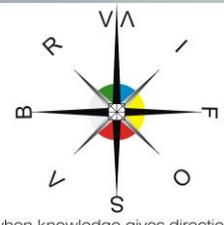


LET'S GET URBAN PLANNING OUT OF QUARANTINE

Dr.-Ing. Pietro Elisei

Urbasofia Director



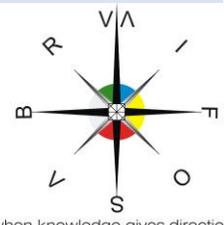
Let's assume a starting hypothesis:

There is a relationship between pandemics and the rapid, out of control urbanization taking place on our planet



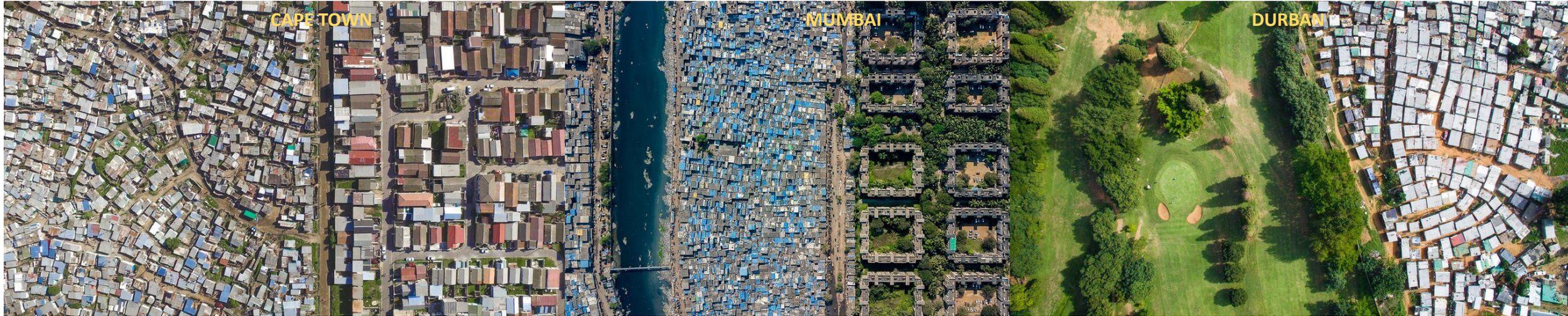
A key question:

Where and how can we intervene with our knowledge as urban planners?

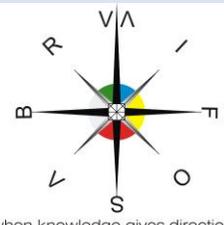


Reloading/recontextualizing classic questions:

Have we reached the limits of growth ... of urbanization/through the urbanization?



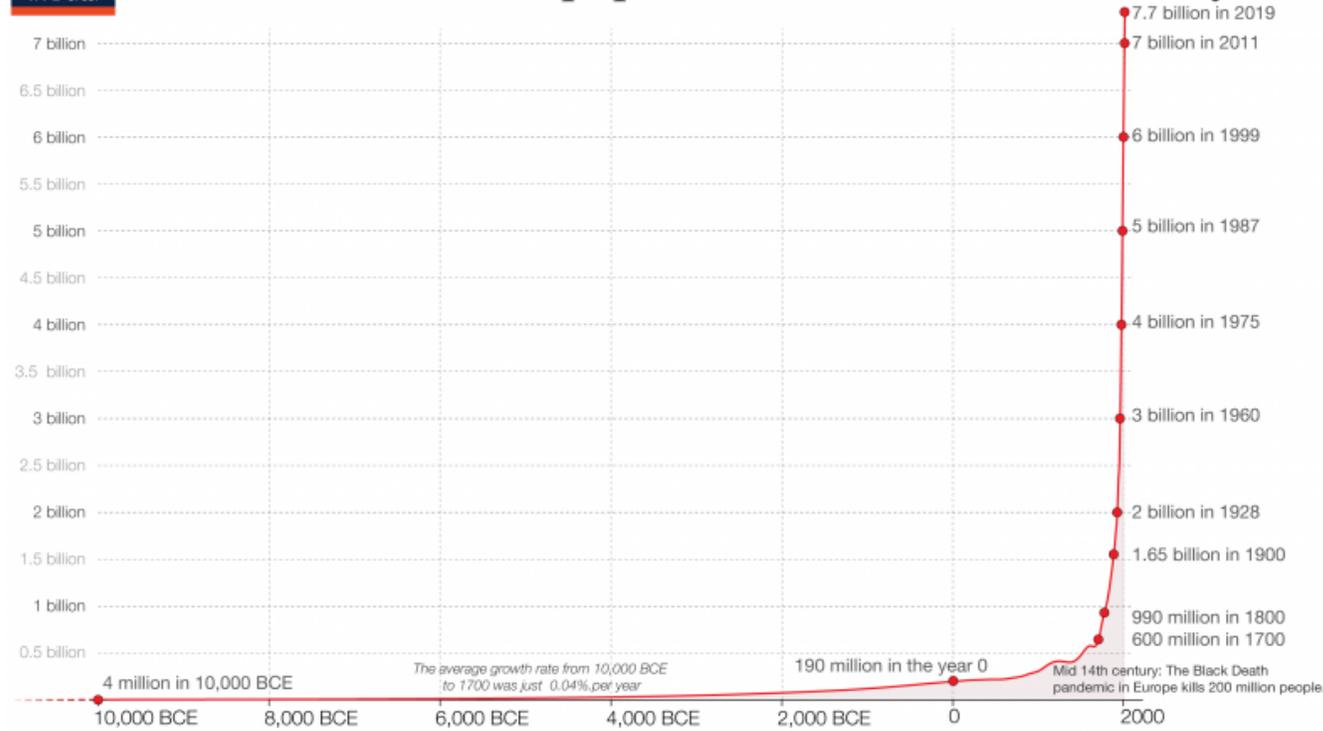
The annual growth rate of people migrating to urban areas is projected to be 1.63% between 2020 and 2025 and 1.44% between 2025 and 2030



What is getting out of control, what are the critical points of this urbanization? (I)

The global urban population is expected to grow approximately **1.84%** per year between 2015 and 2020, **1.63%** per year between 2020 and 2025, and **1.44%** per year between 2025 and 2030.

Our World in Data The size of the world population over the last 12,000 years



Based on estimates by the History Database of the Global Environment (HYDE) and the United Nations. On OurWorldinData.org you can download the annual data. This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing. Licensed under CC-BY-SA by the author Max Roser.

Year	World Population	WP Yearly Growth Rate	WP Net	WP Density	Urban Population	UP %	UP Yearly Growth Rate
2020	7,794,798,739	0.015	81,330,639	52	4,378,993,944	0.56	0.0163
2021	7896131123	0.013	101,332,384	53	4450371545	0.56	0.0163
2022	7982988565	0.011	86,857,442	54	4522912601	0.57	0.0163
2023	8054835462	0.009	71,846,897	55	4596636077	0.57	0.0163
2024	8119274146	0.008	64,438,684	55	4671561245	0.58	0.0163
2025	8176109065	0.007	56,834,919	56	4747707693	0.58	0.0163
2026	8217807221	0.005	41,698,156	57	4816074684	0.59	0.0144
2027	8247391327	0.004	29,584,106	58	4885426159	0.59	0.0144
2028	8264710849	0.002	17,319,522	59	4955776296	0.60	0.0144
2029	8269669675	0.001	4,958,827	60	5027139475	0.61	0.0144
2030	8269669675	0.000	0	61	5099530283	0.62	0.0144

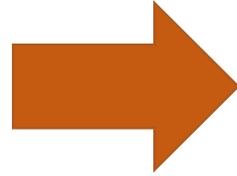
If growth trends are right, in 2030 the world population growth will stabilize, but already 62% will live in urban areas



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What is getting out of control, what are the critical points of this urbanization? (II)

The urbanization of around **720 million** people will have to be managed between 2020 and 2030

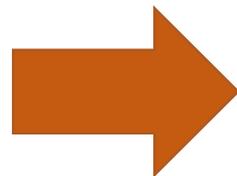


Considering that the metropolitan area of Shanghai (a megacity) has 34 million inhabitants,

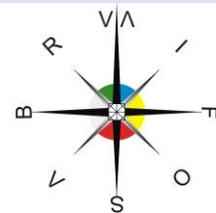
it would mean about **21 now megacities**

... as an impact

If we calculate what it takes to equip each new urban person with a minimum standard of one single room



It means creating an area equal to **9 times that of Greater London**



A FIRST STEP OUT OF THE QUARANTINE



A first point to be addressed through urban planning is *to keep under control the relationship between urban and rural population:*

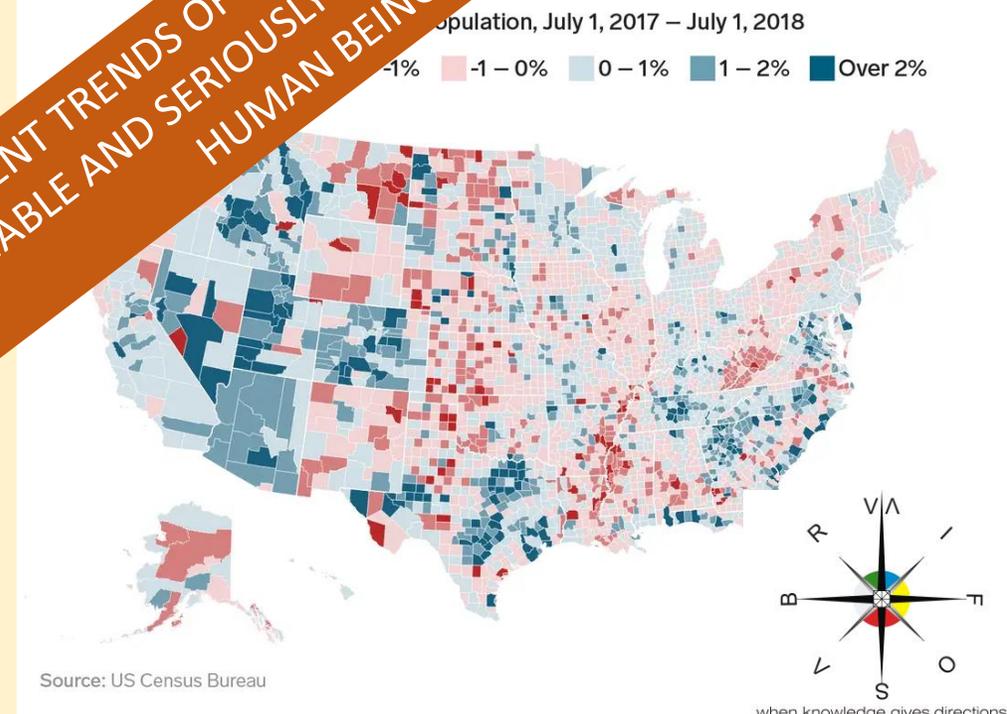
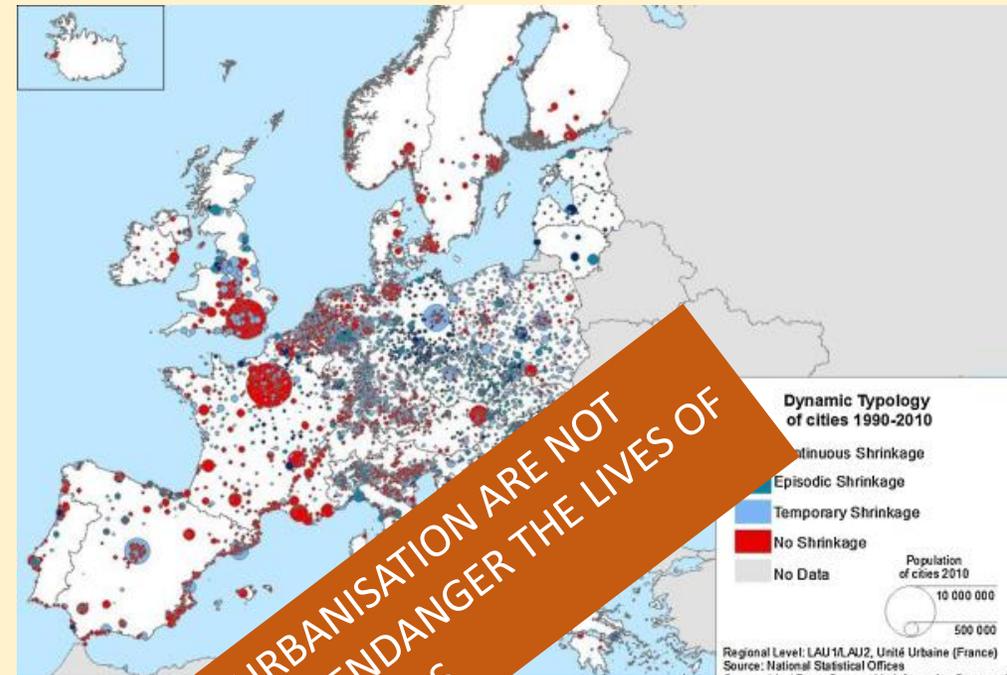
Not only thinking in terms of how to give urban design answers to urbanization (clearly an important aspect)

but especially finding solutions to avoid migration from rural areas, or to create local sustainable development conditions in a context of:

- **territorially balanced,**
- **polycentric and**
- **controlled growth**

This is not just an African or Asiatic problem; it is a global one!

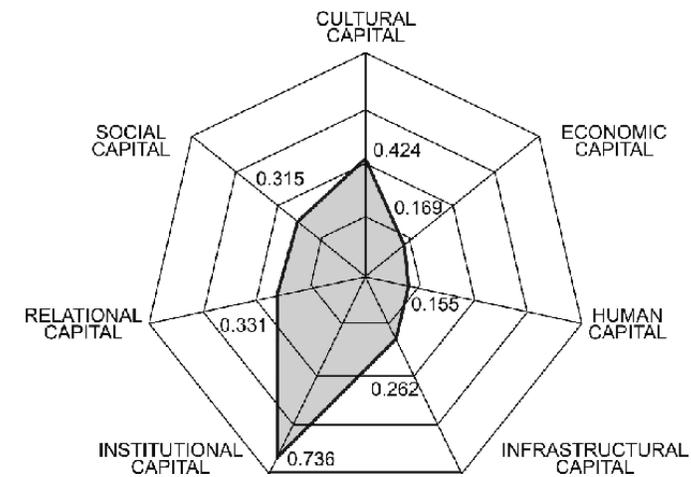
CURRENT TRENDS OF URBANISATION ARE NOT SUSTAINABLE AND SERIOUSLY ENDANGER THE LIVES OF HUMAN BEINGS



OUR DISCIPLINE MUST FOCUS ON SYSTEMS OF MEDIUM AND SMALL CITIES, and define their paths of economic recovery and creation of quality of life.

Our work as urban planners must be developed and focused on:

- **Deepening and operationalizing the concept of TERRITORIAL CAPITAL** (how to increase the competitiveness and attractiveness of local communities).
- **Improving community development approaches towards SHARED AND ENRICHED DECISION MAKING** (methodologies to effectively interact and connect the various stakeholders at local level, making them an active and listened to component of local political decisions).
- **Improving interinstitutional relations between the various territorial governance bodies** (simplified mechanisms of **MULTI-LEVEL GOVERNANCE**, i.e. introduce flexibility, and understand how to adapt one's powers according to the problems to be solved → **CALL IT LOCAL CLARIFICATION**).



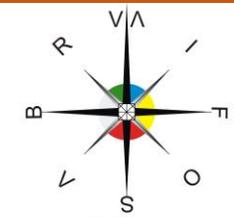
https://www.researchgate.net/figure/The-territorial-capital-structure-of-the-sub-regions-with-a-significant-decrease_fig9_282552832



<https://ro.pinterest.com/pin/303852306079645691/>

While the first and second industrial revolution technology in the 19th and 20th centuries were to be centralised and top-down in terms of intellectual property, the third industrial revolution is designed to be distributed rather than centralised.

Jeremy Rifkin, 2019

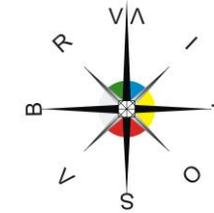


URBANIZATION? READ ALSO IN-IM-EM→MIGRATIONS

URBANIZATION is a meta-concept. For many persons, it practically means a desperate escape towards a better life, for several reasons that have at their root:

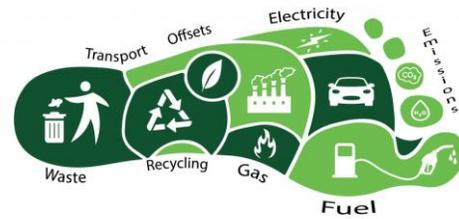
- **POVERTY**, in terms of socio-economic disparities between different territories, which the current and dominant forms of global economy do accentuate more than solving
- **POVERTY** induced or exacerbated by the climate change
- **THE POLITICAL AND CULTURAL POVERTY** that characterized the last 20 years in Europe and in the World.

*The globalization will continue to exist even after the pandemic, but must be managed by bringing out **the diversity of decentralized economies and redefining the relationship between technologies and resources**, especially in the sectors mobility and energy production and use.*



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A SECOND STEP OUT OF THE QUARANTINE



A second point to be addressed for urban planning is systematically

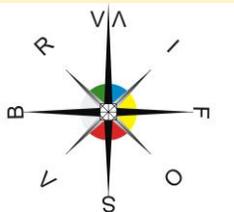
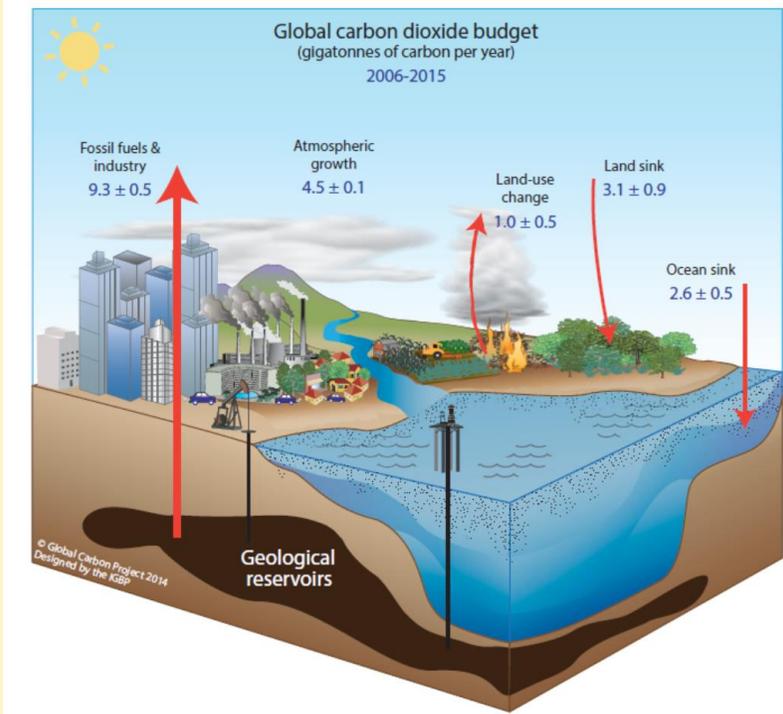
considering climate change related issues in every normative or strategic plan and in the design of every kind of urban policies:

CLIMATE MITIGATION is any action taken to permanently eliminate or reduce the long-term risk and hazards of climate change to human life, property.

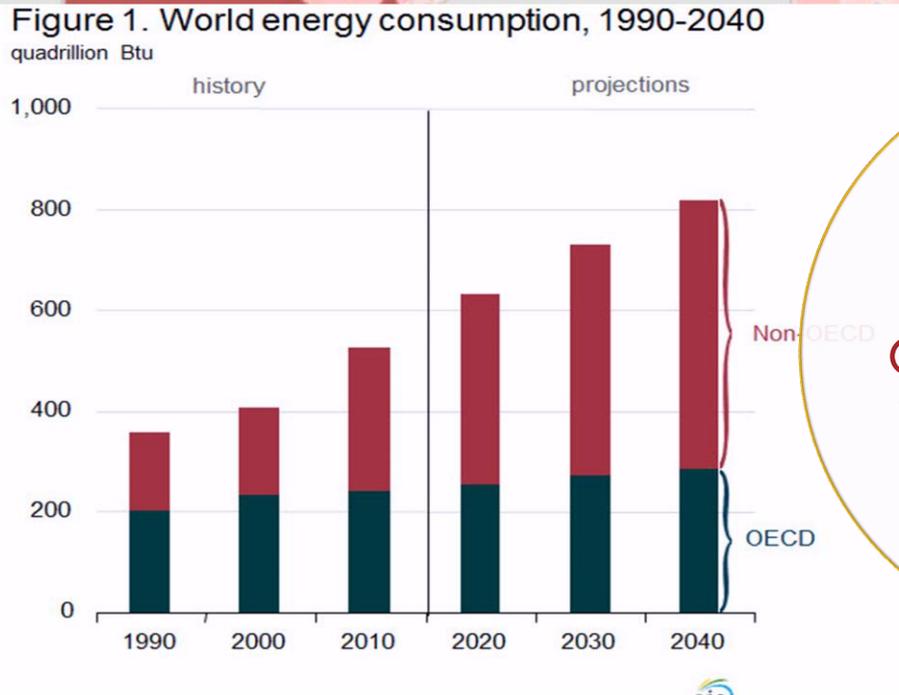
CLIMATE ADAPTATION refers to the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damage, to take advantage of opportunities, or to cope with the consequences.

CLIMATE CHANGE AND ENERGY USE RELATED ISSUES ARE FACED AT CITIES SCALE

Urban activities have strong impacts on natural ecosystems going beyond city's borders, they have enormous ecological footprints. They are even the places where more relevant is the impact of natural risks/hazards.



Energy, the global issue



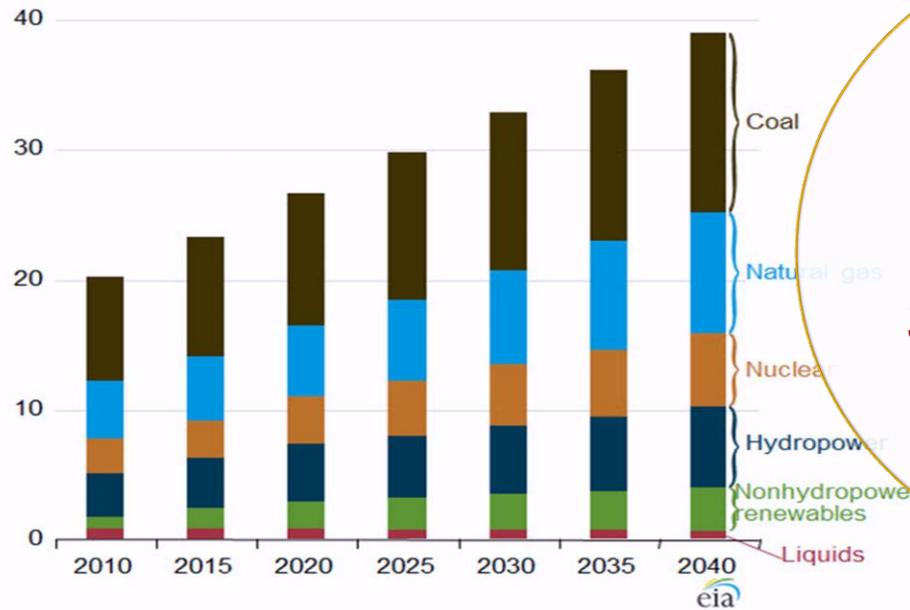
By 2040
energy
demand will
increase by
60%



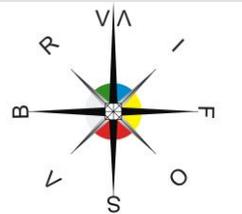
Energy, the global issue

Figure 6. World net electricity generation by energy source, 2010-2040

trillion kilowatthours



Worldwide coal will account for **30%** of energy demand



CITIES IMPACT ON CLIMATE CHANGE

- Cities are responsible for **between 30% to 70%** of global greenhouse gas emissions (*Satterthwaite2008*)
- and **consume roughly 60% of the world's energy** (*Van der Hoeven 2012*).
- the projected impacts of climate change show that **urban populations and infrastructure around the world are at significant risk**
- (*Carmin, Nadkarni, and Rhie 2012, Hunt and Watkiss 2011, IPCC 2014*).
- Finally, CITIES have emerged as IMPORTANT PLAYERS in global efforts:
 - to mitigate greenhouse gas emissions and
 - to enact adaptive policies to protect both people and assets.

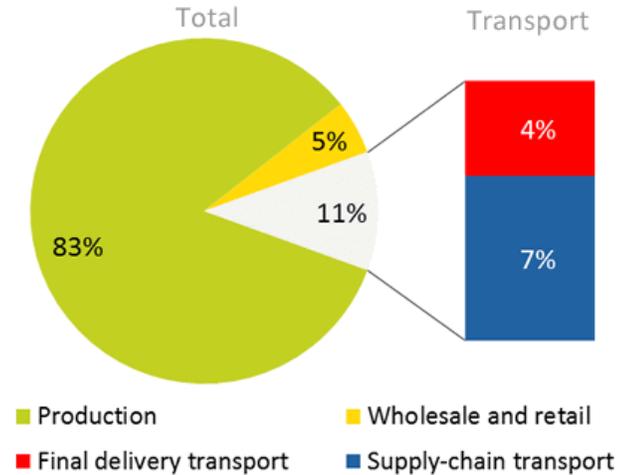


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SOURCE: MIT – ICLEI, Progress and Challenges in the Results of a Global Survey Urban Governance of Climate Change

<https://ddpoultry.ca/green-wholesale-chicken/>

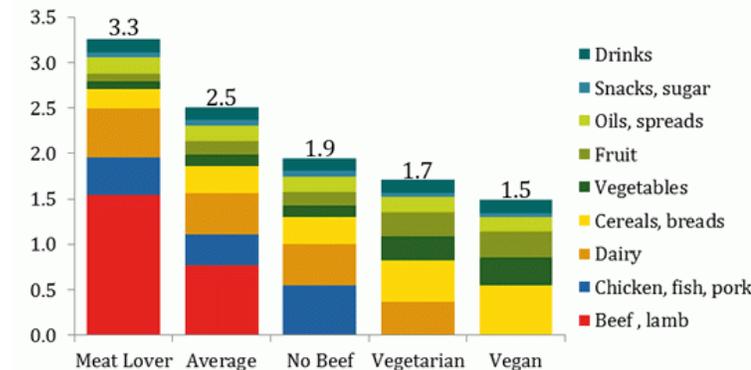
Food Emissions Breakdown (%)



Source: Weber and Matthews 2008



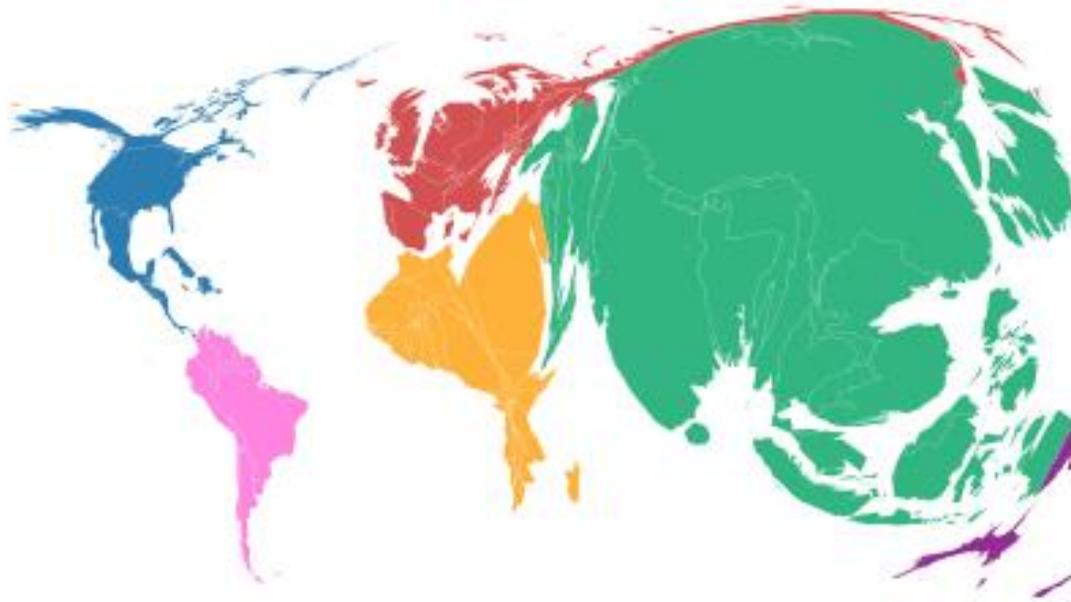
Foodprints by Diet Type: t CO₂e/person



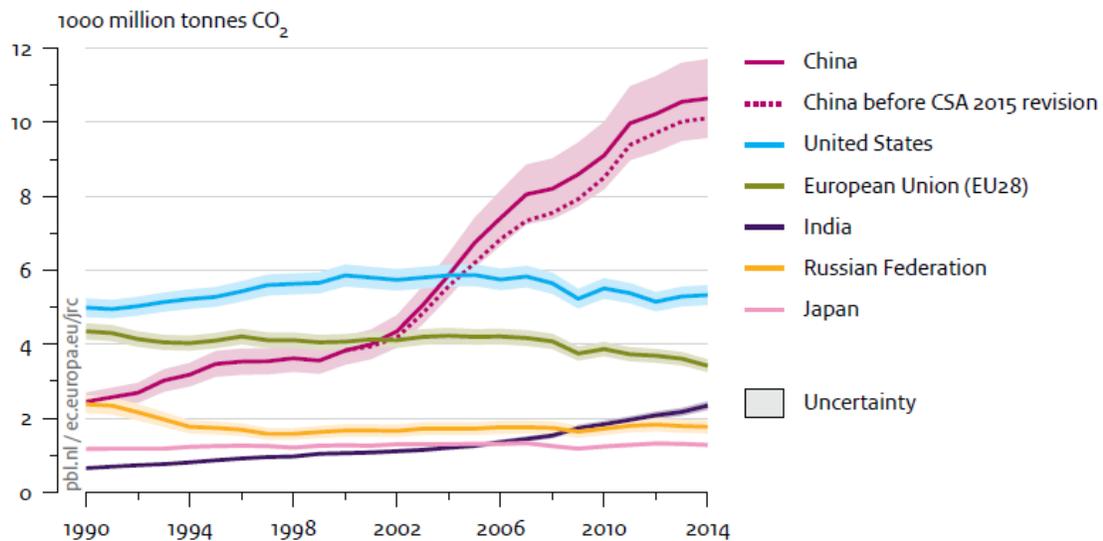
Note: All estimates based on average food production emissions for the US. Footprints include emissions from supply chain losses, consumer waste and consumption. Each of the four example diets is based on 2,600 kcal of food consumed per day, which in the US equates to around 3,900 kcal of supplied food.

Sources: ERS/USDA, various LCA and EIO-LCA data





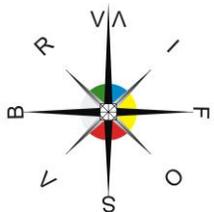
CO₂ emissions from fossil-fuel use and cement production in the top 5 emitting countries and the EU



Source: EDGAR 4.3 (JRC/PBL, 2015) (1970-2012; notably IEA 2014 and NBS 2015); EDGAR 4.3FT2014 (2013-2014); BP 2015; GGFR 2015; USGS 2015; WSA 2015

SOURCE: <https://www.fastcodesign.com>

WHO IS RESPONSIBLE FOR CLIMATE CHANGE?



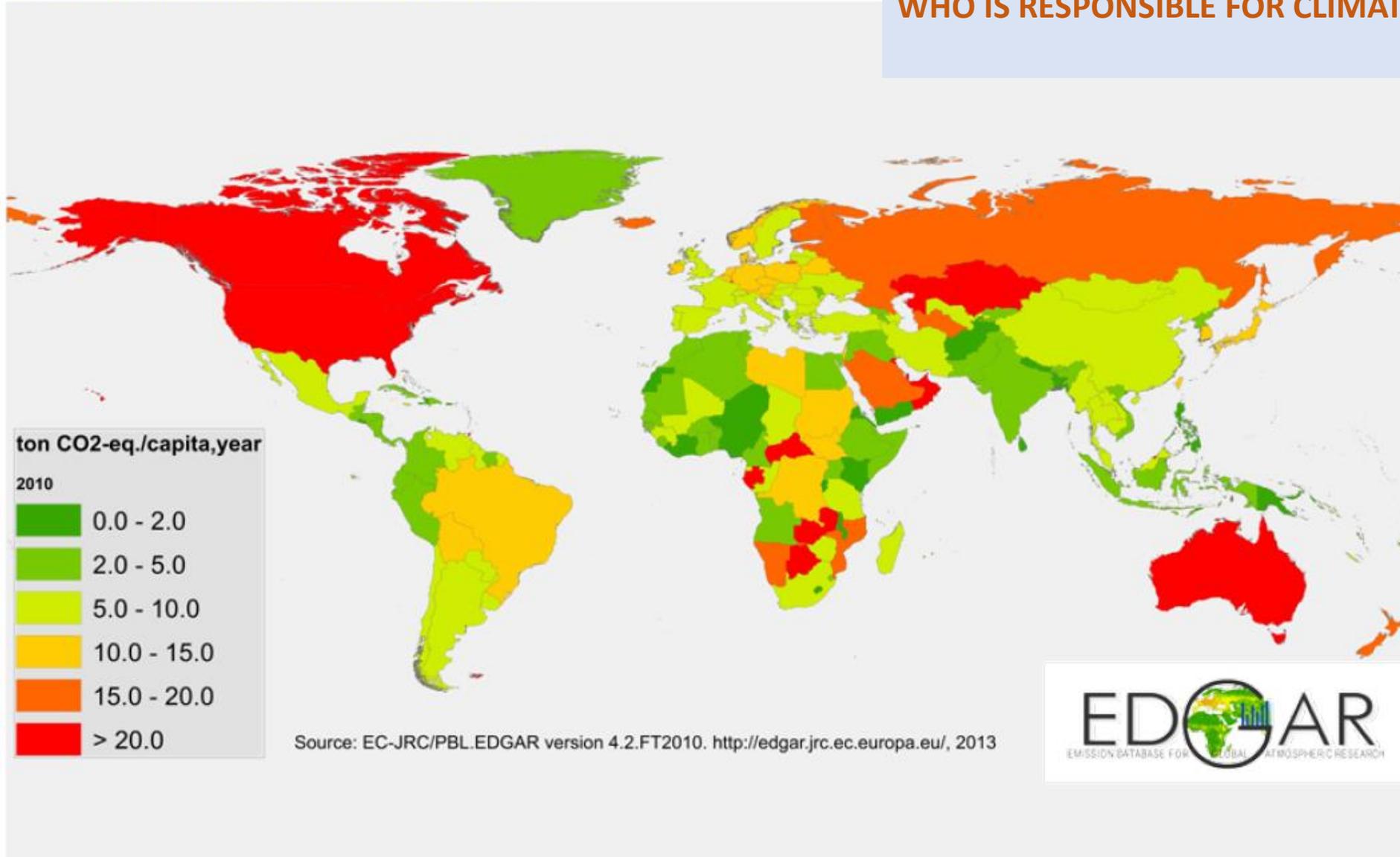
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CSA=Chinese Statistical Abstract

SOURCE: http://edgar.jrc.ec.europa.eu/news_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf
Trends in global CO₂ emissions:2015 Report

Greenhouse gas emissions per capita, 2010

WHO IS RESPONSIBLE FOR CLIMATE CHANGE?



Source: <http://edgar.jrc.ec.europa.eu/overview.php?v=GHGt>



GREENING THE CITY

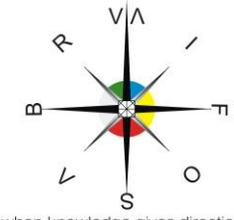
- **Connected, Pedestrian and Landscaped Public Spaces** (increasing pedestrian mobility, capturing rain water/feeding underground water, capturing pollutants)
- Realizing **vertical gardens** (capturing pollutants, refurbishing housing)
- **Increase biodiversity of green areas** (using local plants, diverse plants typology and age)
- **Greening roofs and terraces** (reducing surface temperatures increasing rate of captured water)
- Promoting experiments of **urban agriculture with local communities**

MANAGING THE WATER CYCLE

- Designing solutions for **reducing volume and speed of runoff water** (lowering destructive potential of running water)
- **Minimizing potable water consumption**

DESIGNING CLEVER PUBLIC SPACES

- Promoting **slow mobility/soft traffic solutions** (networked cycle paths, car speed reducing through design/hybrid zones)
- **Using, as much as possible, km 0 materials for realizing streets, piazzas...** (valorizing local economies and resources)
- Keeping under **control light pollution** (optimizing use of energy in lighting systems)



IMPROVING URBAN AND ARCHITECTURAL DESIGN IS IMPORTANT BUT IT IS NOT RESOLVING THE KEY PROBLEMS, IT LIMITS IMPACT AND INCREASES THE RESILIENCE OF URBAN ENVIRONMENTS.

IMPROVING URBAN AND ARCHITECTURAL DESIGN IS IMPORTANT BUT IT IS NOT RESOLVING THE KEY PROBLEMS, IT LIMITS IMPACT AND INCREASES THE RESILIENCE OF URBAN ENVIRONMENTS.

SOURCE: <https://www.slideshare.net/akbariasif12/zero-energy-buildings-economical-and-environmental-aspects-27618434>

Components of Zero Energy Buildings

DESIGNING MORE ZERO (EVEN POSITIVE) ENERGY BUILDINGS AND LESS ENERGIIVOROUS GLASS-TOWERS

DESIGNING OR RGENERATING HAVING IN MIND TO PUT ON PLACE LOGICS/ACTIONS TO GET A PED (Positive Energy District)

DESIGNING MORE SOLUTIONS BASED ON PASSIVE ARCHITECTURE PRINCIPLES

USING KM 0 MATERIALS... IF POSSIBLE (IF STILL THERE)

USING RECYCLED AND INNOVATIVE MATERIALS FOR NEW HOUSING

COLLOCATE BUILDINGS WITH CORRECT ORIENTATION...AND IN THE RIGHT PLACE (E.G. NEAR RIVERS CAN BE DANGEROUS AND DECREASING BIODIVERSITY)

MAKING USE OF SOLAR AND WIND RELATED TECHNOLOGIES (ENERGY PRODUCTION, COOLING OR WARMING SYSTEMS)

PROMOTING ECOLOGICAL REFURBISHMENT OF OLD BUILDINGS (ENERGY RETROFIT OF HISTORICAL BUILDINGS)

<http://www.ecologicalbuildingsystems.com/Ireland/Blog/Post-Detail/A-synopsis-of-our-Retrofit-Insulation-Masterclass>

CooneyArchitects

eco logical BUILDING SYSTEMS (A) LTD

A Case Study of a Conservation Led, Energy Retrofit, of a Historic Building

The story of a Conservation Best Practice and Energy Retrofit Building achieving B2 Energy Rating

Frank Cooney
B.Arch, SRSAI
Former Member of the RIAI Sustainability Task Force
October 2016

Seven Petals

Combustion and Ventilation

the site; window and door ent.



IBO - Austrian Institute for Building and Ecology (Ed.)

Details for Passive Houses: Renovation

A Catalogue of Ecologically Rated Constructions

SOUR

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A THIRD AND FINAL STEP OUT OF THE QUARANTINE



THE GOVERNANCE

Many lives could have been saved in this pandemic if multi-level governance mechanisms had been more harmonized

The point is that we find ourselves living in an:

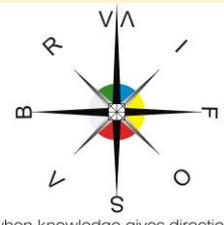
- increasingly **connected world**,
- with **strong economic and productive interdependencies**,
- with **rapid mobility**,
- based on a **decision-making system** that instead still responds to modernistic logic.

We live in a post modern (or late modern) system, but we rule it through pre-modernistic tools (at the end of the day, we have centralistic actions led by states to fight the pandemic...and a competition among states to get the necessary assets to protect the own people.)

Who loses the game?

Obviously

- **the poorest and less organized states/territories, cities**
- but they are precisely **those where urbanization phenomena are most concentrated.**



IN URBAN/TERRITORIAL DEVELOPMENT, EVERY PROGRESS TOWARDS A SUSTAINABLE DEVELOPMENT IS A MATTER OF NEGOTIATION: GOOD GOVERNANCE MECHANISMS, BASED ON TRANSPARENT AND SIMPLE RULES, FACILITATE THE PROGRESS OF COMPLEX PLANNING PROCESSES

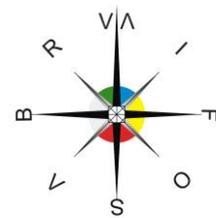
NEGOTIATION IS NOT HAPPENING WITHOUT:

- GOOD GOVERNANCE SCHEMES
- INNOVATION IN PLANNING TOOLS
- ENLARGING THE DECISION-MAKING ARENA



Humanity, with Coronavirus, is simply becoming aware that its push for globalization must simply be managed, we must take the good and leave the bad of this push.

A WELL DESIGNED URBAN GOVERNANCE SYSTEM FACILITATES THE DECISION-MAKING PROCESS



And we, urban planners, what are we doing?

The **same problems experienced by politics are present in our work as urban planners**, the good planning of cities gets out of hand, and the disastrous consequences are clearly visible:

- **The regulatory tools** we use are obsolete.
Land use management is often linked to old logics of property income.
- **Strategic data**, despite **the rhetoric of smart cities**, are often not (not enough) shared.
The technological solutions introduced in innovative urban contexts have focused more on profits linked to the management of large infrastructures than defining innovative services for a better quality of life. SMART means even having resilient public systems (health, schools, elders assistance...).
- **Little investment is made for the design of urban policies and innovative tools** (especially by national states).
Good promotion in EU of Urban Innovative Actions. The issue is that plans and programs experimented with success at urban scale very often do not have a proper follow up in mainstreaming funds.

Evidence based planning is little bit more than an exercise for academic people.

- **We continue to train urban planners as managers-designers for urban objects or spaces rather than managers designers of complex processes** of urban transformation.
We have too many young planners who think more as naïve painters than as managers of complex processes

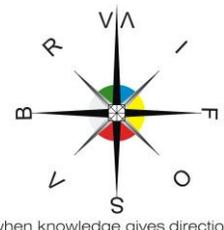


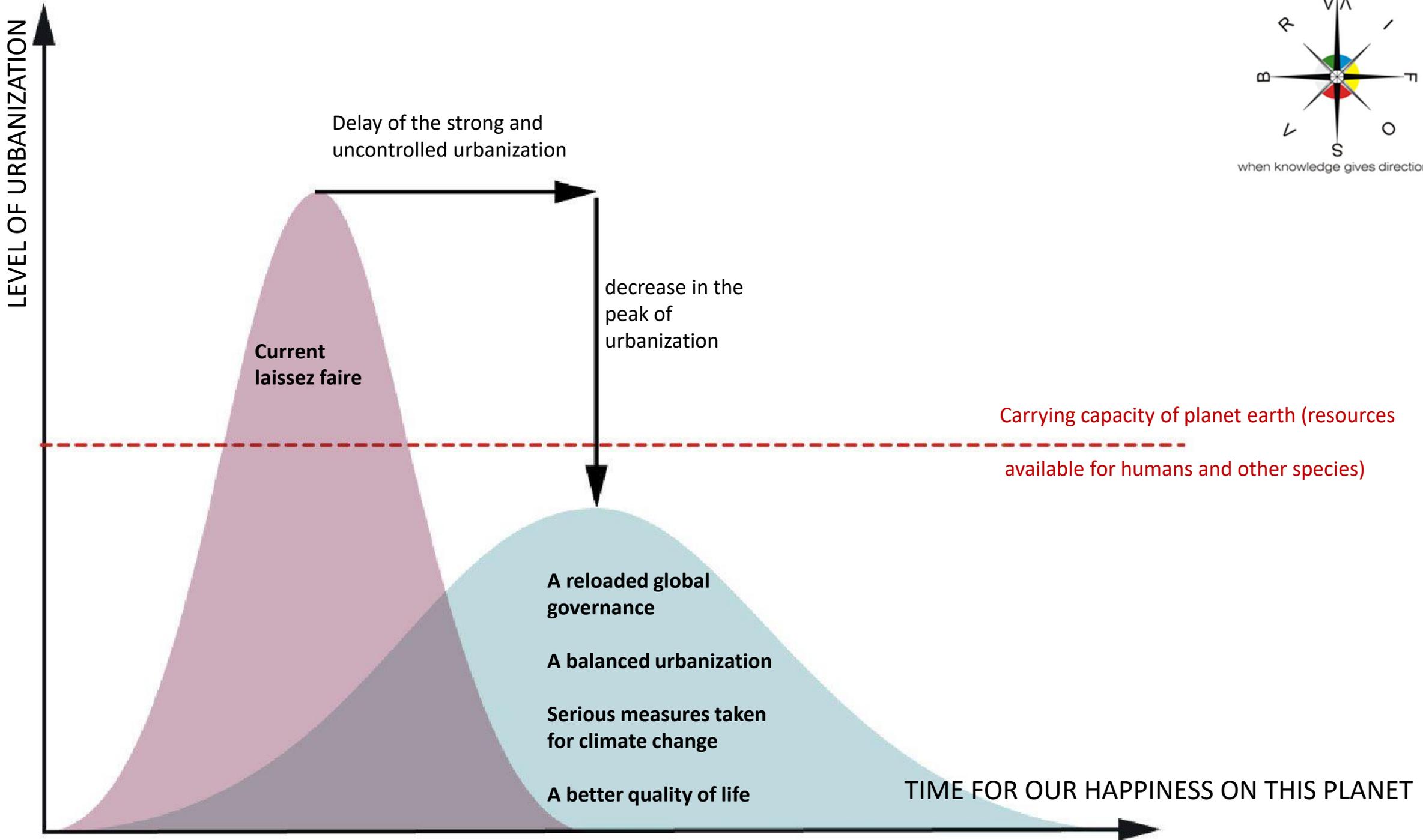
LET'S GET URBAN PLANNING OUT OF QUARANTINE

What are our new utopias?

How to plan the transition to a new balance between city and territory?

1. Thinking about smart management of continuous urbanization (good urban design, sustainable use of resources, participatory planning ...), but **let's try to rebalance the relationship between urban and rural, we must work more on models to relaunch the economy of small and medium-sized cities.**
2. Designing cities that have a low ecological footprint, attention to the use of resources and **the promotion of different economic, social and cultural models in sustainable city planning** (in the last 20 years we have had several pandemics, the one we are experiencing is the last of a long series ... here too **the impact of urban ecosystems must be rebalanced on natural ones, but also distinguished, less promiscuity between these ecosystems**).
3. **Improving and strengthening our box of tools in terms of horizontal and vertical governance.**





Grazie



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