Urban design and new nomads

Towards a new balance between cities and territory

Presentation content:

1. Definition of urban design and its evolution during 19th-20th century

2. Main topics for urban design in the 21st century:
- migration and urbanization,
- energy landscape and relation between city and territory

3. New tendencies

In which city I would like to live?

Write down 3 things that you think are important for a livable city?

References

Housing

SUPER KILEN

A Project by
BIG
TOPOTEK 1
SUPERFLEX

Edited by
Barbara S

Public space

ARVINIUS + ORFEUS

Infrastructure

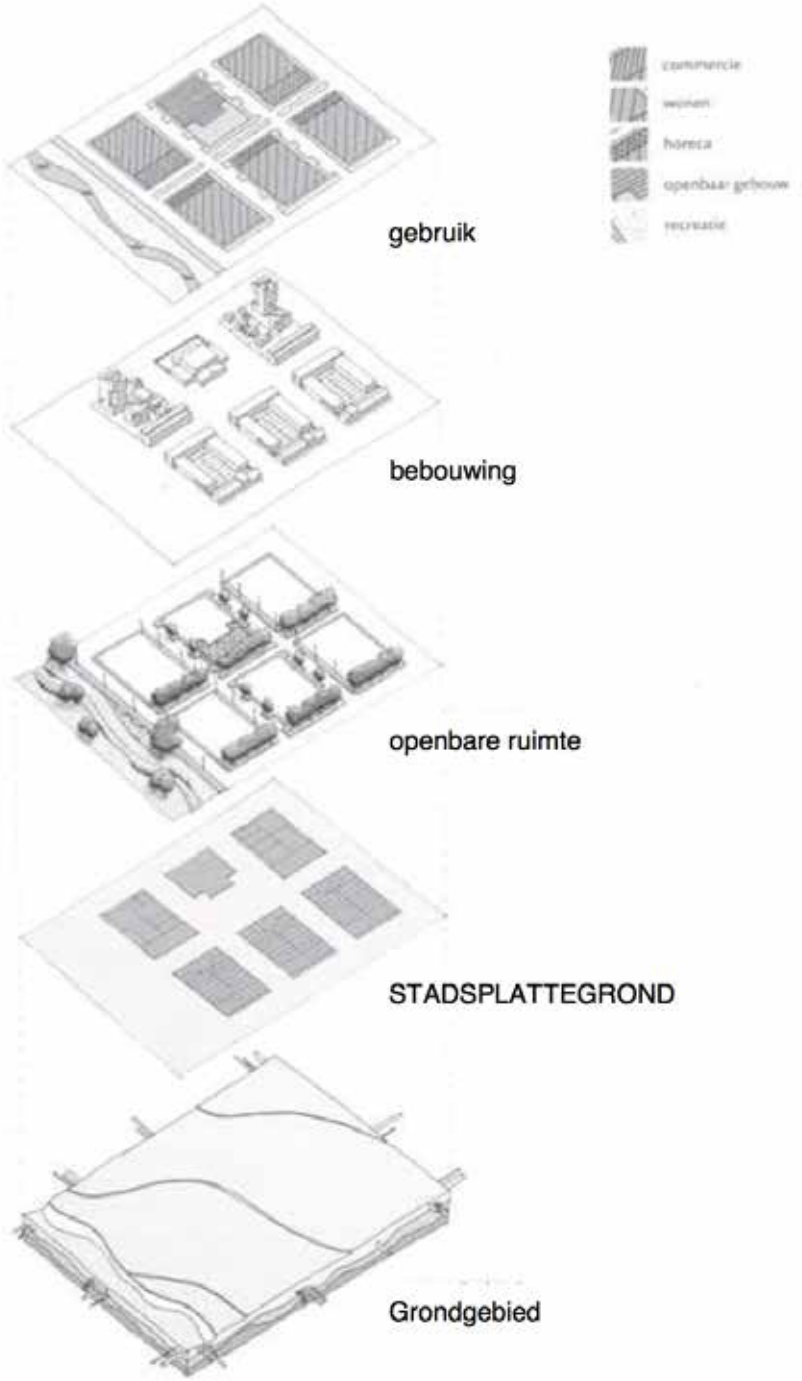
What is urban design?

‘Creating the theatre of public life’
Jerry Spencer

‘The process of moulding the form of the city through time’
Peter Webber

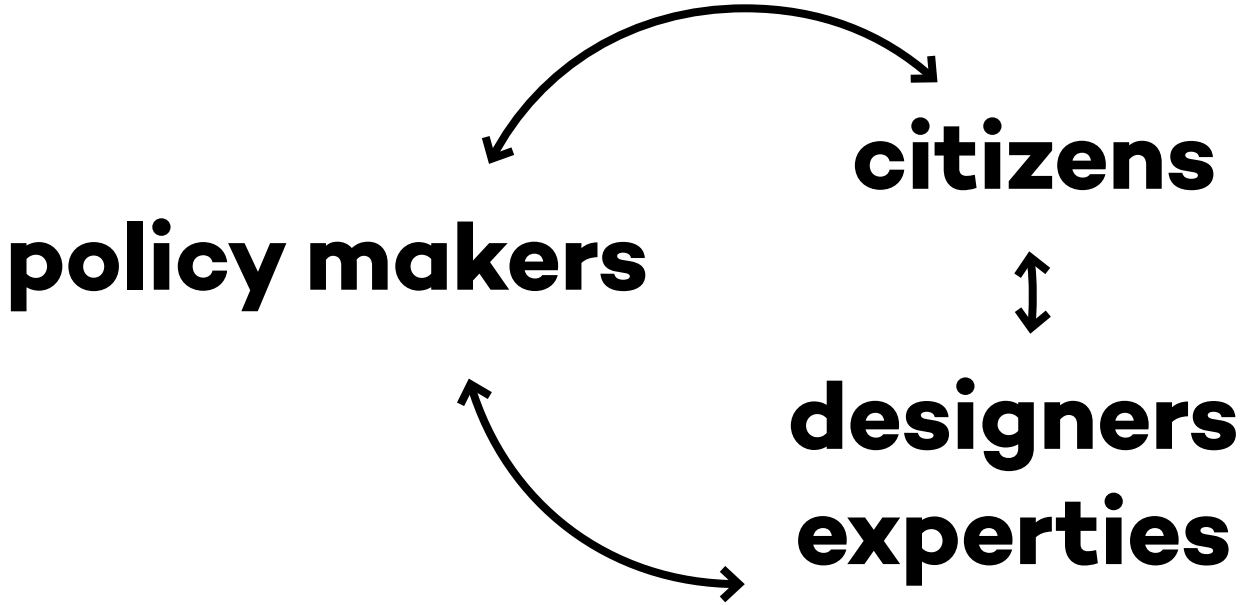
‘It is the collaborative and multi-disciplinary process of shaping the physical setting for life in cities, towns and villages; the art of making places; design in an urban context. Urban design involves the design of buildings, groups of buildings, spaces and landscapes, and the establishment of frameworks and processes that facilitate successful development’
Spiro Kostof_Tha city shaped

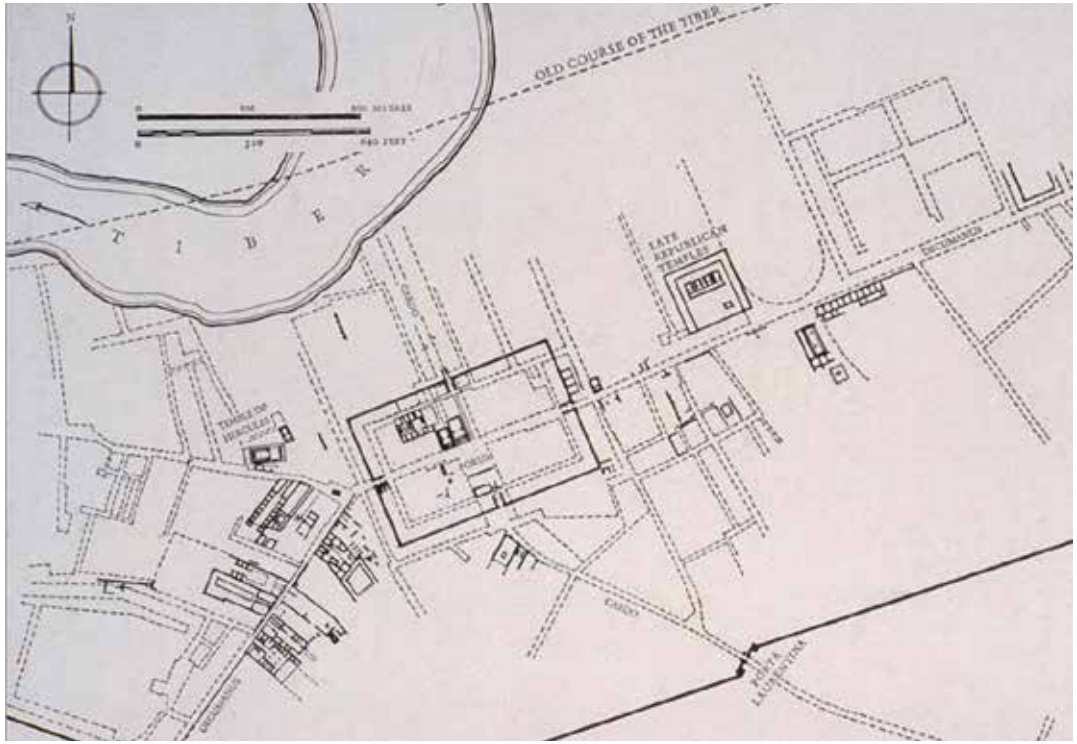
‘The vision of the Netherlands of tomorrow oscillated between common sense and science fiction’
Kees Christiaanse_Dutch New Worlds



Who makes the city?

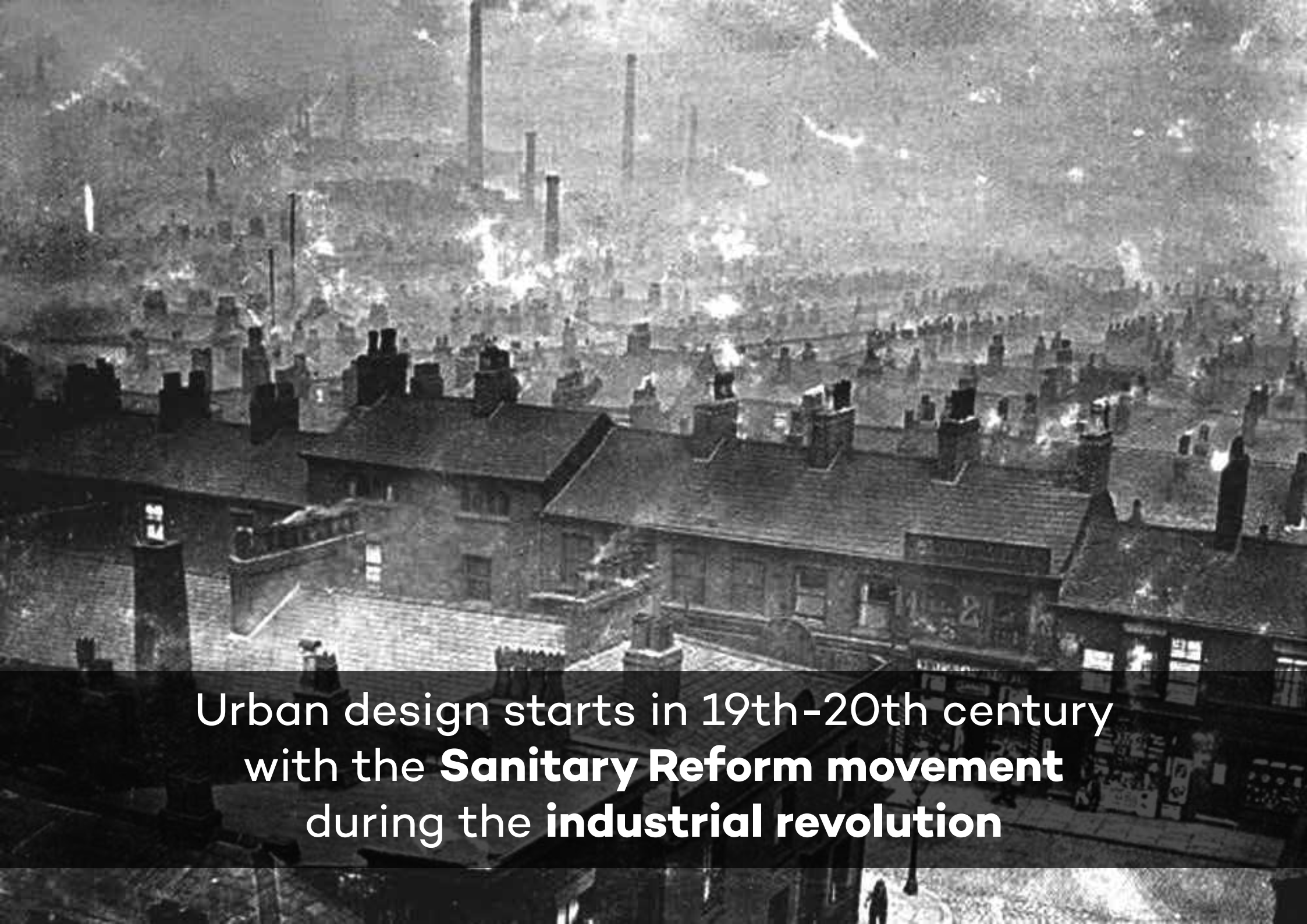
Who influence the decisions that define how the city will look like?





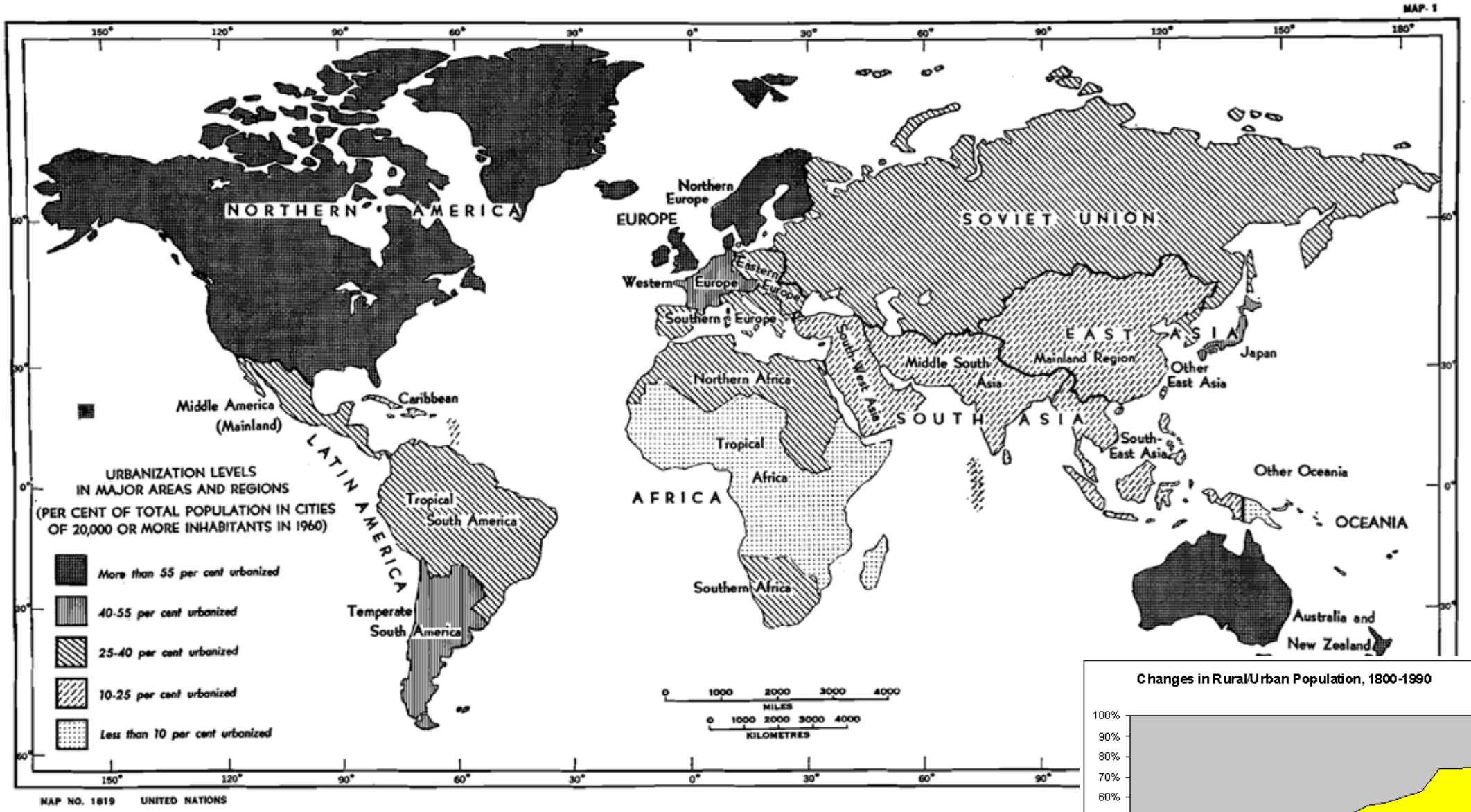
300 bC
Ostia antica, Rome

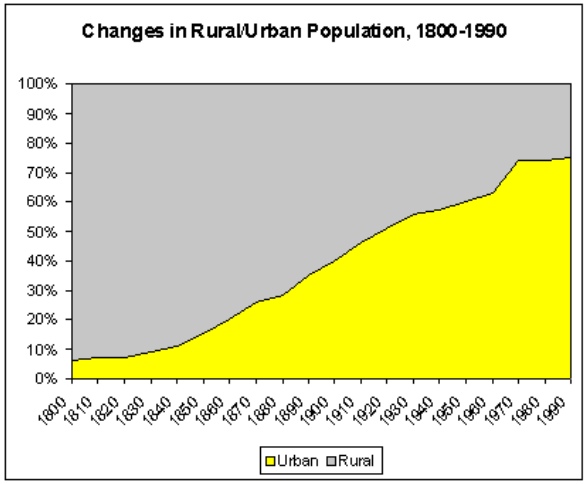
1200
Padova



Urban design starts in 19th-20th century
with the **Sanitary Reform movement**
during the **industrial revolution**

Map 1. Urbanization levels in major areas and regions of the world (percentage of total population in cities of 20,000 or more inhabitants in 1960)





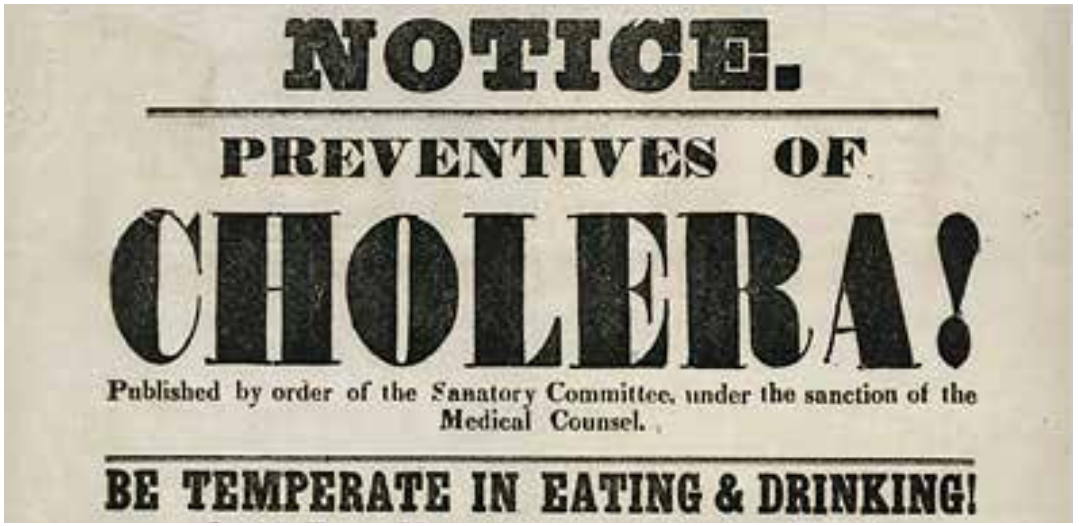
1840

New York city, NY *..... 312,710

1920

New York city, NY *..... 5,620,048

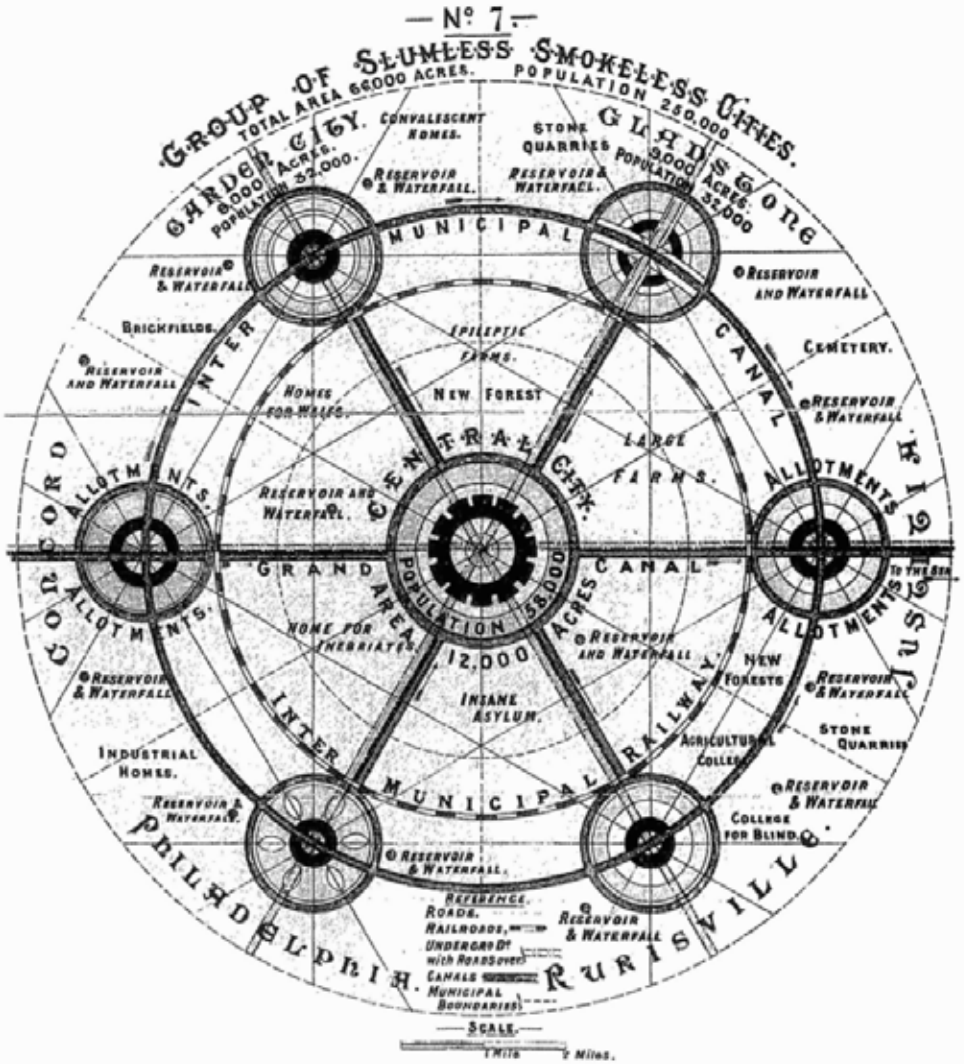
There were many reasons why towns were so unhealthy in the 19th century. These reasons include that houses were built so crowded together in narrow, terraced streets, also there was no law against houses being built properly.



The garden city movement

The English founder of the garden city movement, Utopian city in which people live harmoniously together with nature

Ebenezer Howard



Emerald Necklace Park
Central Park, New York (1858)

Frederick Law Olmsted

Haussmann's rennovation Paris

Napoleon III instructed Haussmann to bring air and light to the center of the city, to unify the different neighborhoods with boulevards, and to make the city more beautiful.

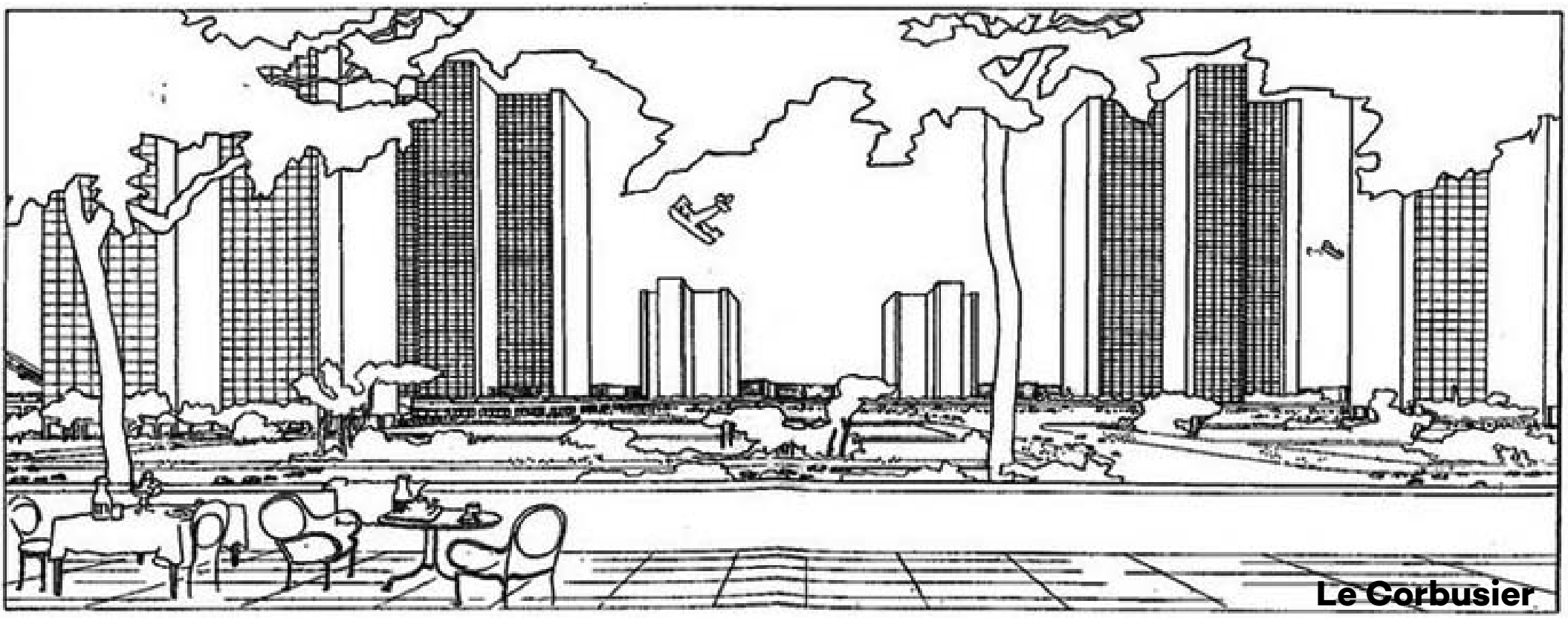
1853-1870

Camille Pissarro (1898)

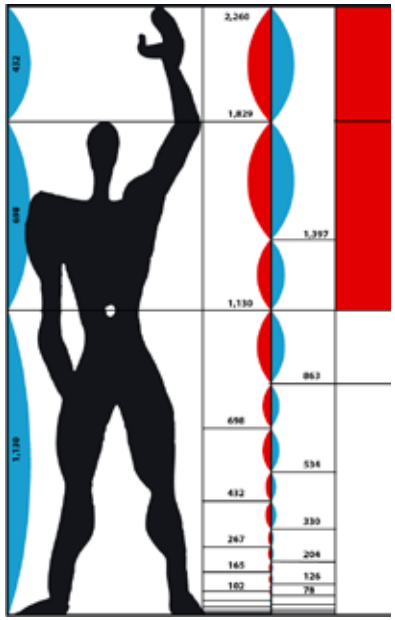
The **Modern movement**

2nd transition in Urban design, 20th century

Amsterdam



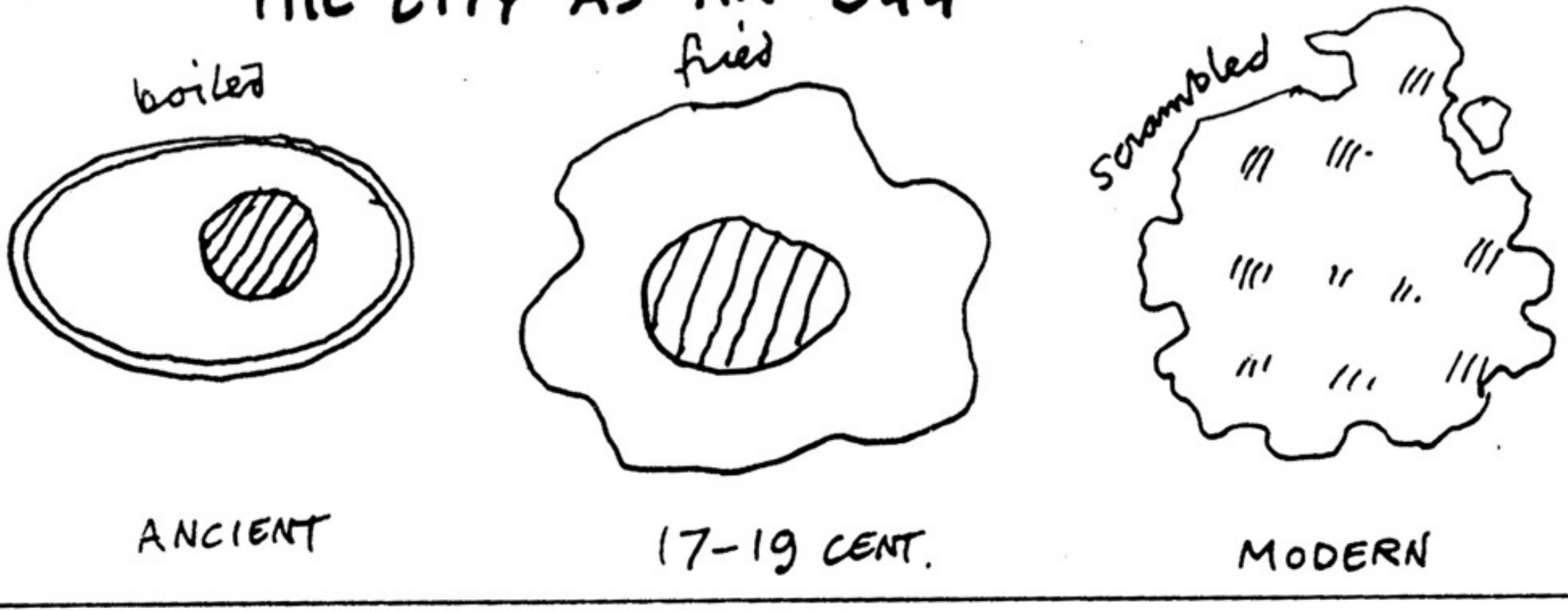
Le Corbusier



Villa Savoye, France

Chandigarh, India

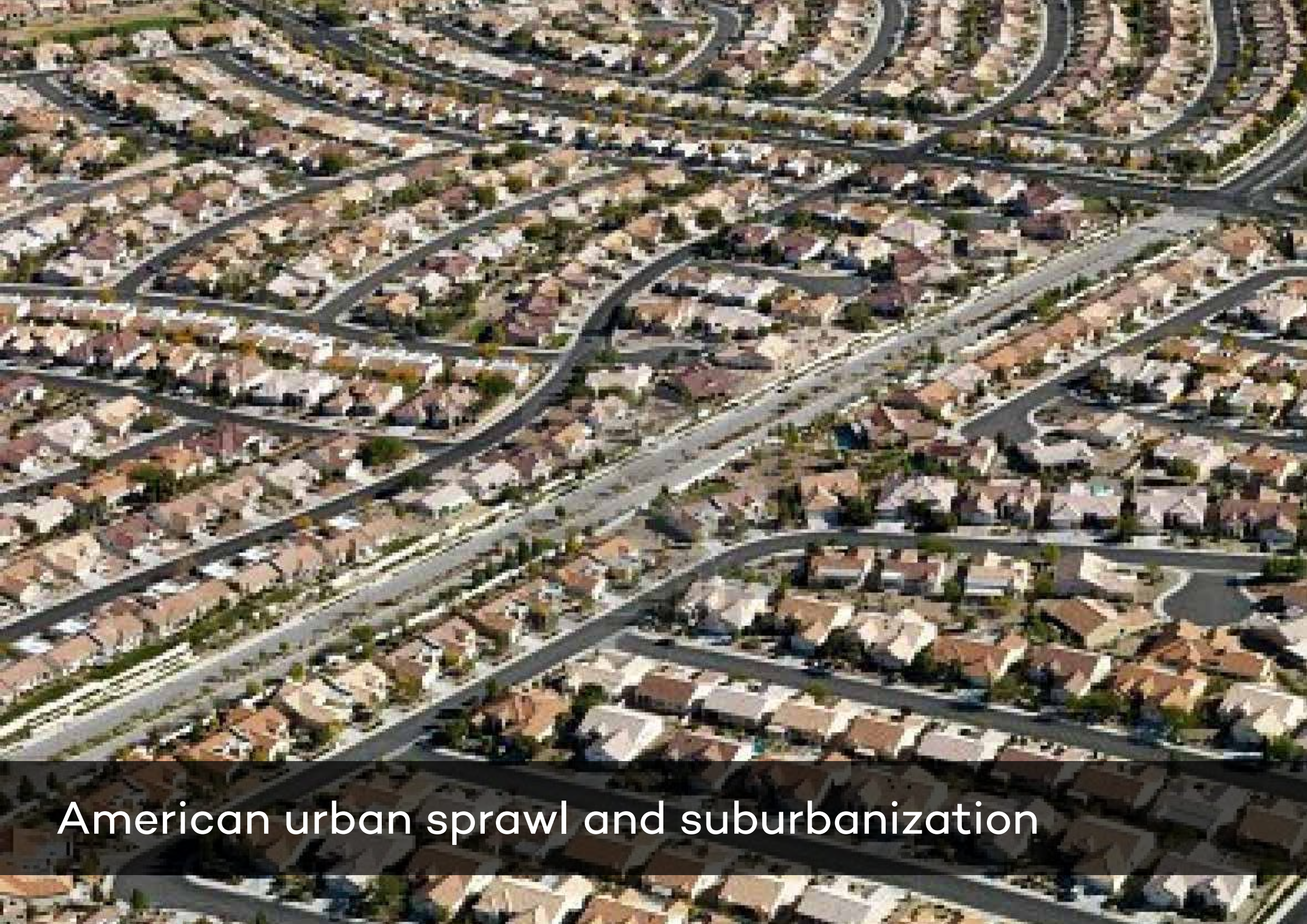
THE CITY AS AN EGG



The general motors pavilion and the **car invention**
3rd transition in Urban design
Norman Geddes 1939 New York

Bermtoerisme

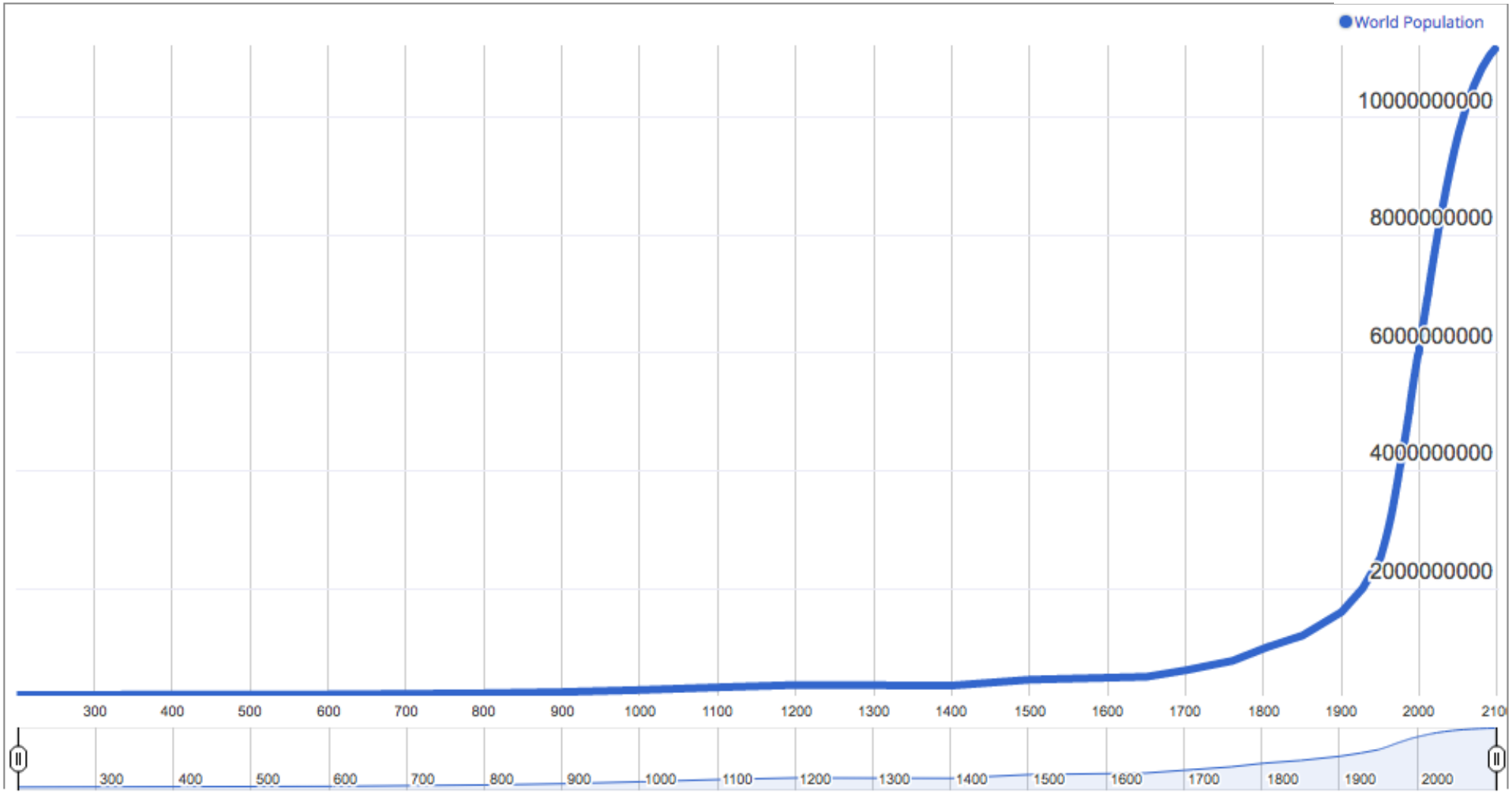
Bermtoerisme



American urban sprawl and suburbanization

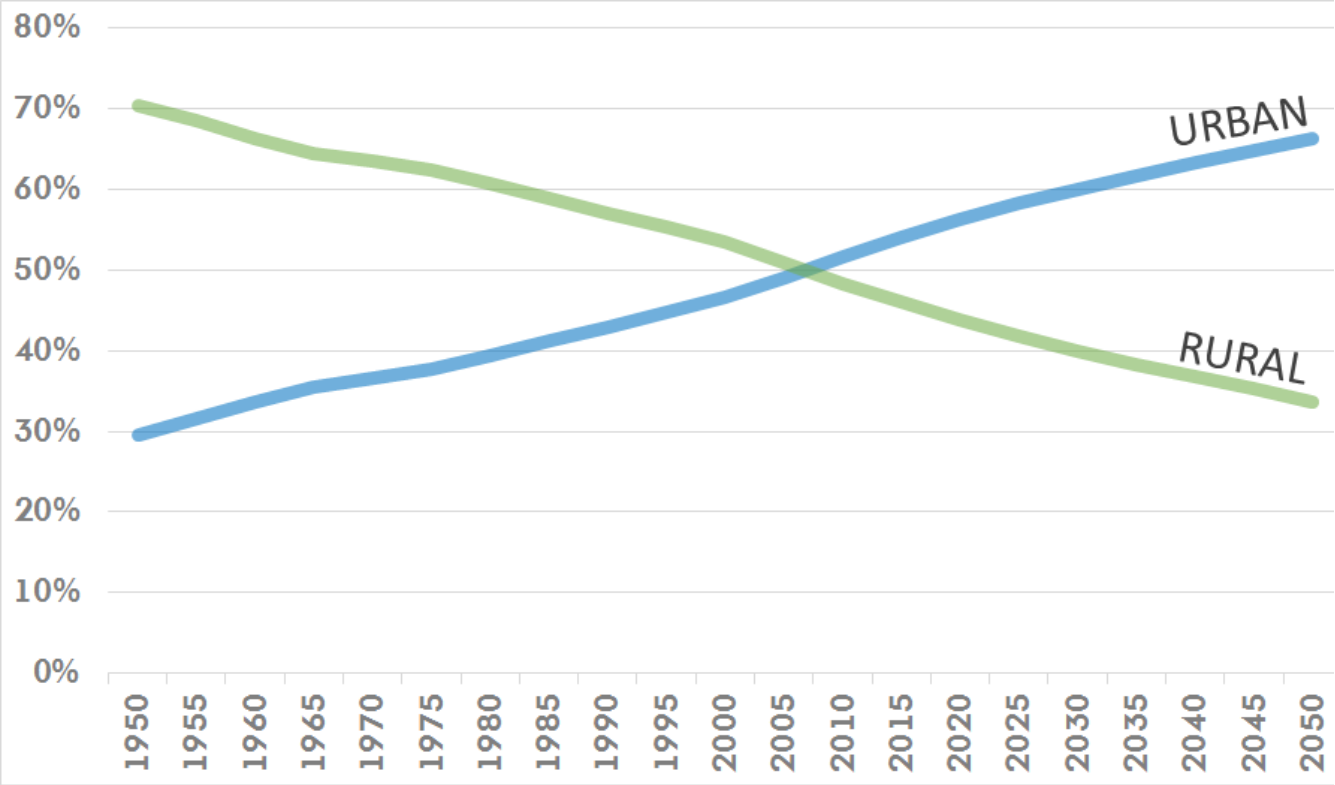
World Population: Past, Present, and Future

7,515,284,153 inh



HOMO-URBANUS: Nomads towards the city

75% urban population



"When cities don't plan for increases in population it drives up house and land prices, creating rich (ghettos) and poor ghettos. You get a very unequal society and that inequality is manifested where people live, in our neighbourhoods, and it means there can be less capacity for empathy and less development for all society"

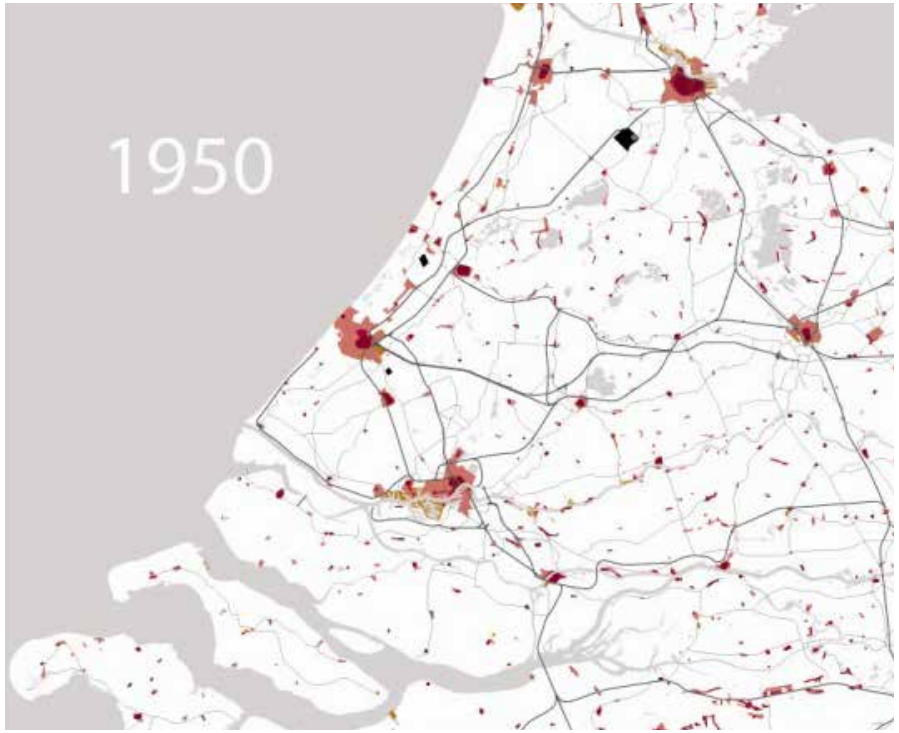
Jack Finegan
Urban Programme Specialist
UN-Habitat

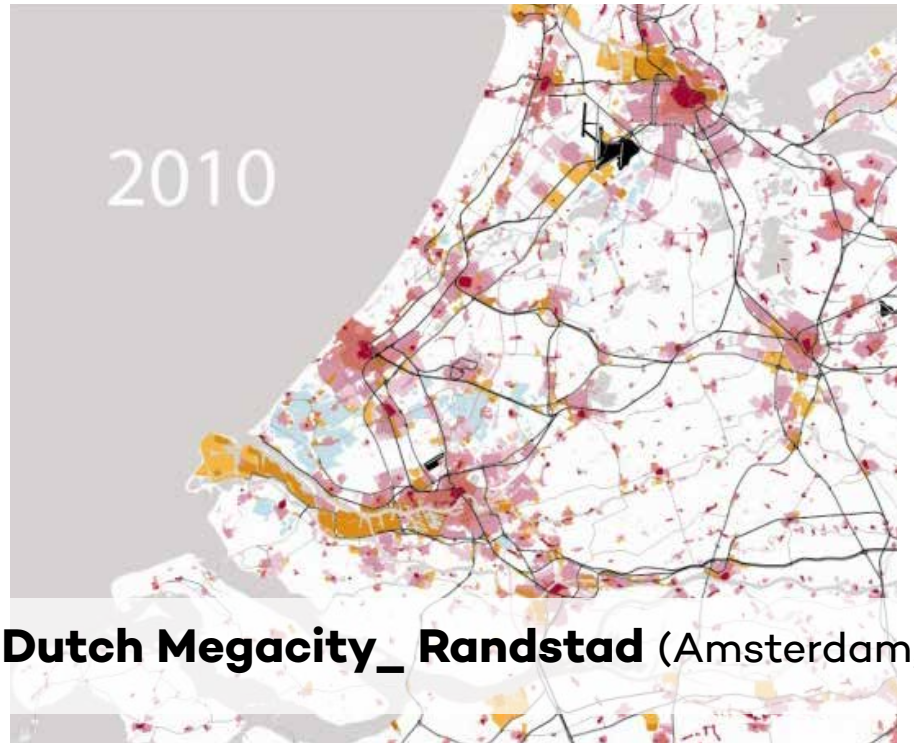
Metropolis/Megacities with more than **10.000.000** inhabitants 2016_n. 29 1990_n. 9

Tokyo metropolitan area 37.835.000 inh.

Amsterdam 848.861 inh.

2014_203 thousand immigrants, 146 thousand emigrants
Last year, 203 thousand individuals registered as immigrants in one of the Dutch municipalities, an increase by nearly 20 thousand relative to 2014 due to the asylum seekers from Syria (20.000), Ethiopia, Eritrea.
It was estimated 40-50% of emigrants were ethnic non-Dutch.

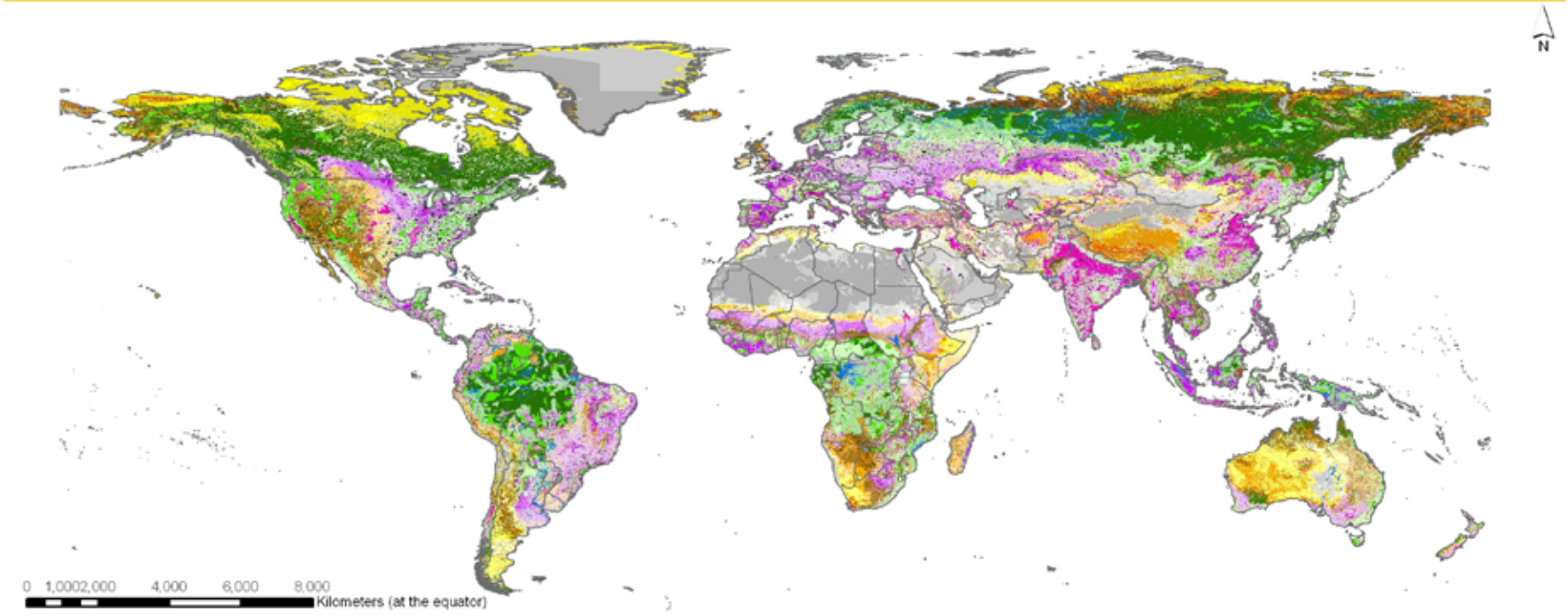




Dutch Megacity_ Randstad (Amsterdam, Rotterdam, Den Haag, Utrecht) 7.1 million inh.

Towards a new balance between cities and territory

Land use systems of the world



Geographic Projection

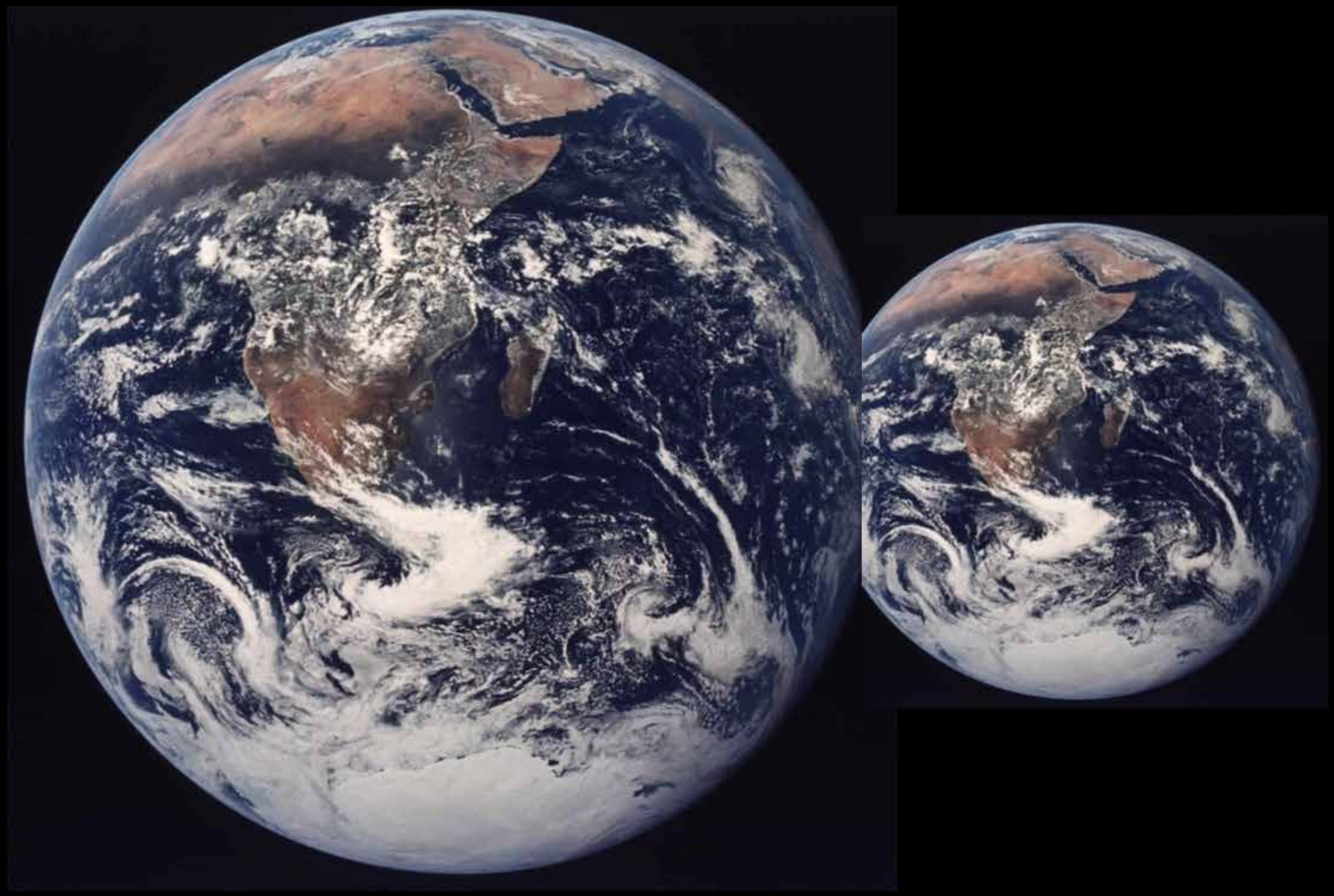
Land use systems legend

- 1 Forest virgin
- 2 Forestry protected
- 3 Forestry with agricultural activities
- 4 Forestry moderate or higher livestock density
- 7 Grasslands unmanaged
- 8 Grasslands protected
- 9 Grasslands low livestock density
- 10 Grasslands moderate livestock density
- 11 Grasslands high livestock density
- 13 Shrub cover unmanaged
- 14 Shrub cover protected
- 15 Shrub cover low livestock density
- 16 Shrub cover moderate livestock density
- 17 Shrub cover high livestock density
- 19 Rainfed Agric. (Subsistence / commercial)
- 20 Crops and mod. int. livest. density
- 21 Crops and high livest. density
- 22 Crops, large-scale irr., mod. or higher livest. dens.
- 23 Agriculture Large scale irrig.
- 24 Agriculture protected
- 25 Urban areas
- 26 Wetlands unmanaged
- 27 Wetlands protected
- 28 Wetlands mangroves
- 29 Wetlands with agric. activities
- 30 Sparse areas unmanaged
- 31 Sparse areas protected
- 32 Sparse areas with low livest. density
- 33 Sparse areas with mod./high livest. density
- 34 Bare areas unmanaged
- 35 Bare areas protected
- 36 Bare areas with low livest. density
- 37 Bare areas with moderate livest. density
- 38 Water unmanaged
- 39 Water protected
- 40 Water inland fisheries
- Country boundaries

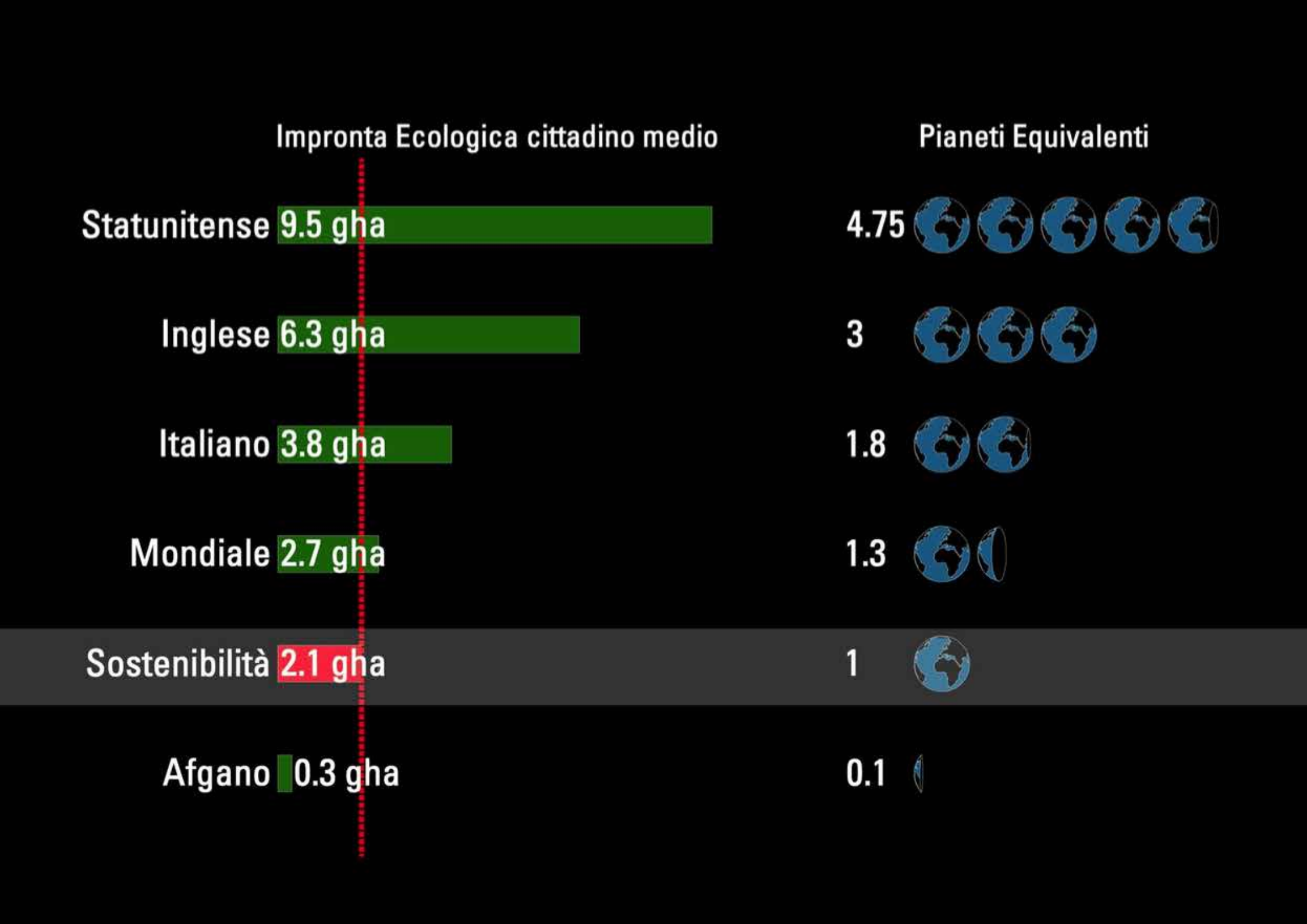
Reference: LADA, 2008. "Mapping Land Use Systems at global and regional scales for Land Degradation Assessment Analysis". Nachtergaele F. & Petri M. LADA Technical report n.8, version 1.1.

The Land Use Database of the world was developed as part of the project Land Degradation Assessment in Drylands (LADA), a four-year project funded by the Global Environment Facility (GEF). The project is implemented by the United Nations Environment Programme (UNEP) and executed by the Food and Agriculture Organization of the United Nations (FAO).

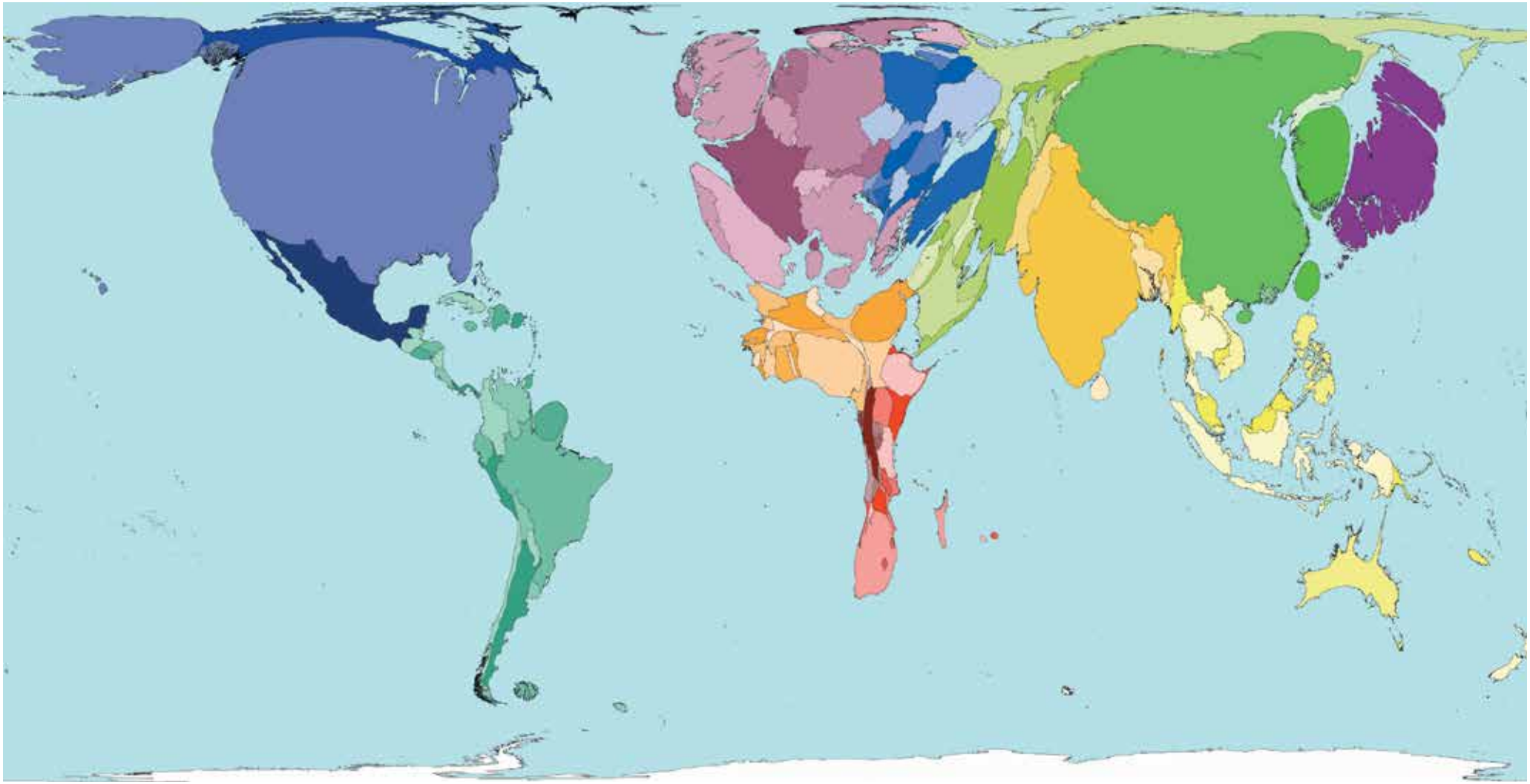
UNEP GEF



Today we need 1,5 equivalent planet Earths to provide the resources we need in a sustainable way


Impronta Ecologica cittadino medio
Pianeti Equivalenti
Statunitense 9.5 gha
4.75
Inglese 6.3 gha
3
Italiano 3.8 gha
1.8
Mondiale 2.7 gha
1.3
Sostenibilità 2.1 gha
1
Afgano 0.3 gha
0.1

World map by footprint



"People consume resources and ecological services from all over the world, so their footprint is the sum of these areas, wherever they may be on the planet."

The Living Planet Report, 2006

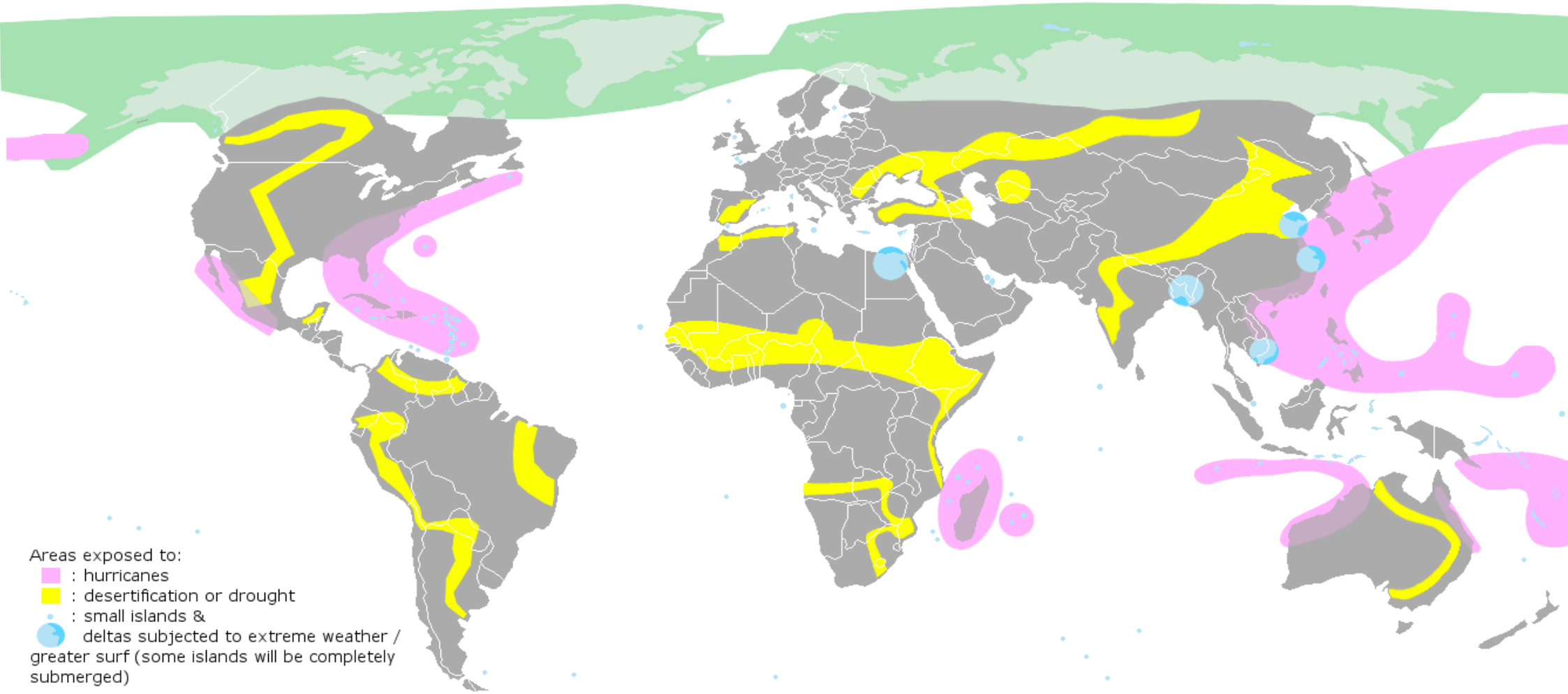
Energy

potential vs use

551 ZJ	solar energy
1 ZJ	geothermie
0,1 ZJ	tidal energy
0,475 ZJ	**human economy**

Resilience city

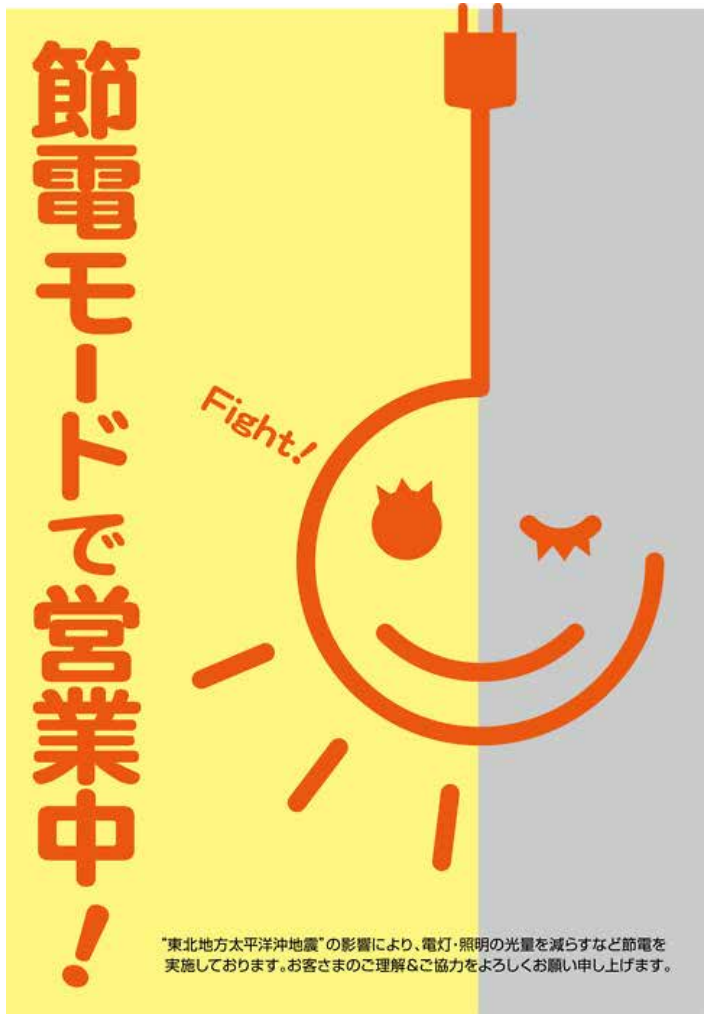
The new nomads: climate refugee



expected 150-200 millions in 2050

Saving first

production/target

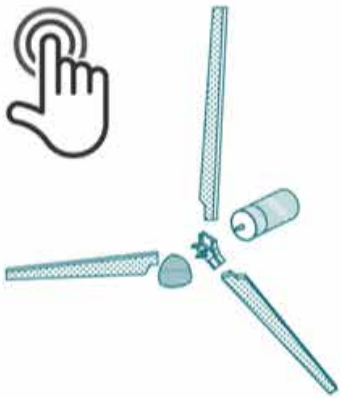


Saving

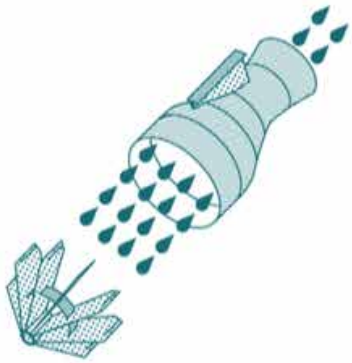
-20% energy use, Japan 2011

Energy from sustainable sources

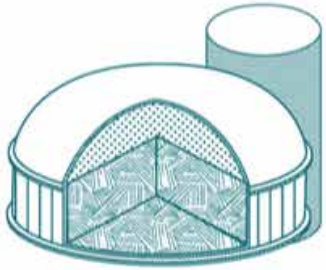
windenergie



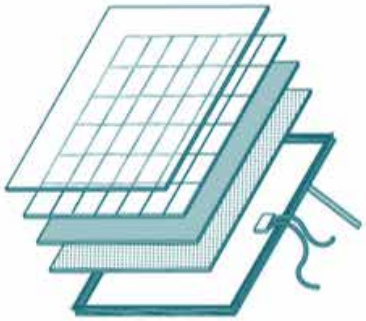
waterenergie



biomassa



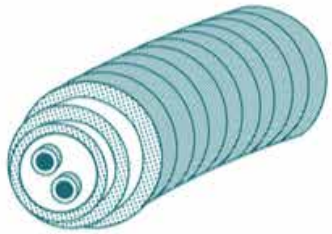
zonne-energie



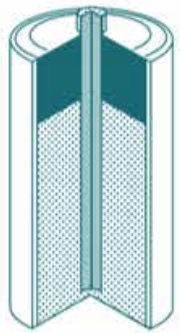
geothermie

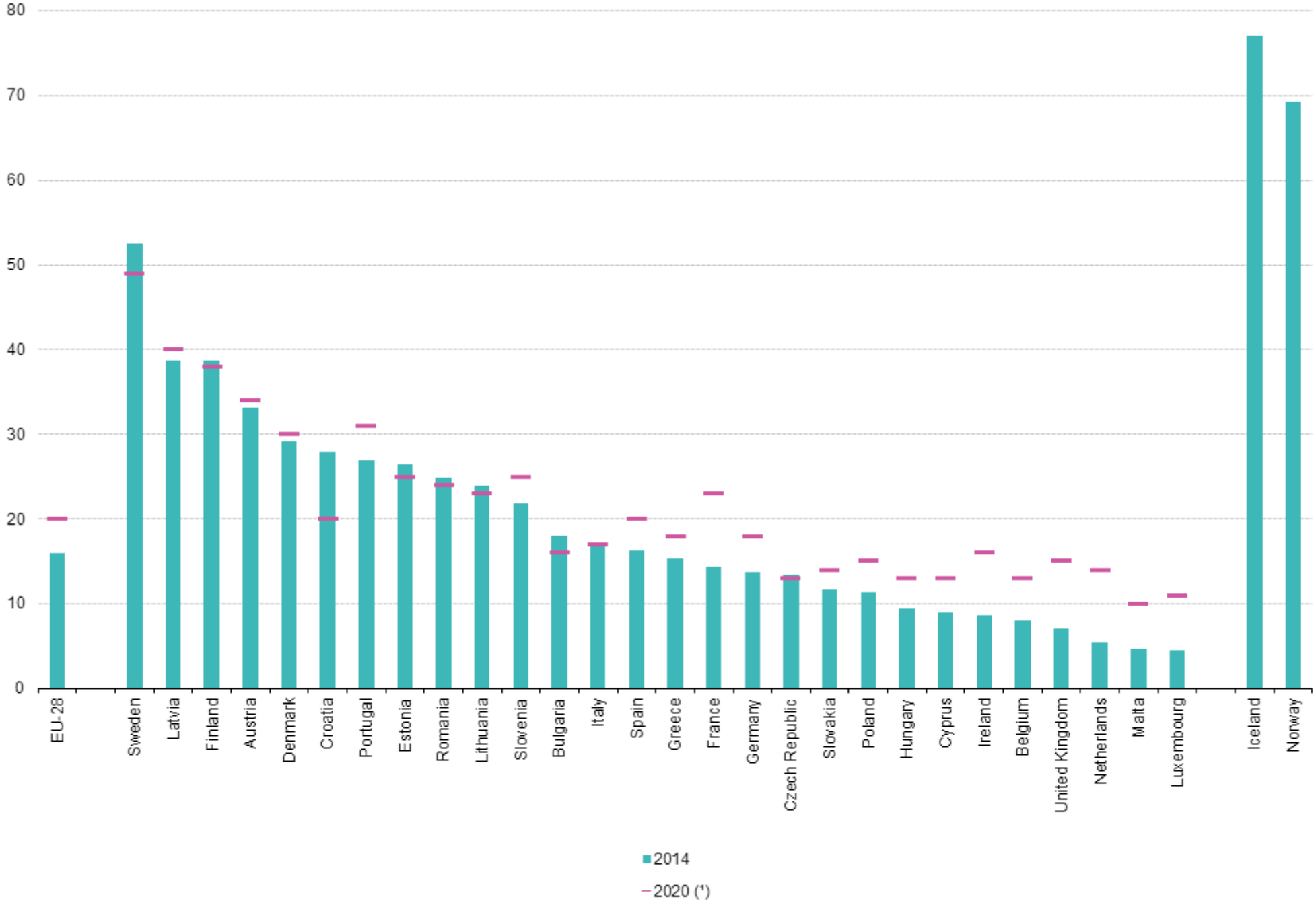
elektriciteitsnet

warmtenet

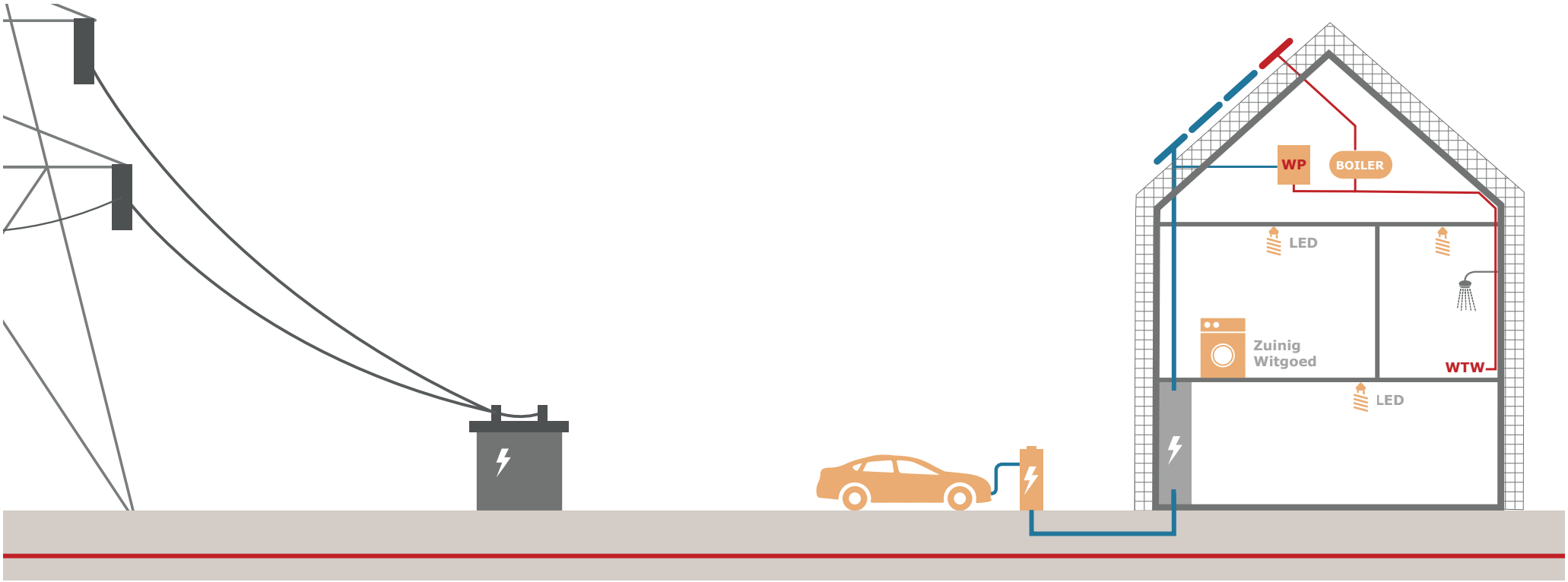


opslag

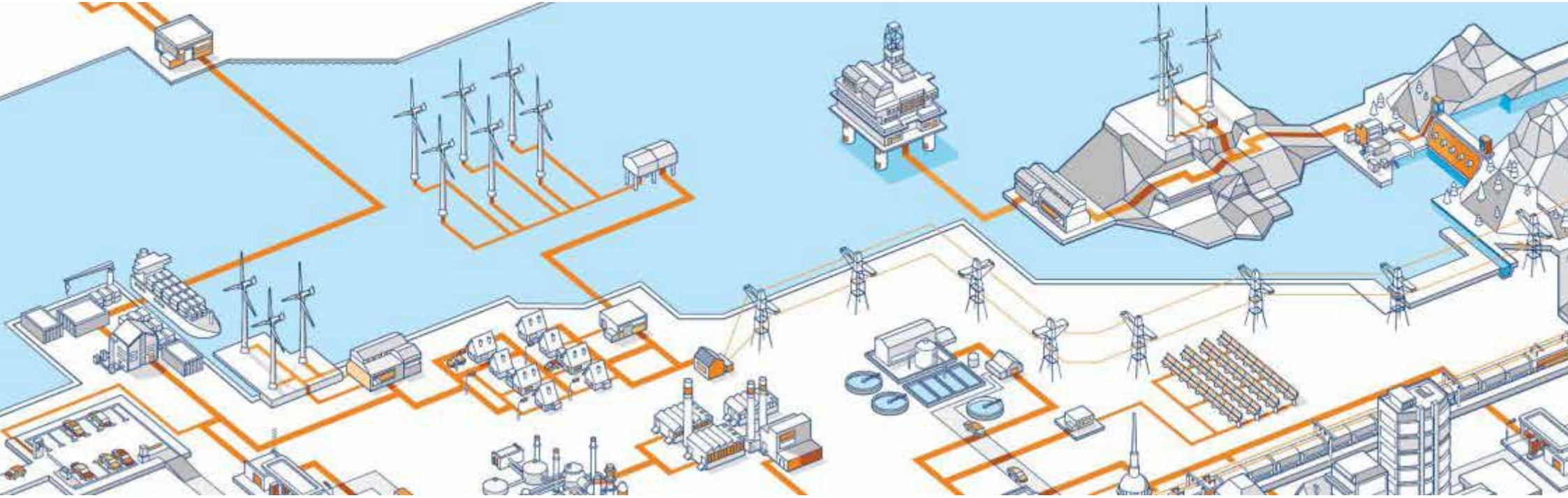




(1) Legally binding targets for 2020. Iceland and Norway: not applicable.
Source: Eurostat (online data code: t2020_31)


WP
BOILER
LED
Zuinig
Witgoed
WTW
LED

Smart grid - smart city



1st energy generation

2nd energy generation

Veen afgraving
Drents Archief

Energy transition means landscape transition

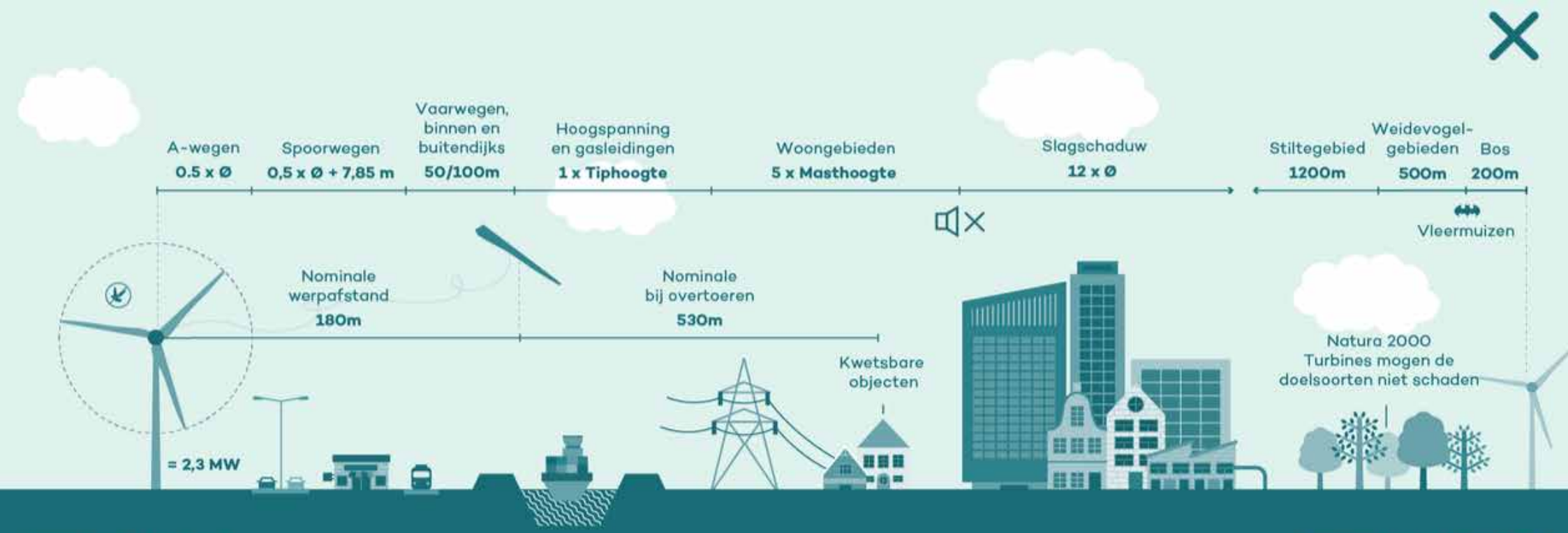
3rd energy generation

Stad en landelijk gebied: Leiden

In landelijk gebied op de grens van stad en land worden de beperkingen voor nieuwe energie het meest zichtbaar

Beperkingen 3MW windturbine

Beperkingen door nieuwe stedelijke ontwikkeling



WINDSNELHEDEN

VOLLAST UREN

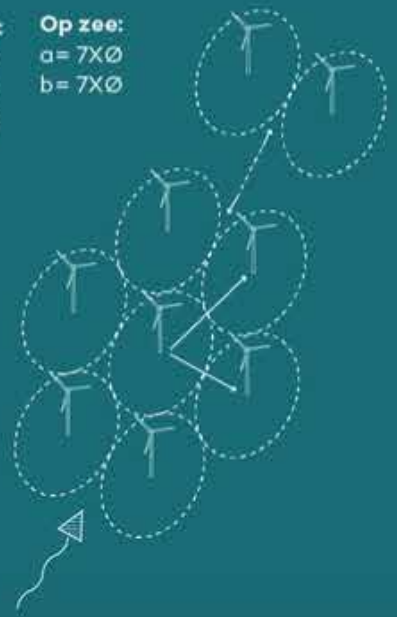
< 7 m/s	2240
7-7,5 m/s	2620
7,5-8 m/s	2850
> 8 m/s	3200

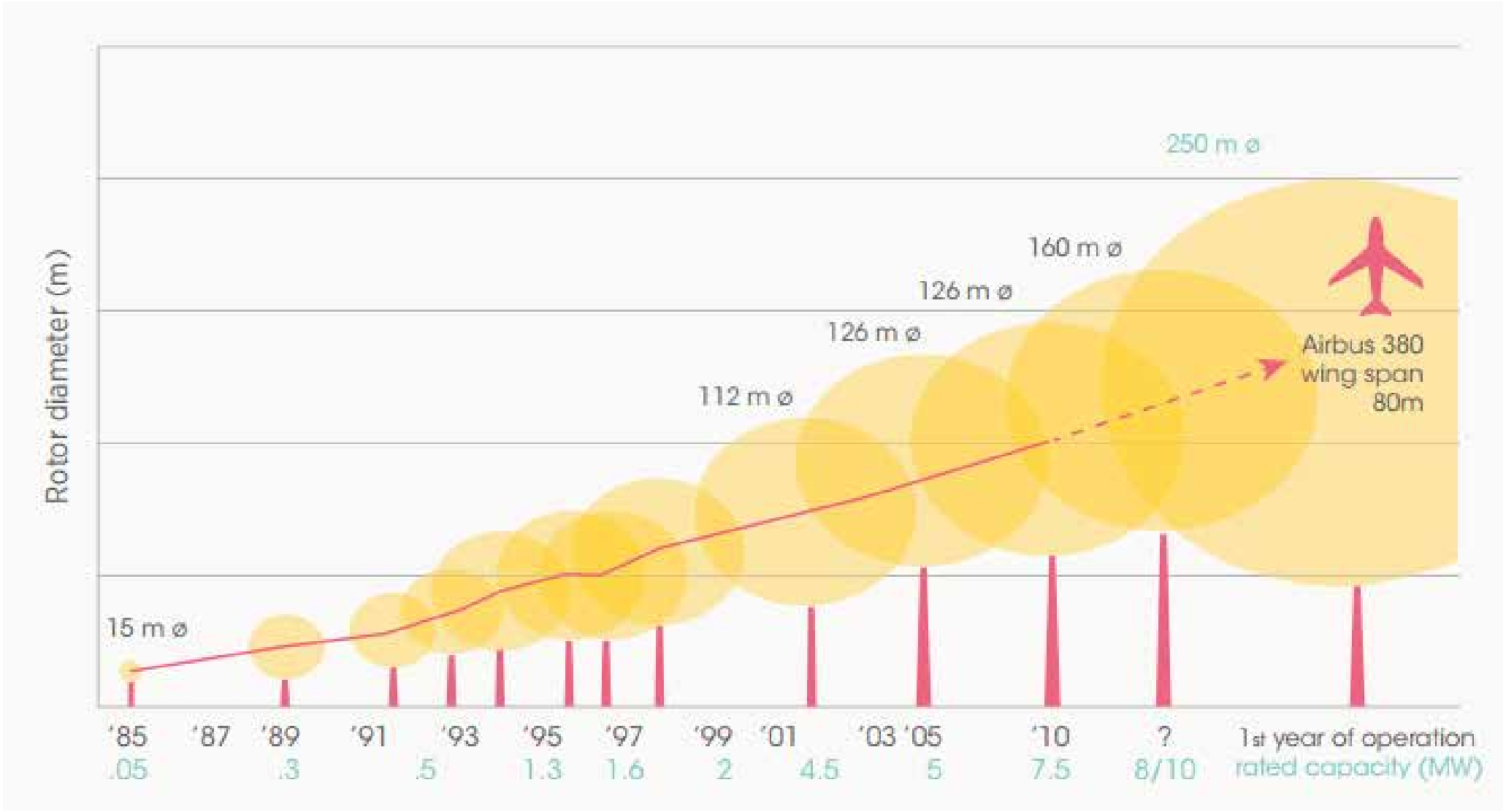
VERMOGEN EN GROOTTE

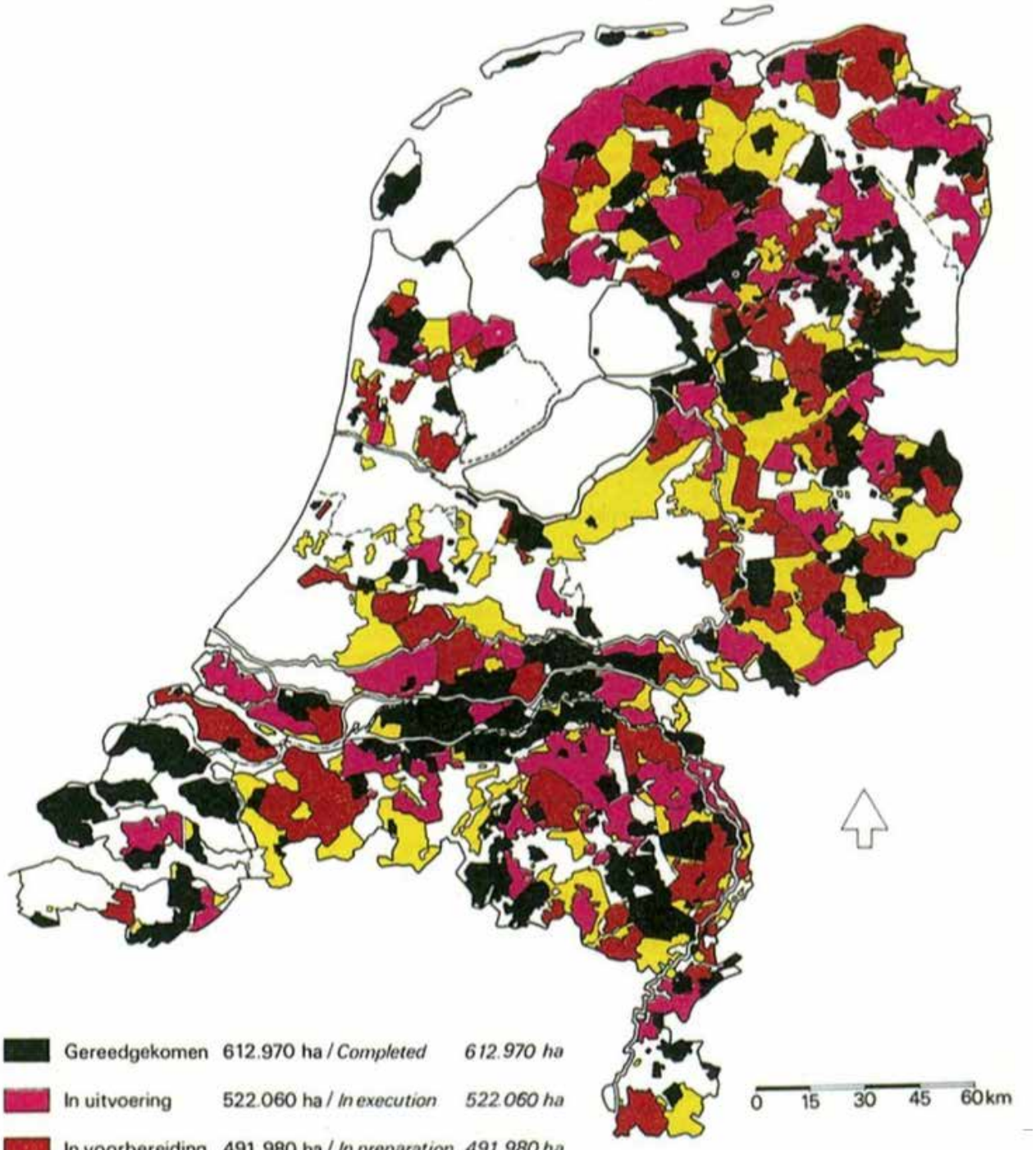
OPSTELLING OP LAND

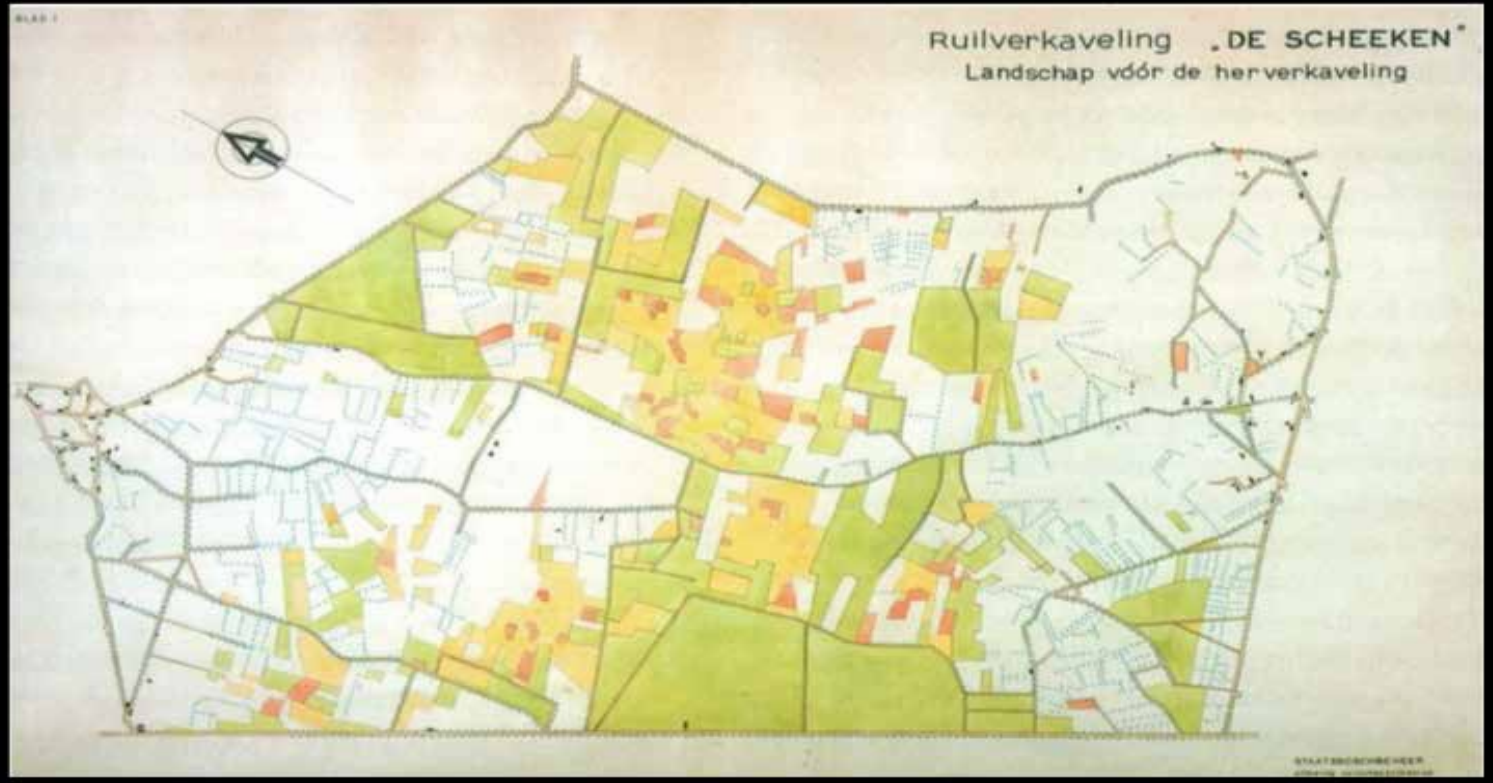
c= buffer ivm regeneratie van de luchtstroom

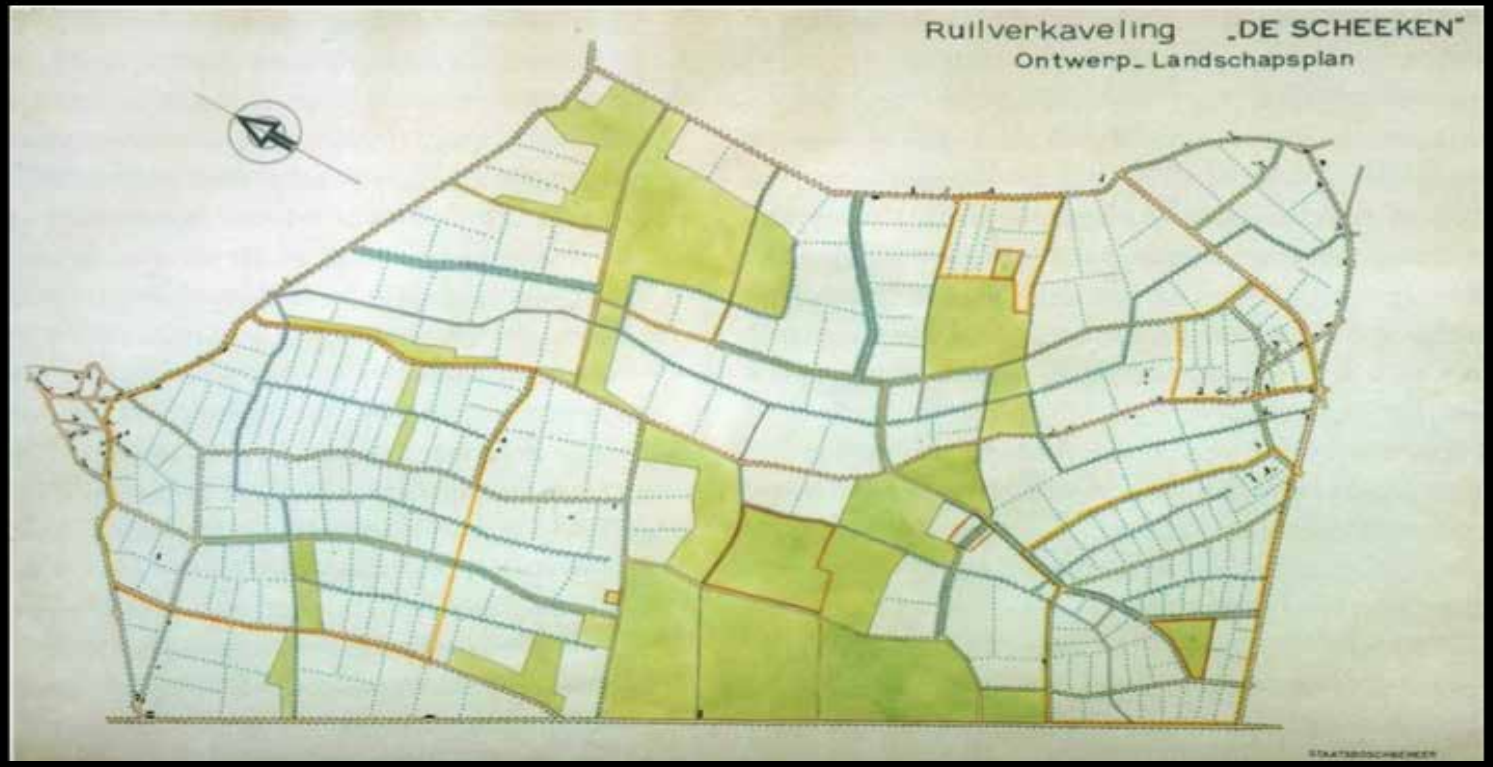
Op land:	**Op zee:**
a= 6XØ	a= 7XØ
b= 4XØ	b= 7XØ
c= 1/1,5	




Rotor diameter (m)
250 m ø
160 m ø
126 m ø
126 m ø
112 m ø
15 m ø
Airbus 380
wing span
80m
'85 '87 '89 '91 '93 '95 '97 '99 '01 '03 '05 '10 ? 1st year of operation
.05 .3 .5 1.3 1.6 2 4.5 5 7.5 8/10 rated capacity (MW)


Gereedgekomen 612.970 ha / Completed 612.970 ha
In uitvoering 522.060 ha / In execution 522.060 ha
In voorbereiding 491.980 ha / In preparation 491.980 ha
Aangevraagd 649.240 ha / Applied for 649.240 ha
0 15 30 45 60km


Ruilverkaveling „DE SCHEEKEN"
Landschap vóór de herverkaveling

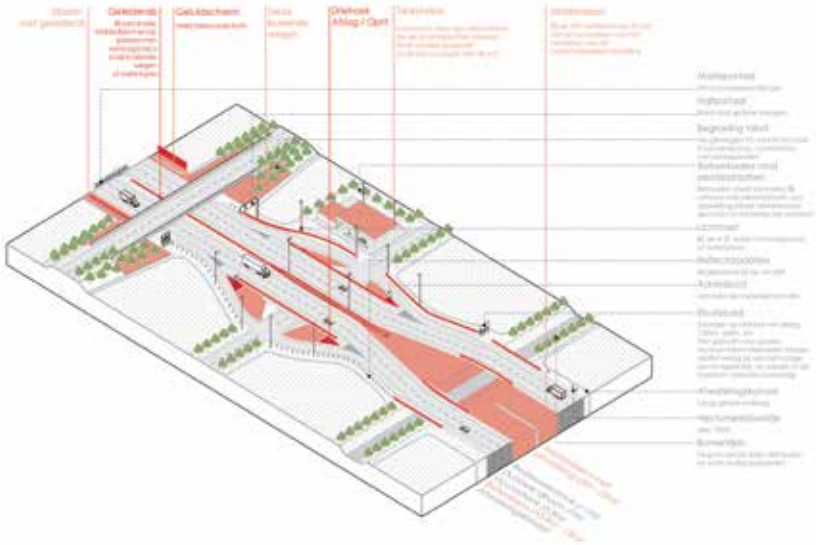

Ruilverkaveling „DE SCHEEKEN"
Ontwerp_Landschapsplan

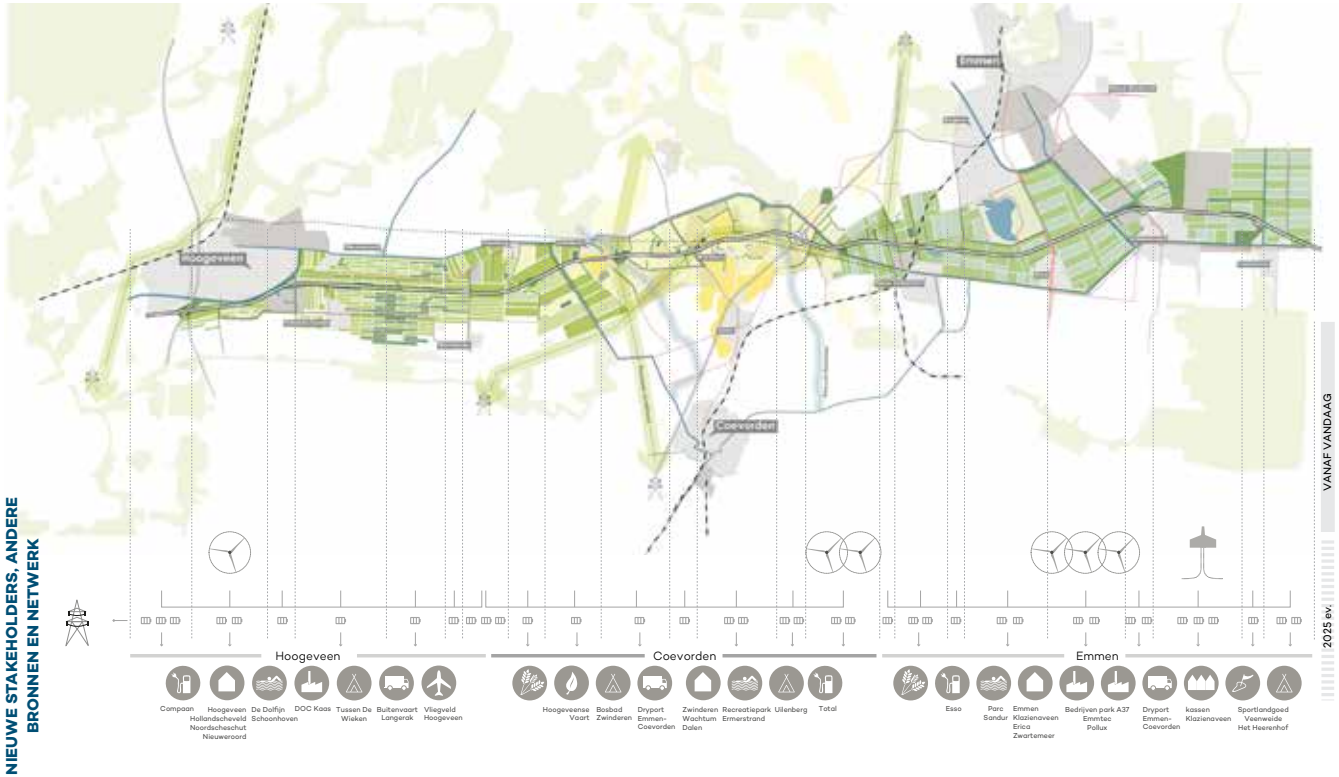
Sustainable energy becomes part of our culture

Solar bollenstrekken
Posad

SOLAR ROAD

Posad





IABR Rotterdam 2016

In which city I would like to live?

Write down 3 things that you think are important for a livable city?

Which are your new values?

Walk This Way: Making the right choices to reduce your water footprint

= 1 GALLON **DIRECT USE:** THE WATER THAT YOU ACTUALLY USE.

= 1 GALLON **VIRTUAL USE:** THE WATER THAT HELPED MAKE THE THINGS YOU USE.

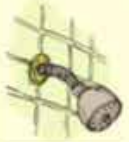
Rise & Shine

TOILET
6 gallons/flush

LOW-FLOW TOILET
1.3 gallons/flush

SHOWER (5 minutes)
5.8 gallons/minute

LOW-FLOW SHOWER (5 minutes)
2.3 gallons/minute



FAUCET (1 minute)
5 gallons/minute

LOW-FLOW FAUCET (1 minute)
1.5 gallons/minute

TOTAL: 49 GALLONS

TOTAL: 25.8 GALLONS

AMOUNT SAVED: 23.2 GALLONS

Breakfast

COFFEE
37 gallons

TEA
9 gallons

EGGS (two of them)
56 gallons/egg

CEREAL (with milk)
22 gallons

APPLE
18 gallons

ORANGE
13 gallons

TOTAL: 127 GALLONS

TOTAL: 44 GALLONS

AMOUNT SAVED: 83 GALLONS

Lunch

SODA (12 oz. bottle)
33 gallons

WATER (12 oz. glass)
.125 gallons

HAMBURGER
634 gallons

SALAD (1/3 lettuce, 1/3 tomato, 1/3 carrots)
32 gallons

TOTAL: 607 GALLONS

TOTAL: 31.125 GALLONS

AMOUNT SAVED: 835.875 GALLONS

Dinner

BEEF (one pound)
1,500 gallons

WINE (one glass)
32 gallons

CHICKEN (one pound)
287 gallons

BEER (one pint)
20 gallons

BREAD (two slices)
1.1 gallons/slice

BAKED POTATO
7 gallons

DISH WASHING (by hand)
20 gallons

DISH WASHING (w/ energy star dish washer)
4 gallons

TOTAL: 1573 GALLONS

TOTAL: 318 GALLONS

AMOUNT SAVED: 1,255 GALLONS

Cleaning Up

WASHING MACHINE
40 gallons

WASHING MACHINE (energy star)
22 gallons

TOILET
6 gallons/flush

LOW-FLOW TOILET
1.3 gallons/flush

BATH
33 gallons

NO BATH
0 gallons

FAUCET (1 minute)
5 gallons/minute

LOW-FLOW FAUCET (1 minute)
1.5 gallons/minute

TOTAL: 48 GALLONS

TOTAL: 2.8 GALLONS

AMOUNT SAVED: 43.2 GALLONS

Energy

NUCLEAR
255 gallons/day/household

SOLAR
24.5 gallons/day/household

AMOUNT SAVED: 230.5 GALLONS

TOTAL SAVED: 2,270.75 GALLONS