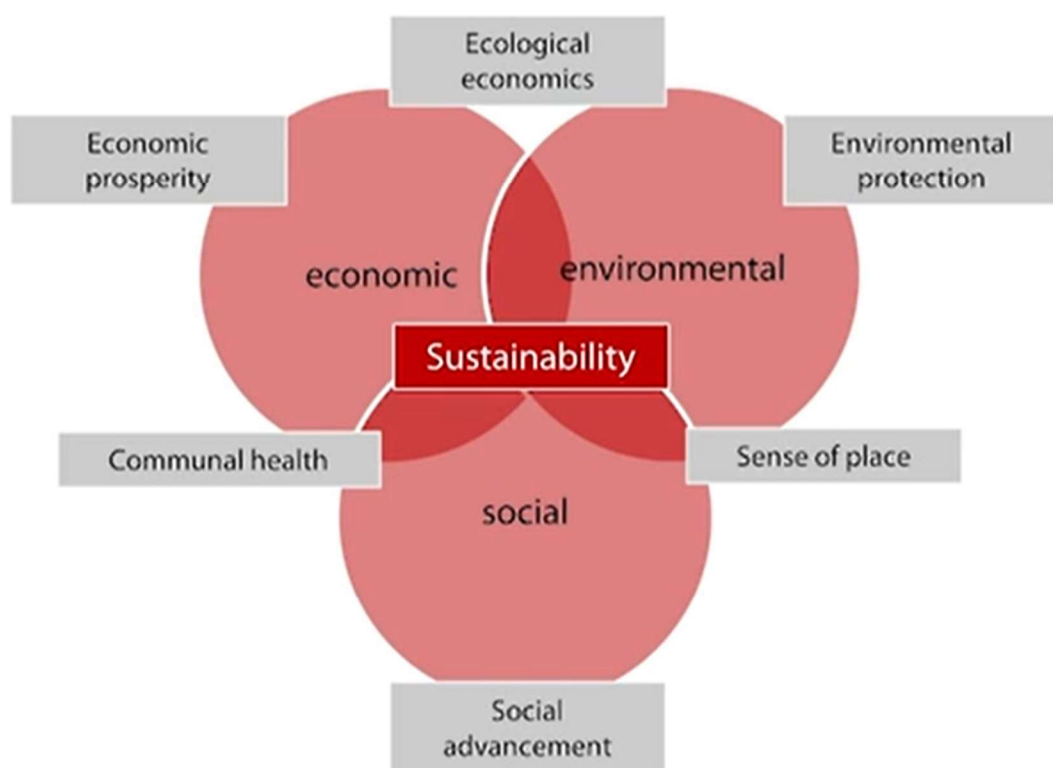
Division South/Southeast Asia



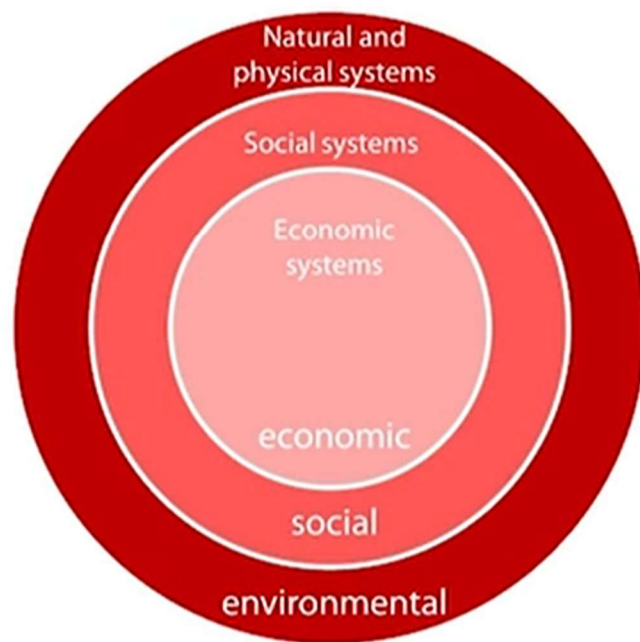
THE SUSTAINABILITY DIAGRAM

the environmental, social and economic dimensions

Source: Glasson and Therivel 2011



the hierarchical diagram



*"We have to protect the environment because if we don't, all the other problems, all the other causes that exist, are pointless. Everything else is pointless."
Extinction Rebellion Protester, Nov 2018*

SDG BY SUSTAINABILITY DIMENSION

Source: Stockholm Resilience Centre 2016



ECONOMY



SOCIETY



BIOSPHERE





Urban Mobility

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Environmental



Gender + Social



Challenges

Infrastructure



Affordability





23% of global CO₂ from transport

energy related CO₂ emissions (Sims et al 2014)

doubling of emissions by 2050

emissions from transport under BAU / fastest growing emissions (Sims et al 2014)

3.7% of global CO₂ from digital technology

a 50% increase from 2013 to 2019 (Ferreboeuf 2019)

TRANSPORT-RELATED AIR POLLUTION

- accounts for about half of the total estimated annual cost of outdoor air pollution of US\$1.7 trillion in OECD countries in 2010 (OECD 2014)
- For 311 cities, 86% exceed WHO air quality guidelines equating to 730,000 premature deaths (Kuylenstierna et al 2014)
- Air pollution is single largest environmental health risk in Europe responsible for around 400,000 premature deaths per year (EEA 2020)

World Africa Americas Asia Australia China Europe India Middle East United Kingdom LIVE TV Edition

Air pollution a cause of UK girl's death, finds global landmark ruling

By Emma Reynolds, CNN

Updated 1813 GMT (0213 HKT) December 16, 2020



Coroner: Ella Kissi-Debrah died as a result of asthma worsened by exposure to excessive air pollution.

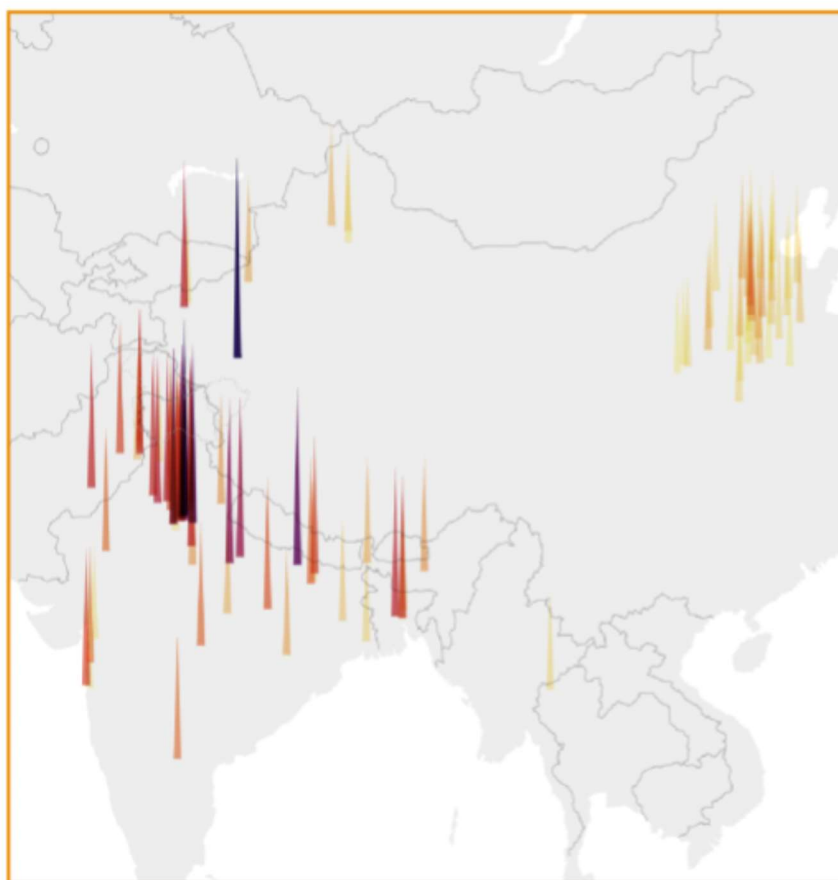
London (CNN) — A 9-year-old girl who died after an asthma attack is thought to be the first person in the world to have air pollution listed as a cause of death in a landmark coroner's ruling.

Ella Kissi-Debrah lived in Lewisham, southeast London, near one of the UK capital's busiest roads, the South Circular. She died in hospital in February 2013 after suffering a cardiac arrest.



World's most polluted cities










94 of the world's 100 most polluted cities are in India, China and Pakistan.


















Number of cities in top 100

	India: 46
	China: 42
	Pakistan: 6
	Bangladesh: 4
	Indonesia: 1
	Thailand: 1

Top 10 most polluted cities 2020 PM_{2.5} µg/m³

	Hotan: 110.2
	Ghaziabad: 106.6
	Bulandshahr: 98.4
	Bisrakh Jalalpur: 96
	Bhiwadi: 95.5
	Noida: 94.3
	Greater Noida: 89.5
	Kanpur: 89.1
	Lucknow: 86.2
	Delhi: 84.1

Rank	City	2021	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2020	2019	2018	2017
1	 Bhiwadi, India	106.2	145.8	129.8	120.2	125.7	86.5	95.9	55.6	55.4	37.1	91.1	188.6	136.6	95.5	83.4	125.4	-
2	 Ghaziabad, India	102	199.9	172.2	97.8	86.3	52.9	47.2	35.3	37.6	30.8	89.7	218.3	163	106.6	110.2	135.2	144.6
3	 Hotan, China	101.5	-	-	158	91.1	167.4	57.4	70.9	93.2	79.3	126.1	111.5	62.6	110.2	110.1	116	91.9
4	 Delhi, India	96.4	183.7	142.2	80.5	72.9	47.4	47.1	35.6	36.9	30.2	73.7	224.1	186.4	84.1	98.6	113.5	108.2
5	 Jaunpur, India	95.3	182.2	143.5	91	70	51.1	40.7	33.5	34.2	36.8	75.7	196	195.7	-	-	-	-
6	 Faisalabad, Pakistan	94.2	207.1	118	71.2	44.6	51.2	44.7	50.4	50	51.9	-	234.5	241.7	73.2	104.6	130.4	-
7	 Noida, India	91.4	185.3	143.4	80.5	68.2	48	43.8	33.9	35	26.5	76.9	204.4	154.8	94.3	97.7	123.6	134
8	 Bahawalpur, Pakistan	91	173.9	145.1	77.3	51.4	45.2	54.4	42.2	43.7	38.2	67.2	197	221.2	78.7	-	-	-
9	 Peshawar, Pakistan	89.6	103.9	137.2	59.6	48	49.2	68.5	54.3	55.8	60.8	77.5	182.3	176.9	-	63.9	-	-
10	 Bagpat, India	89.1	146.1	106.3	88.3	87.1	65.7	53.9	32.8	31.5	24.3	84.7	213.6	128.1	-	88.6	-	-
11	 Hisar, India	89	114.6	111.5	90.7	67.4	62	62.2	44	40.7	36.8	74.7	205.5	157.4	81.1	81	-	-
12	 Faridabad, India	88.9	128	109.3	88.8	76.3	58.4	57.2	40.8	38.7	30.2	82.2	202.7	163.5	83.3	85	129.1	123
13	 Greater Noida, India	87.5	185.9	111.4	69	60.2	48	53.1	49.4	50.1	36	78.4	191.3	160.4	89.5	91.3	-	-
14	 Rohtak, India	86.9	147.3	109.4	80.5	64	47.6	46.6	48.8	43.5	40.8	76.9	217.5	139.9	74.4	59.7	81.6	96.7
15	 Lahore, Pakistan	86.5	140.6	135.1	55.8	38.7	33.8	27.9	25	36.5	45.6	85.1	205.4	212.1	79.2	89.5	114.9	133.2

The top 15 most polluted cities, ranked according to their PM2.5 ranking. PM2.5 refers to atmospheric particulate matter (PM) that have a diameter of less than 2.5 micrometers, which is about 3% the diameter of a human hair (Source: [IQAir: World's Most Polluted Cities 2021 \(PM2.5\)](#)).

Increasing pollution is another factor affecting liveability in the region, especially in South Asia. In the latest survey, this is reflected in the ranking of Nepal's capital, Kathmandu, which fell two positions, to 129th place, owing to deteriorating air quality. Dhaka (139th) in Bangladesh—which has been the lowest ranked city in Asia for over a decade—also saw a further decline in its liveability rating owing to increasing air pollution, originating primarily from the brick kilns that line the outskirts of the city.

Apart from Dhaka, Karachi (137th) in Pakistan and Port Moresby (136th) in Papua New Guinea are the other two Asian cities that appear in the bottom ten scoring cities in the ranking. Stability remains the key factor in defining the lowest-scoring locations in the region.


Euro-2 fuel banned in Lahore to combat worsening air pollution

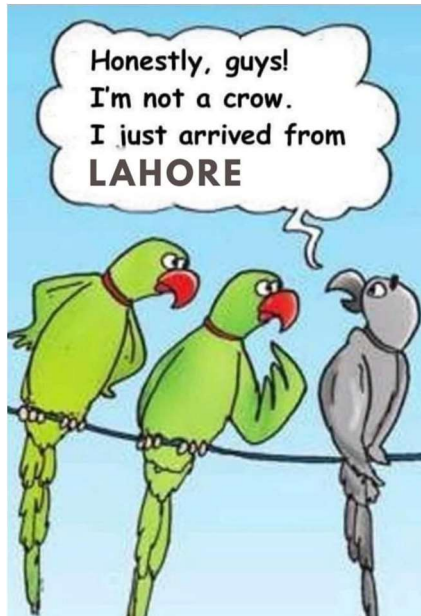
Vehicles causing environmental pollution will be seized, warns Punjab finance minister

Our Correspondent | November 16, 2021 | [Facebook](#) [Twitter](#) [WhatsApp](#) [Email](#)



PHOTO: AFP

LAHORE: To rein in alarmingly high level of environmental pollution in Lahore, the 



Govt Announces Its Decision on School Closure If Smog Situation Worsens

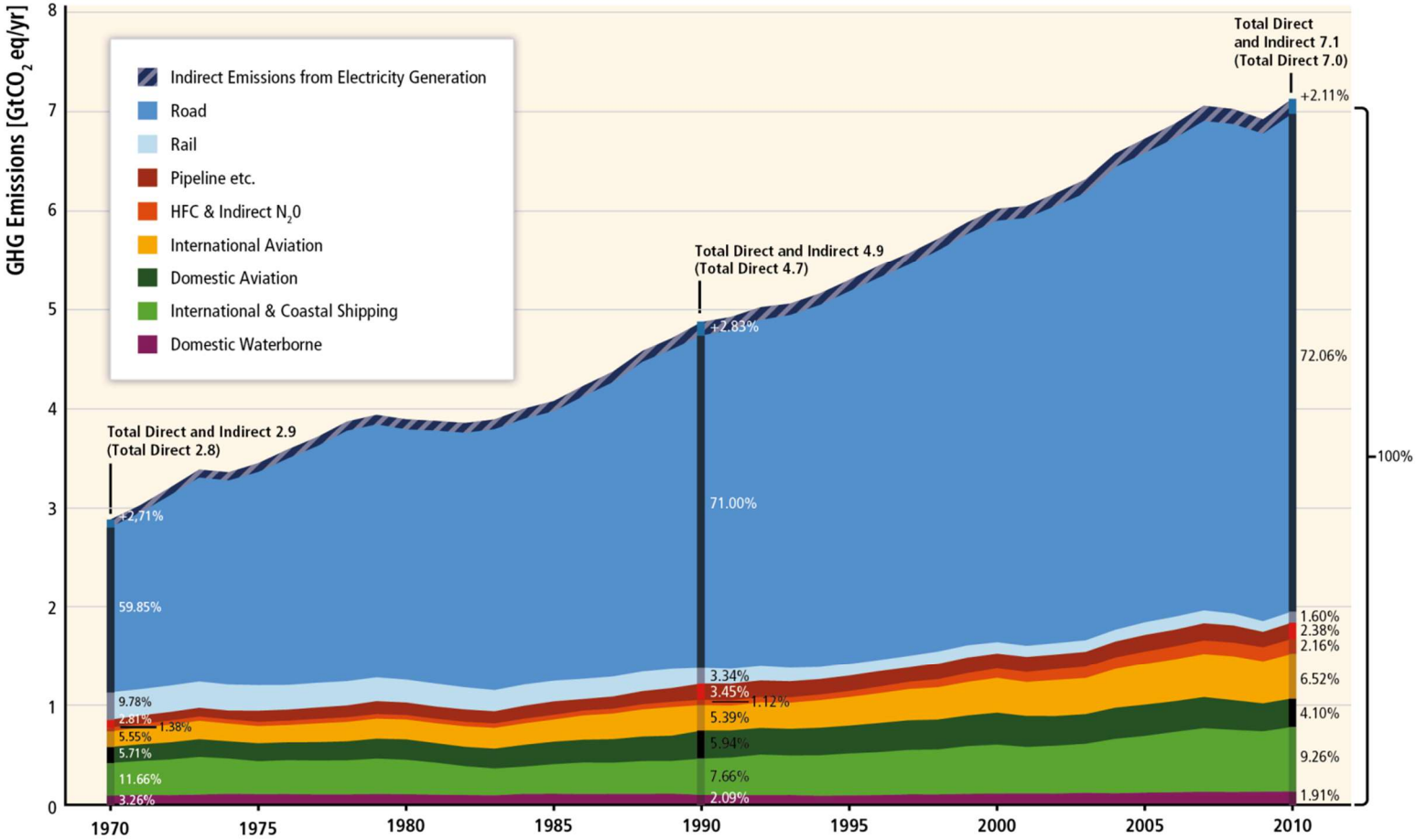


PUBLISHED BY

Rizvi Syed

NOVEMBER 17, 2021 12:02 PM

GLOBAL TRANSPORT EMISSION GROWTH Source: Sims et al 2014



ROAD TRAFFIC CRASHES

Source: WHO 2018

1.35 million deaths per year (2016) from road traffic crashes equals

3,700 people dying every day

- Road traffic injury is now the leading cause of death for children and young adults aged 5–29 years
- Between 2013 and 2016, no reductions in the number of road traffic deaths were observed in any low-income country
- some reductions were observed in 48 middle- and high-income

1970s Dutch Protests
Stop de Kindermoord (“stop the child murder”)



Top ten positions

City	Location	Rank	Index	Stability	Healthcare	Culture & Environment	Education	Infrastructure
Vienna	Austria	1	99.1	100.0	100.0	96.3	100.0	100.0
Copenhagen	Denmark	2	98.0	100.0	95.8	95.4	100.0	100.0
Zurich	Switzerland	3	96.3	95.0	100.0	96.3	91.7	96.4
Calgary	Canada	3	96.3	95.0	100.0	90.0	100.0	100.0
Vancouver	Canada	5	96.1	90.0	100.0	100.0	100.0	92.9
Geneva	Switzerland	6	95.9	95.0	100.0	94.9	91.7	96.4
Frankfurt	Germany	7	95.7	90.0	100.0	96.3	91.7	100.0
Toronto	Canada	8	95.4	95.0	100.0	95.4	100.0	89.3
Amsterdam	Netherlands	9	95.3	90.0	100.0	97.2	91.7	96.4
Osaka	Japan	10	95.1	100.0	100.0	83.1	100.0	96.4
Melbourne	Australia	10	95.1	95.0	83.3	98.6	100.0	100.0

Source: EIU.

Bottom ten positions

City	Location	Rank	Index	Stability	Healthcare	Culture & Environment	Education	Infrastructure
Tehran	Iran	163	44.0	55.0	45.8	32.9	50.0	39.3
Douala	Cameroon	164	43.3	60.0	25.0	45.6	33.3	42.9
Harare	Zimbabwe	165	40.9	40.0	20.8	51.9	66.7	35.7
Dhaka	Bangladesh	166	39.2	55.0	29.2	40.5	41.7	26.8
Port Moresby	PNG	167	38.8	30.0	37.5	38.0	50.0	46.4
Karachi	Pakistan	168	37.5	20.0	33.3	35.2	66.7	51.8
Algiers	Algeria	169	37.0	35.0	29.2	45.4	50.0	30.4
Tripoli	Libya	170	34.2	30.0	29.2	33.8	41.7	41.1
Lagos	Nigeria	171	32.2	20.0	20.8	44.9	25.0	46.4
Damascus	Syria	172	30.7	20.0	29.2	40.5	33.3	32.1

Source: EIU.



Category 5: Infrastructure (weight: 20% of total)

Indicator	Source
Quality of road network	EIU rating
Quality of public transport	EIU rating
Quality of international links	EIU rating
Availability of good-quality housing	EIU rating
Quality of energy provision	EIU rating
Quality of water provision	EIU rating
Quality of telecommunications	EIU rating



Cities
had been built
**by men for
the men**



 Facebook

BBC News فارسی - از دیروز به اینسو عکسی از
یک پدر افغان همراه با ...

Visit

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Public buses in Lahore are not women friendly: report

BY MONITORING REPORT , (LAST UPDATED DECEMBER 20, 2017)



Lahore



Mumbai

from 2015

The Guardian

5 PRINCIPLES FOR WOMEN AND TRANSPORT

Women and men have different travel patterns



1 Study and understand women's mobility

- Collect sex-disaggregated data to understand female travel patterns
- Take into account informal transport, walking and cycling data in transport surveys
- Include specific questions on short, non-work-related trips and mobility of care in questionnaires
- Conduct gender impact assessments: view the city through the eyes of women by involving local women groups and organized civil society
- Ensure the engagement of women all along the planning and policy process including consultation, monitoring and evaluation

2 Develop inclusive mobility services

- Develop walking friendly street network with large sidewalks, sufficient crossings and street signals
- Make cycling attractive for women by providing safe infrastructure and promoting cultural acceptance
- Adapt fare integration in public transport system to enable trip chaining
- Ensure barrier-free access to public transport without steps and with level boarding
- Provide clean toilets and nursing rooms in highly frequented public transport stations
- Consider female travel patterns for route planning and last-mile connectivity in public transport and shared mobility

3 Ensure women's security in transport systems

- Evaluate the need for women and children-only services in public transport and ride-hailing services
- Provide information on public transport schedules to avoid long waiting time
- Roll-out « on demand bus stop » at night and early morning to reduce walking distances
- Ensure a greater and gender-mixed staff presence at stations and in vehicles
- Recognize sexual harassment and gender-based violence as criminal offences and develop reliable reporting mechanisms
- Train public transport staff to deal with sexual harassment situations
- Design open public areas with visibility, lighting and CCTV camera system at stations
- Recognize sexual harassment and gender-based violence as criminal offences and develop reliable reporting mechanisms

4 Empower women in the transport sector

- Develop a gender-responsive work culture and combat gender clichés in the transport sector
- Reduce entrance barriers to employment for women at all levels: drivers, planners, managers, entrepreneurs, decision-makers
- Recruit female drivers and mechanics and ensure their retention through good working conditions and appropriate facilities
- Adopt parity representation policies in participatory and decision-making bodies
- Highlight women leaders in the transport sector as role models

5 Create awareness and stimulate behavioral change

- Use campaigns and social media to encourage a "culture of zero tolerance" against harassment and misbehavior towards women
- Conduct educational programs at schools on gender roles and safe mobility
- Include gender and mobility in university curricula in transport planning and engineering
- Train government officials to integrate gender issues within mobility planning
- Use gender-balanced public signage and employ gender-sensitive language
- Partner with men to raise awareness
- Take the lead and ownership of gender-responsive actions in your surrounding

Women Mobilize Women

Transforming Mobility through Female Empowerment



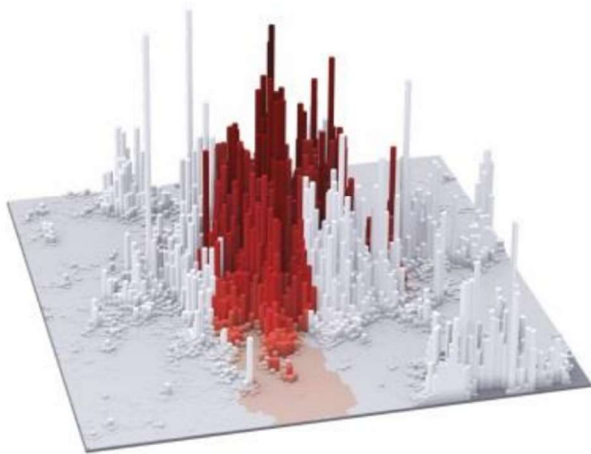
European Cities

American Cities

Developing World Cities

URBAN FORM – URBAN DENSITY

Source: Rode, Kandt et al 2016



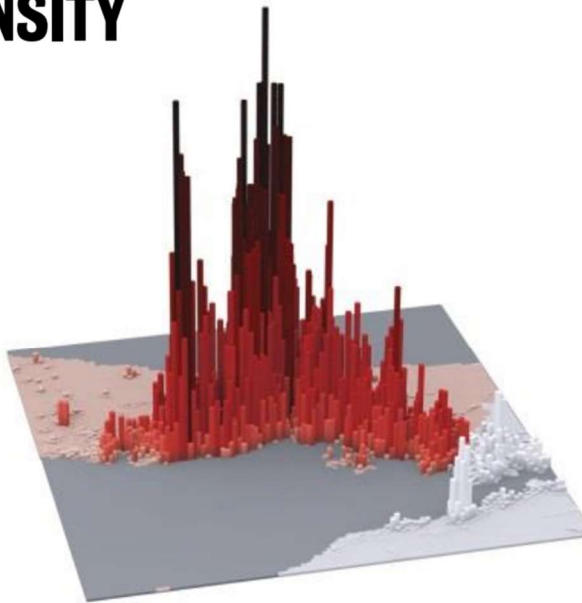
SAO PAULO

10,376

Avg. density central area
of 10 km radius [pers./sqkm]

29,700

Max. Density [pers./sqkm]



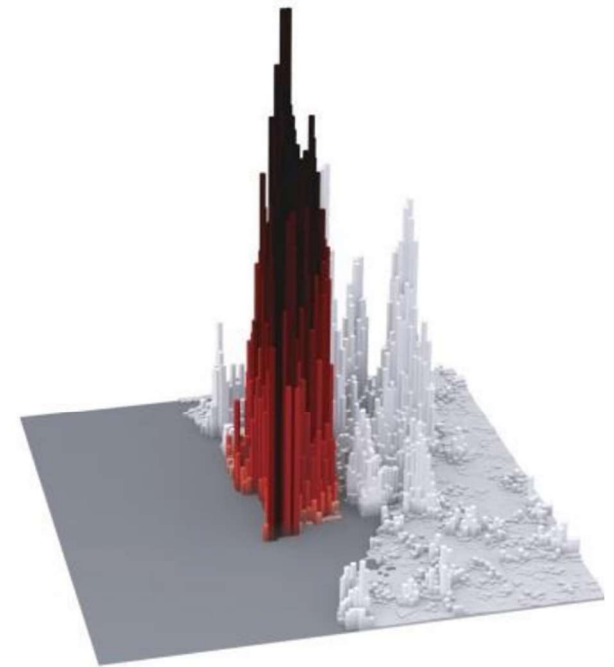
ISTANBUL

20,128

Avg. density central area
of 10 km radius [pers./sqkm]

77,300

Max. Density [pers./sqkm]



MUMBAI

25,316

Avg. density central area
of 10 km radius [pers./sqkm]

121,300

Max. Density [pers./sqkm]



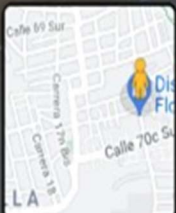
Resource: https://www.researchgate.net/figure/Map-of-Bogota-distribution-of-bicycle-lanes-by-SES-SES-categories-range-from-1-most_fig3_328029994

70 Sur24 Cra. 17f

Bogotá, Bogota

Google

Street View



Google



Dedicated Sidewalk Space for Vendor Stalls

Protected Bike Lanes and Bike racks

Universal curb cut and clear cross-walk markings

One-way narrow street for Vehicles

Extended pedestrian sidewalk with shading features

Dedicated Sidewalk Space for Vendor Stalls



Theoretical

LOGIC
Model

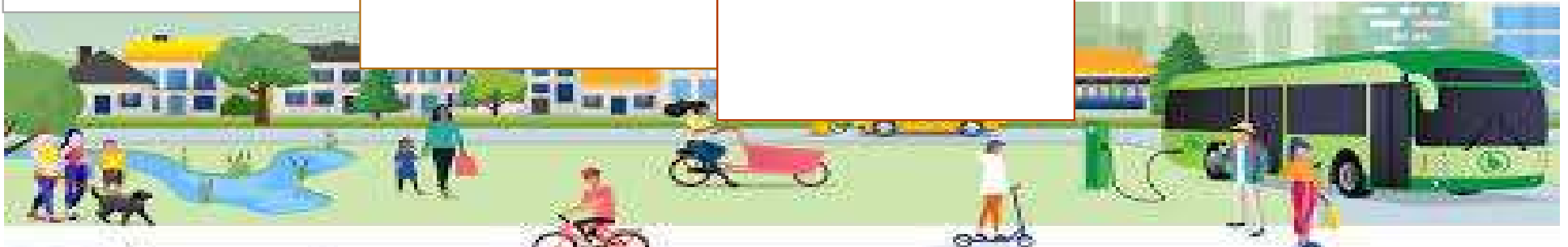
Urban Planning

Time
Dimension
Models

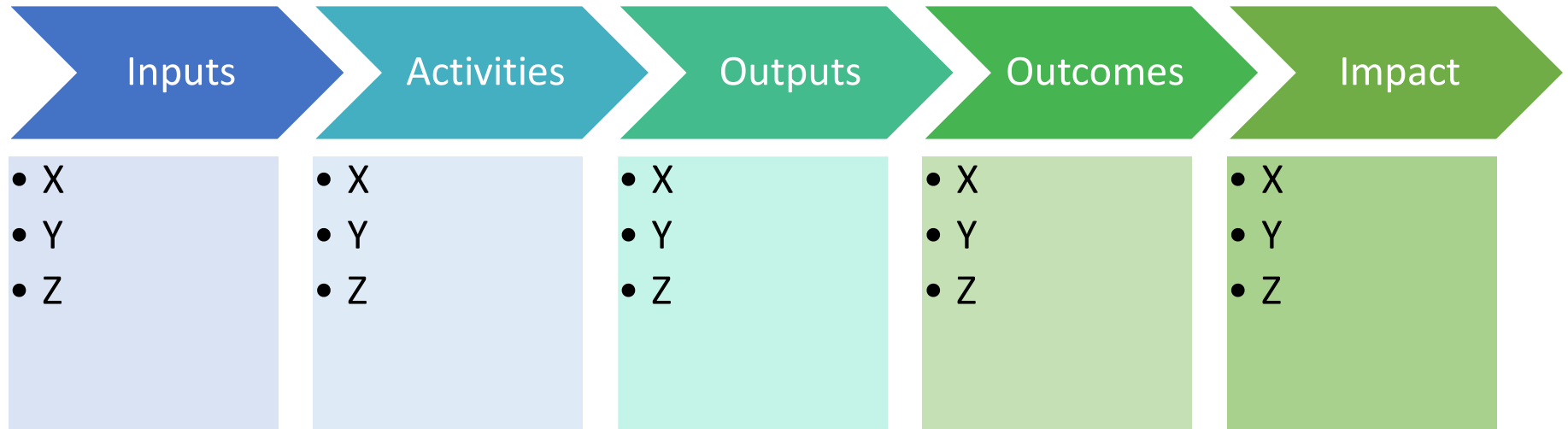
Transport Planning

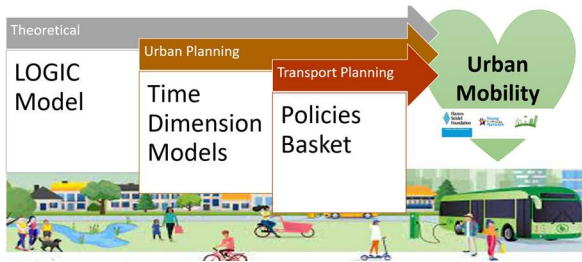
Policies
Basket

Urban
Mobility



LOGIC model





Time Dimension Models

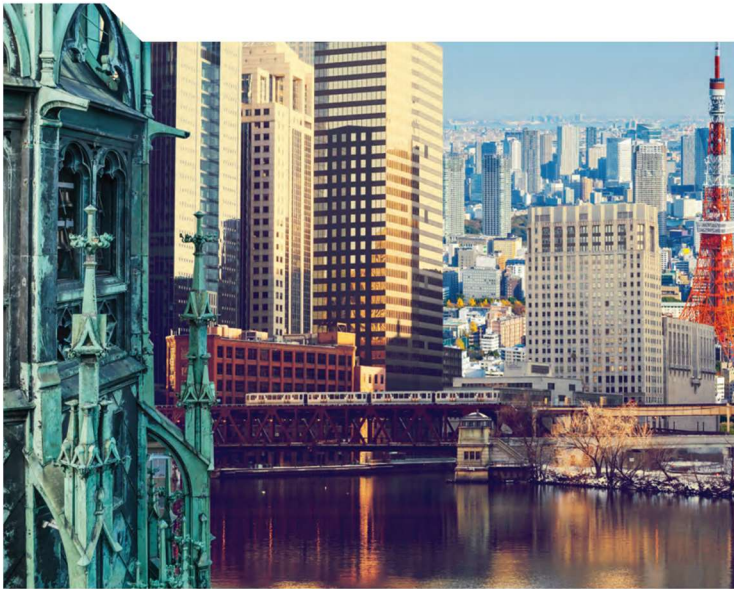




The Metropolitan Century

UNDERSTANDING URBANISATION AND ITS CONSEQUENCES

Policy Highlights



Metropolitan level

Light speed rail and mass transits

Connecting multiple cities

90 min city



30 min city

City level

Rapid bus, ride sharing, bicycles

Accessibility

15 min city

Carlos Moreno

Neighborhood level

Walkability and bicycles

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:15 CITY

An aerial photograph of a city, likely Bern, Switzerland, showing a dense urban landscape with a prominent clock tower in the foreground. The image is overlaid with white text.

The 15-Minute City
Putting people at the center
of urban transformation

Street level

Quick adaptation and change

1 min city



Sweden's Street Moves project aims to introduce adaptable curb elements like this scooter-parking and seating unit to every street in the nation by 2030. Photo courtesy ArkDes

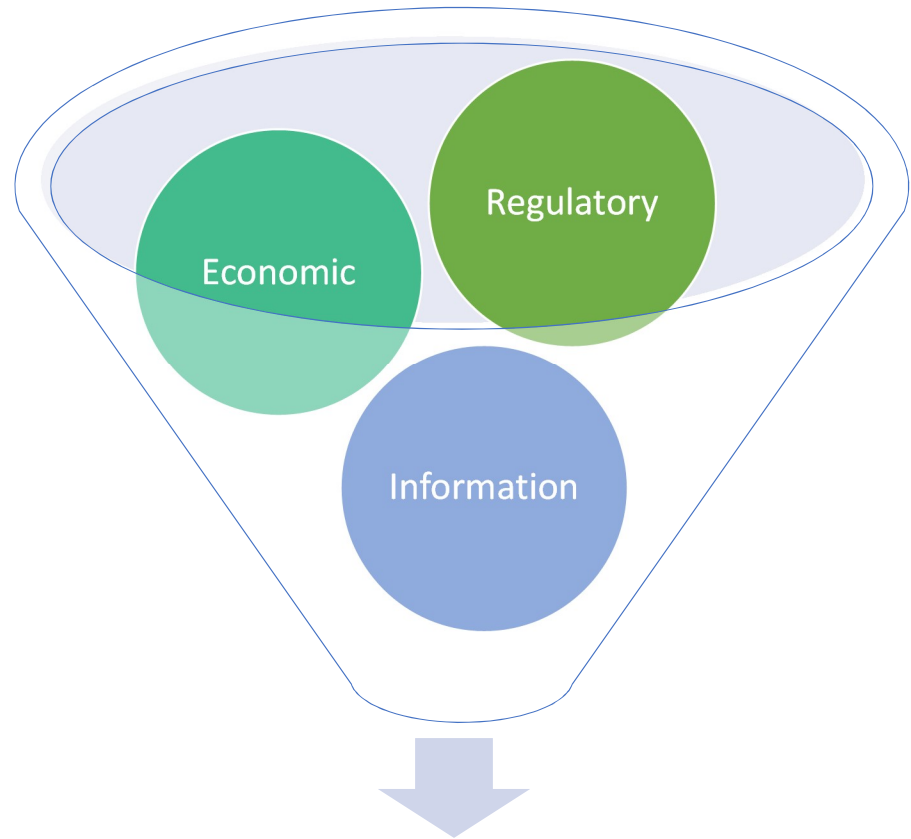
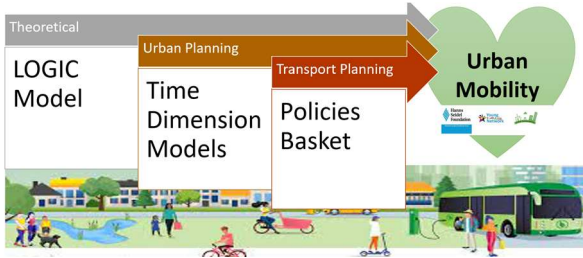
CityLab | Design

Make Way for the 'One-Minute City'

While the "15-minute city" model promotes neighborhood-level urban planning, Sweden is pursuing a hyper-local twist: a scheme to redesign every street in the nation.

By Feergus O'Sullivan

January 5, 2021, 7:24 PM GMT+5

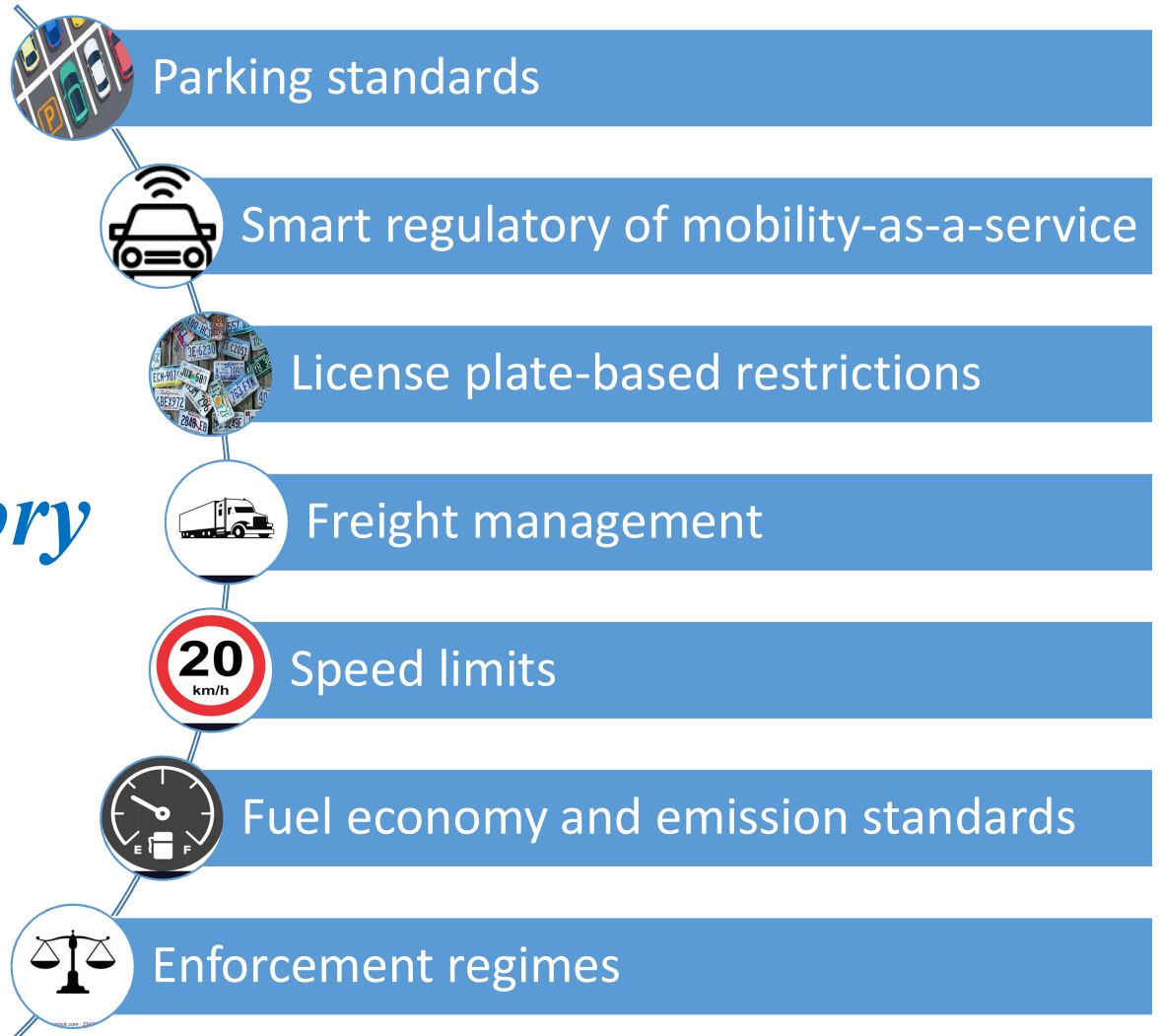


Policies Basket



Policies Basket

Regulatory



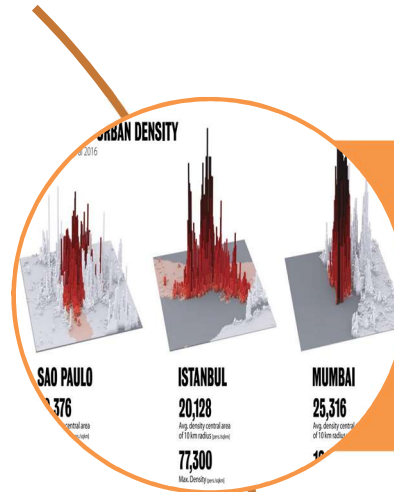


Policies Basket

Economic

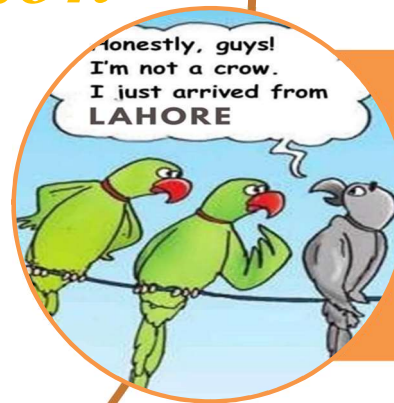


Policies Basket



Statistical services

Information



Awareness campaigns

Regulatory

- Parking standards
- Smart regulatory of mobility-as-a-service
- License plate-based restrictions
- Freight management
- Speed limits
- Fuel economy and emission standards
- Enforcement regimes
- Highway codes and road standards

Economic

- Infrastructure budget reallocation
- Road pricing
- Land value capture
- Fuel subsidies
- Operational budget reallocation
- Tax breaks for automobiles
- New vehicle registration
- Automobile import tariffs

Information

- Statistical services
- Awareness campaigns



Policies Basket

Thank you



Together we can ...

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