

Creating Green and Sustainable Developments:

At Present and in a Post-COVID-19 Economy

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Presented at the Pilipinas Conference 2020
Stratbase ADR Institute
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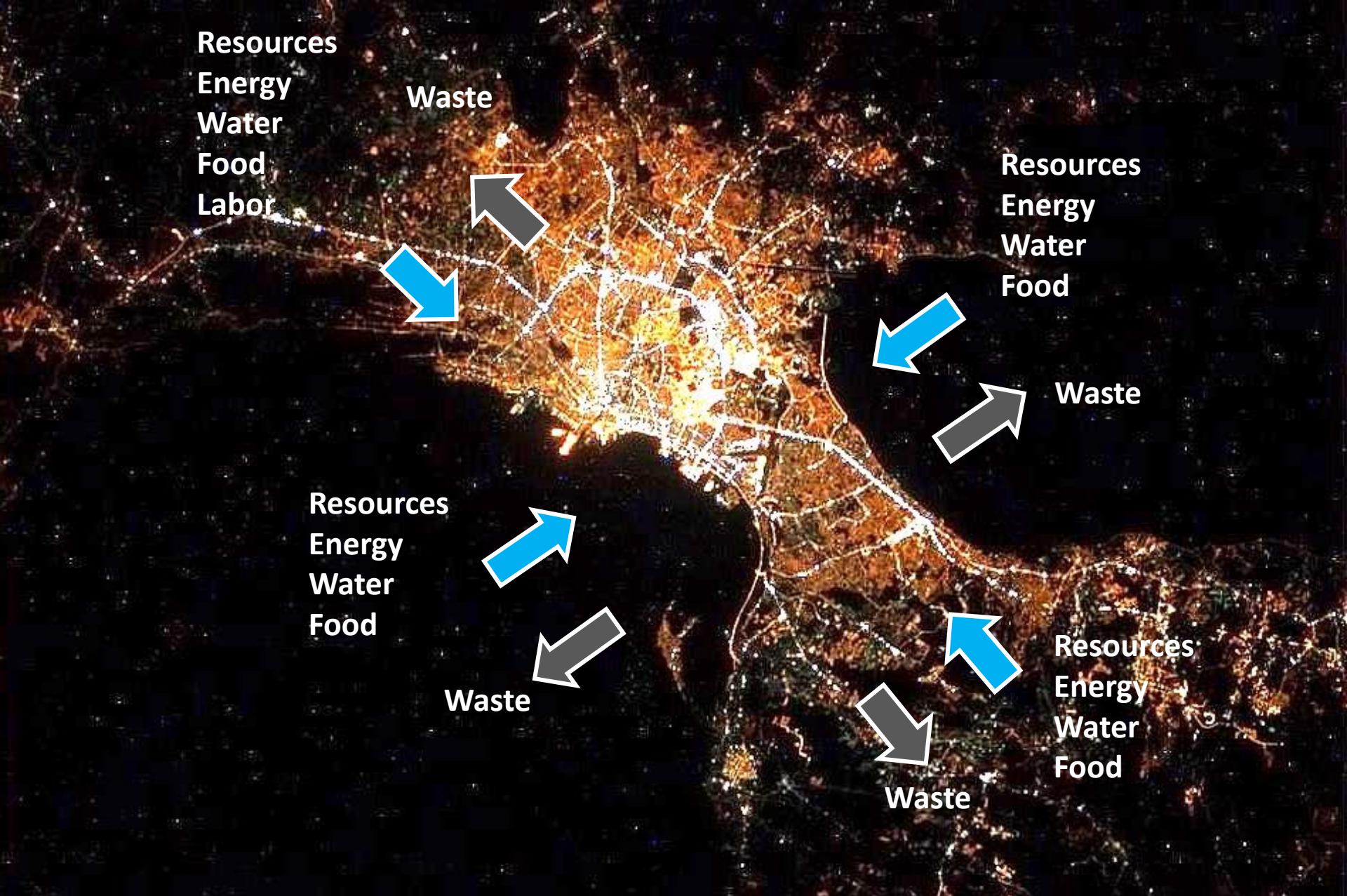
PUSH TO
RESET THE
WORLD

#spaceutopia





Cities are the Concentration of Surplus And The Manifestation of Our Economic System



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Cities

Occupy 2% of the world's land
Contain 60% of the world's population
Generate 80% of the world's GDP

350 Million hectares
5.2 Billion people
US\$ 70 Trillion (2019)

Consume 75% of global energy
Emit 50 to 60% of greenhouse gases
Generate over 2 Billion Tons of solid waste every year

116,628 TWh
4.8 Billion tons of CO2

Sources: McKinsey Global Institute, UN Habitat



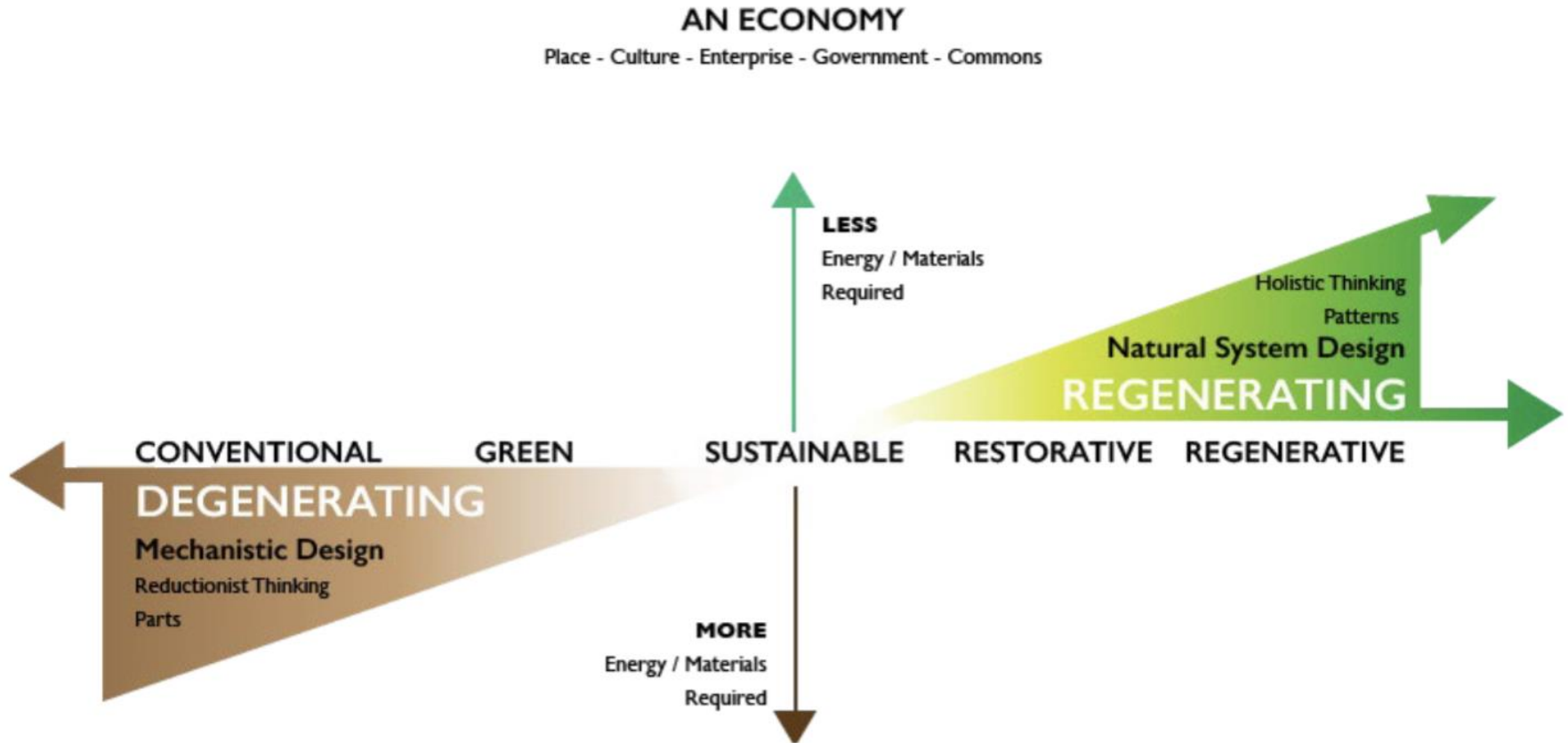
By 2040:

40% Shortfall in Water

50% Increase in Food Demand

40% Increase in Electricity Consumption

A Better Way: From Sustainable to Regenerative Development



Adapted from "Trajectory of Ecological Design" (courtesy of Bill Reed).

Water and Sustainability



Angat Dam: Lowest in 10 years (May 2019)



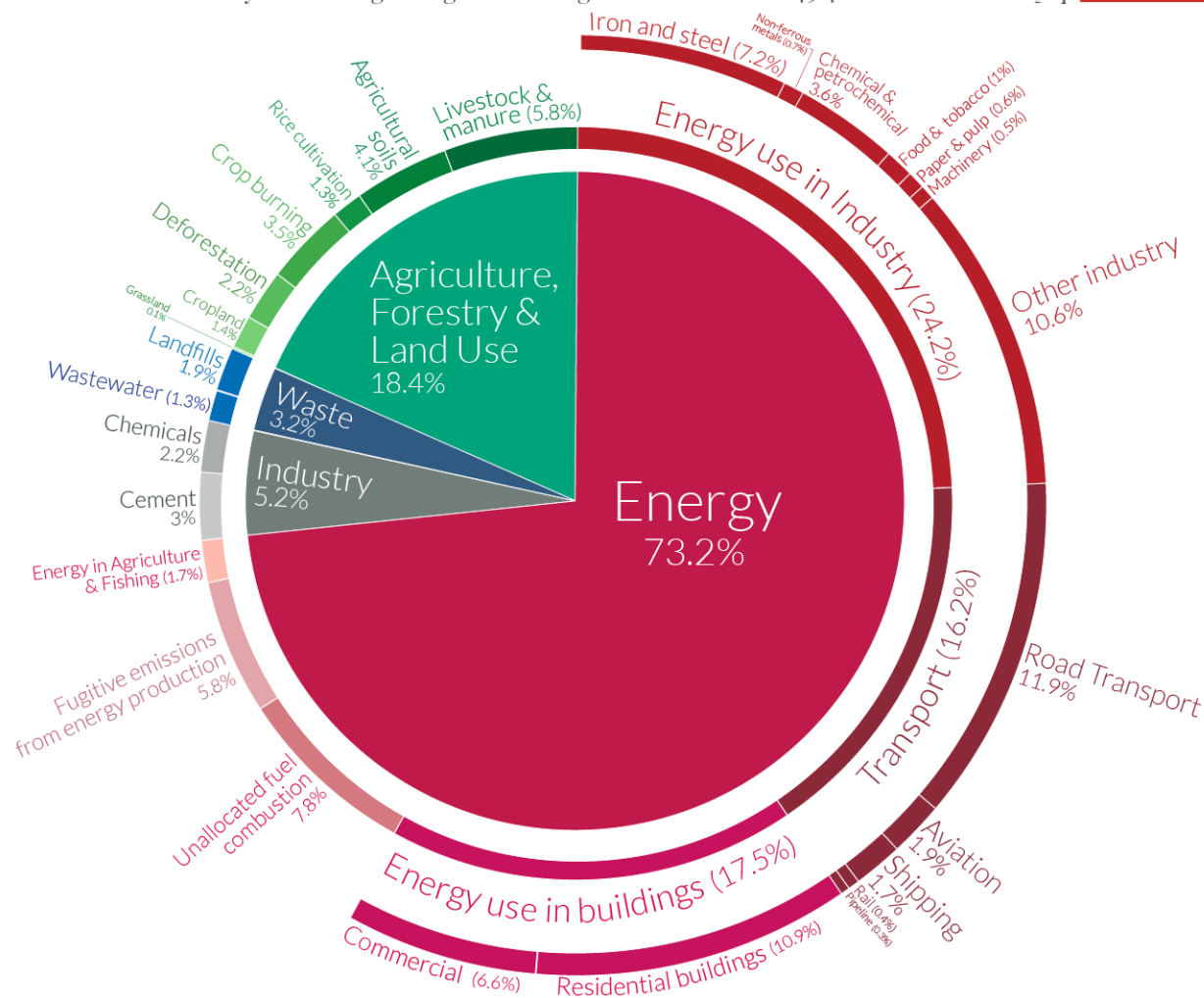
Typhoon Ulysses: Worst flooding since Ondoy , 11 years ago (November 2020)

Energy Consumption and Land Use

Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.

Our World
in Data

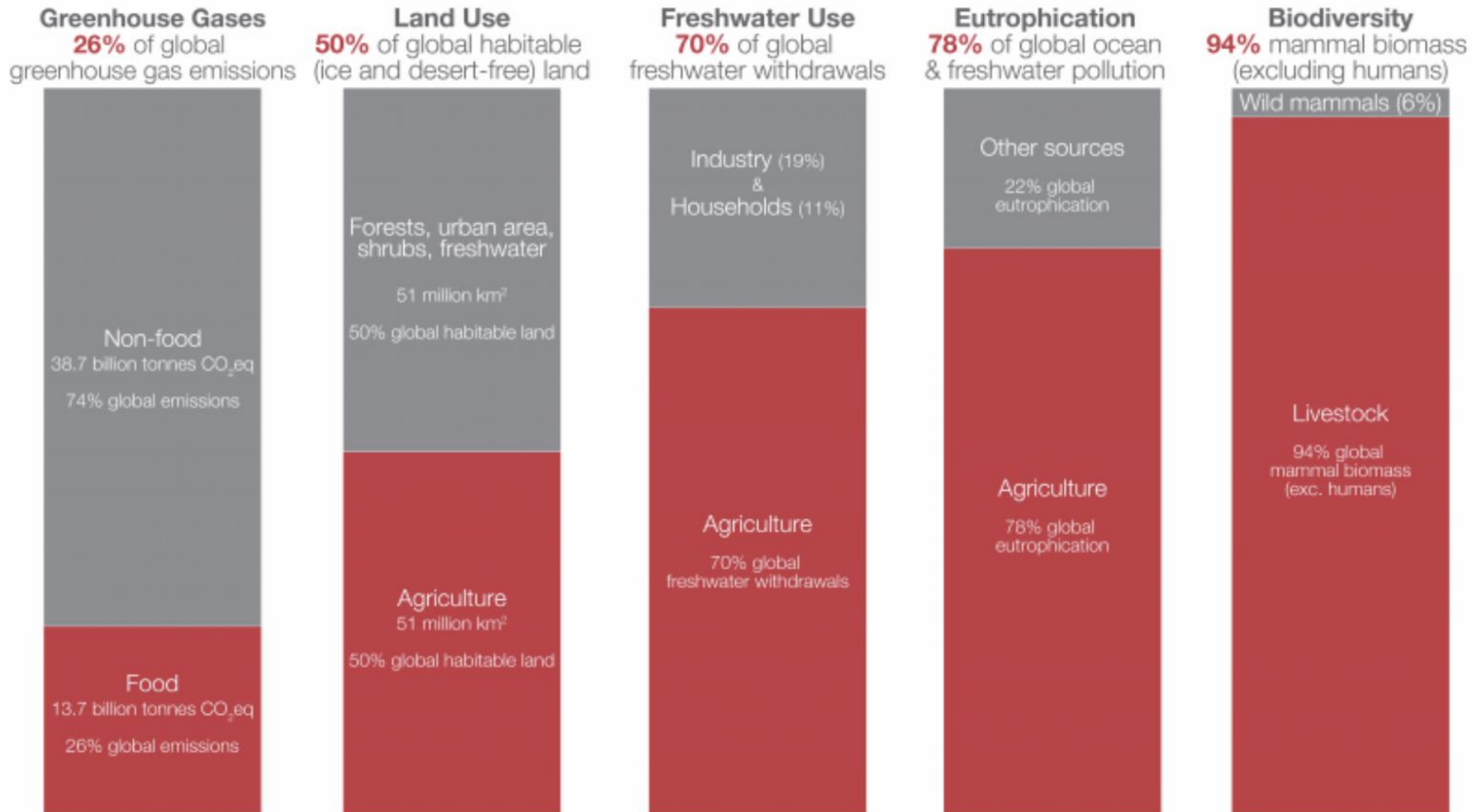


OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020).

Licensed under CC-BY by the author Hannah Ritchie (2020).

What are the environmental impacts of food and agriculture?



Data sources: Poore & Nemecek (2018); UN FAO; UN AQUASTAT; Bar-On et al. (2018).
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Our Pattern of Consumption is Reflected in our Land Use

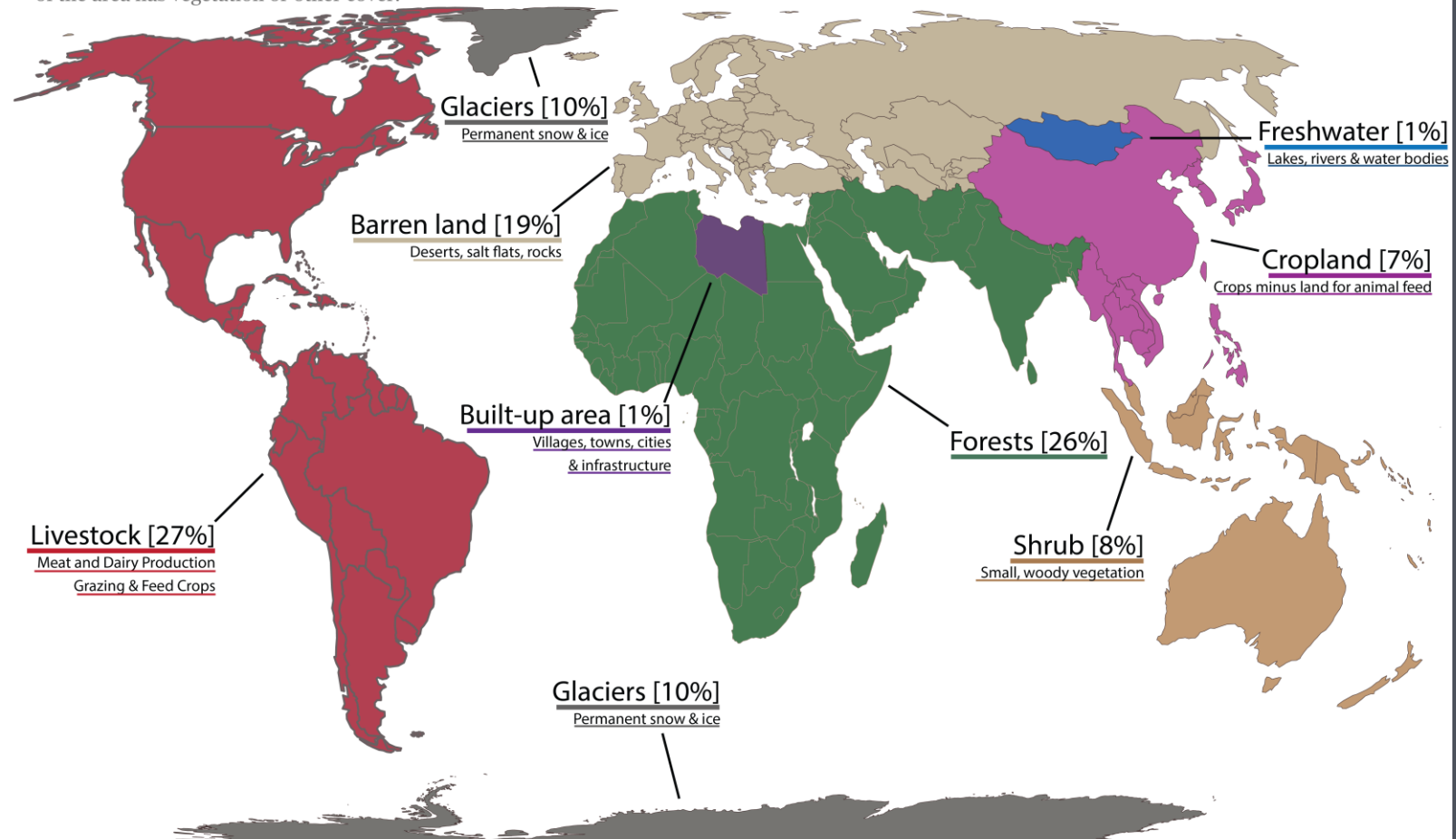
How the world's land is used: Total area sizes by type of use & land cover

OurWorld
in Data

Global surface area if land was aggregated by usage or terrain cover. Land categories are not shown by their distribution around the world but are representative of the total area that they cover.

Land uses as a percentage of global land area are shown in square brackets.

- Cropland is shown as land area used for crop production minus area used for production of animal feed.
- Livestock area is inclusive of both grazing land and cropland for animal feed. 'Barren land' refers to land cover in which less than one-third of the area has vegetation or other cover.



Based on data by the UN Food and Agricultural Organization (FAO) and World Bank Statistics. This map is based on the equal-area Eckert IV map projection.

The data visualization is available at [OurWorldinData.org](https://ourworldindata.org). There you find research and more visualizations on this topic.

Licensed under CC-BY-SA by the authors Hannah Ritchie and Max Roser.



The goal of every city should be to increase its Livability

Agrihoods: Master-planned Communities with food as their focus -- Urban Land Institute



Urban Agriculture in Sao Paulo

Job Generation, Health and Community Solidarity Through Urban Farming

- Cities without Hunger movement initiated the use of vacant urban land for community organic gardens
- Livelihood and food for marginalized communities
- Created green islands for the city, promoting biodiversity
- In 2004, Sao Paulo passed a Law on Urban Agriculture to officially make urban farming possible



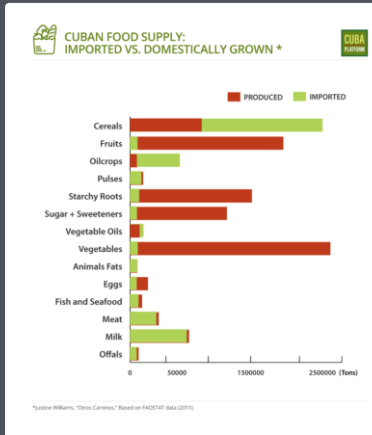
Organoponicos in Havana

Job Generation, Food Security and Self-Sufficiency

- Initiated by necessity with the collapse of the Soviet Union
- Over 36,000 hectares in Havana are being used for urban agriculture
- Attained self-reliance in fruits and vegetables
- Average wage of the garden worker in Havana is 3 times the average Cuban wage



Alamar, Havana, where 90% of vegetables are grown locally in nearly every available space.



Urban Farming During Pandemic

Communities Empowering Themselves During the Crisis



Communal gardens in Payatas, Quezon City



Free seeds and aquaponics training in Negros



Urban Storm Water Management through Sponge Cities

- Acquirer recharge
- Flood mitigation
- Water pollution mitigation
- Soil preservation

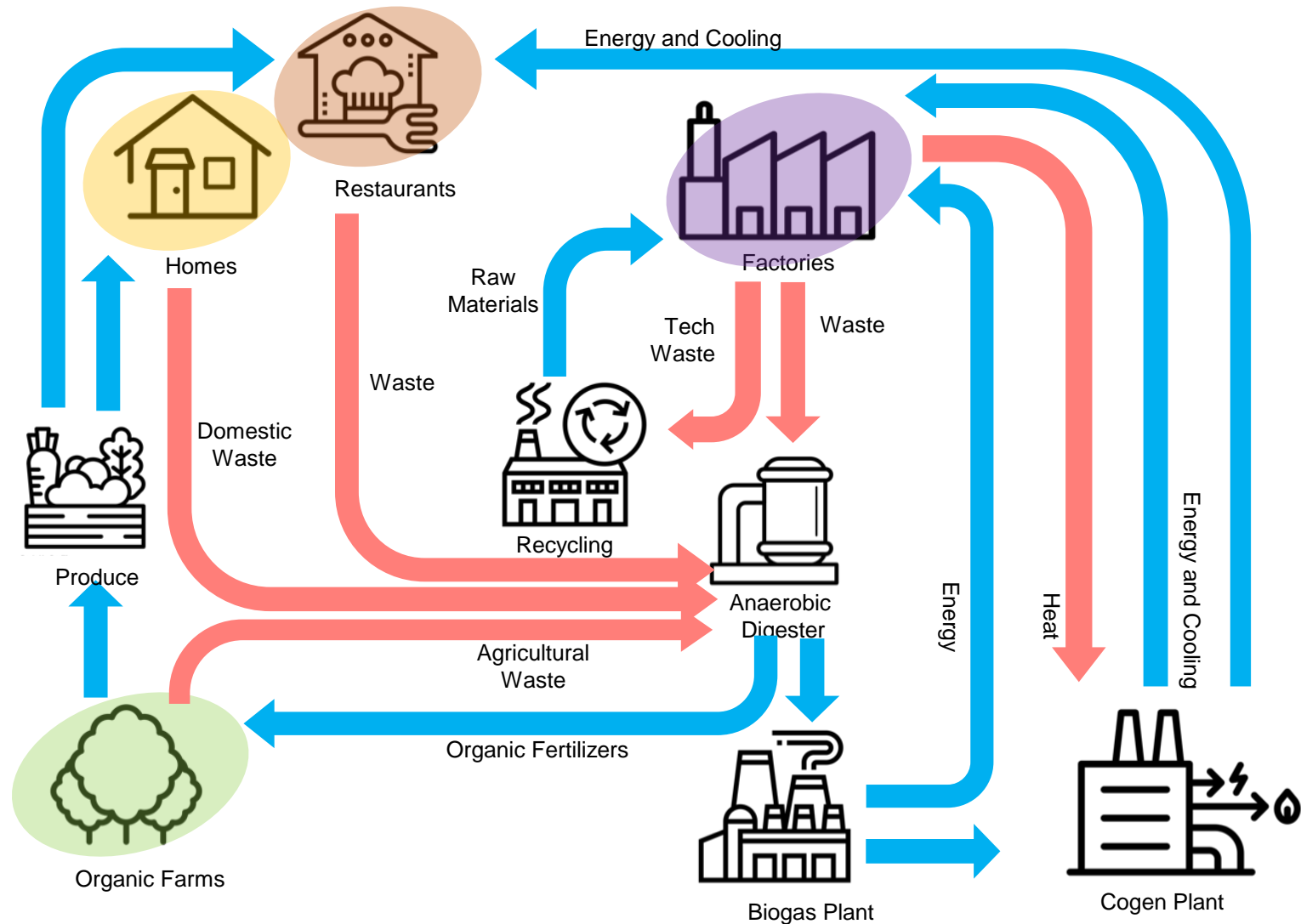


Regenerative Cities

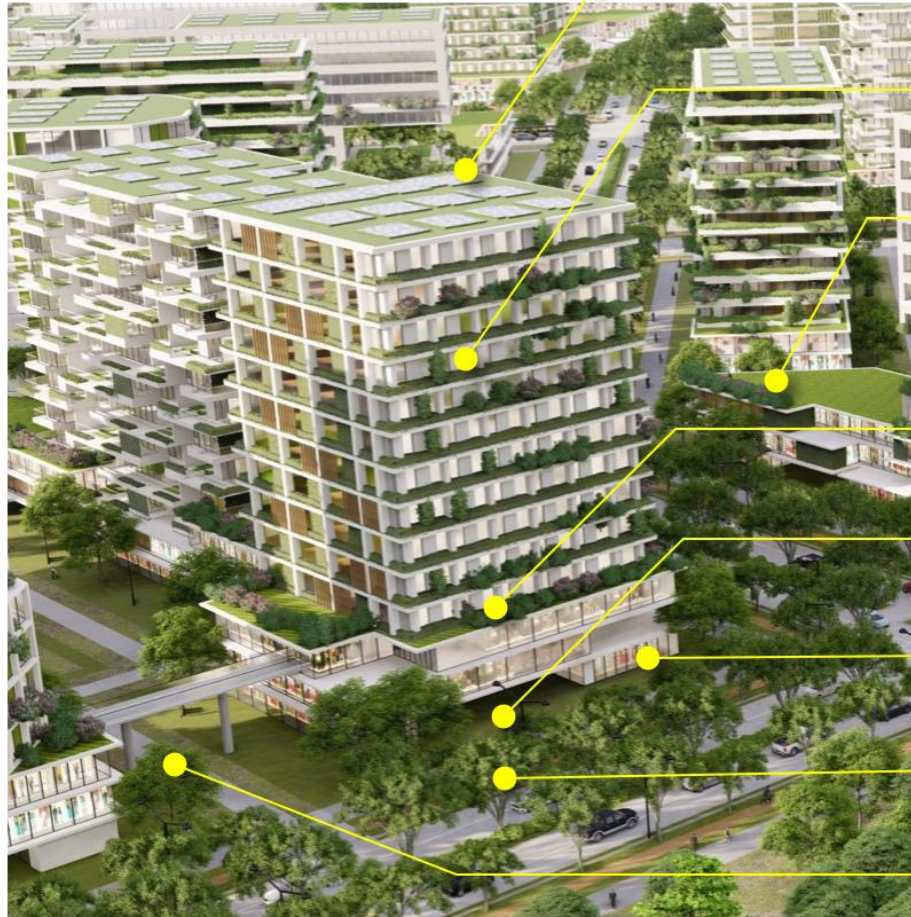
Smart Forest City Cancun by Stefano Boeri

A 557-hectare sustainable city that intends to generate more energy than it consumes, cleans the water and sequesters CO2 with its 7,500,000 plants





Cities like Forests: A concept diagram for a mixed use township using circular flow of resources and waste. Concept by JLPD



Solar Panels and wind turbines on Rooftops for Renewable Energy (fed to micro grid)

Vertical Greenery for Carbon Sequestration

Urban Farming and Food Production at Roof and Sky Gardens or within buildings (hydroponics/aeroponics)

Ledges for Shading and Rain water collection

On-site Waste Treatment

District Cooling

Rain gardens at streets for Storm water detention

Greenways for Micro Mobility and green infrastructure

Buildings Like Trees: Biomimetic buildings that emulate the productive cycles of nature.
Concept by JLPD





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Planning and Design