

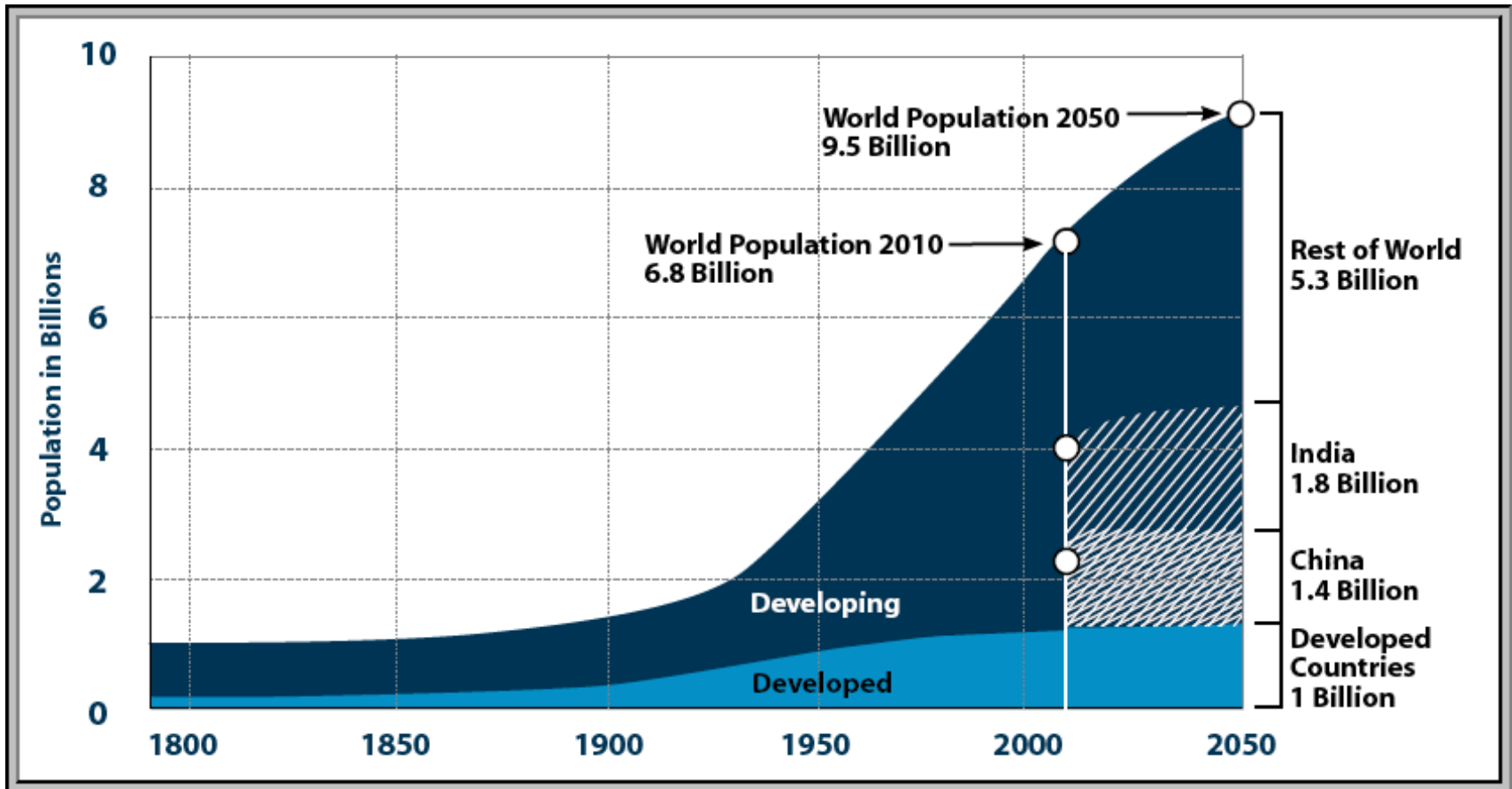
Sustainable Agricultural Production in Urban areas: a view on new developments.

Hein Deprez

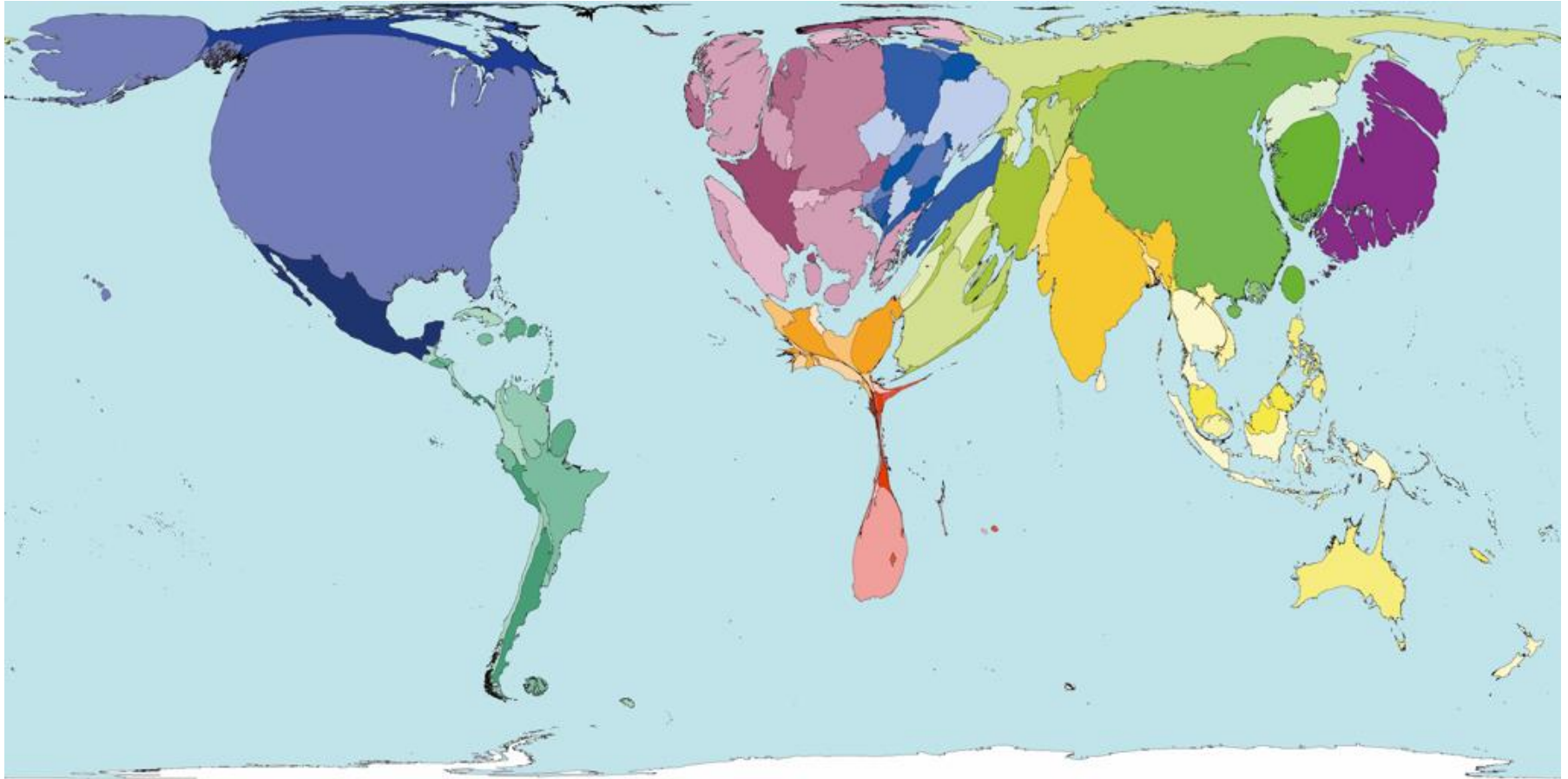
Observations

- Migration of people to cities.
- Resources (eg land) become less available.
- Retailers ask more and more for local production.
- Consumers interrogate the origin of their food.

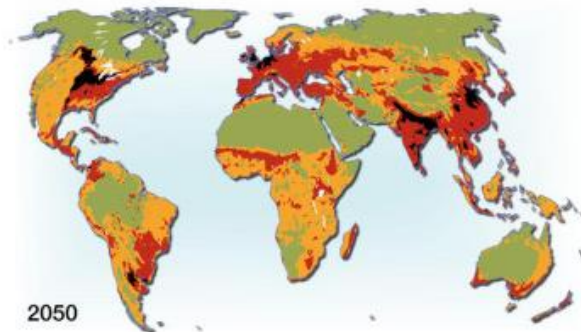
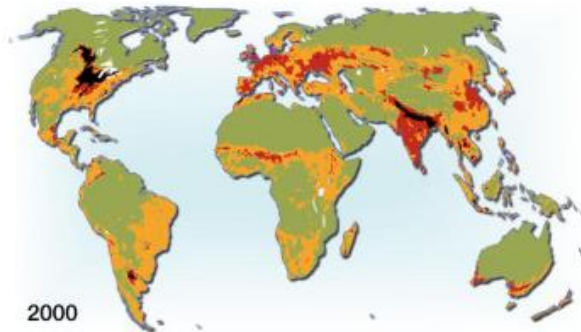
Facts: World population increases



Facts: Global carbon rises



Facts: Biodiversity evolves



Biodiversity, as ratio of species
abundance before human impacts

High impacts	0 - 25
High-medium impacts	25 - 50
Medium-low impacts	50 - 75
Low impacts	75 - 100 %

Mean species abundance (%)

Challenge:

**To nourish 9 billion people by 2050
in a sustainable way**

Challenge:

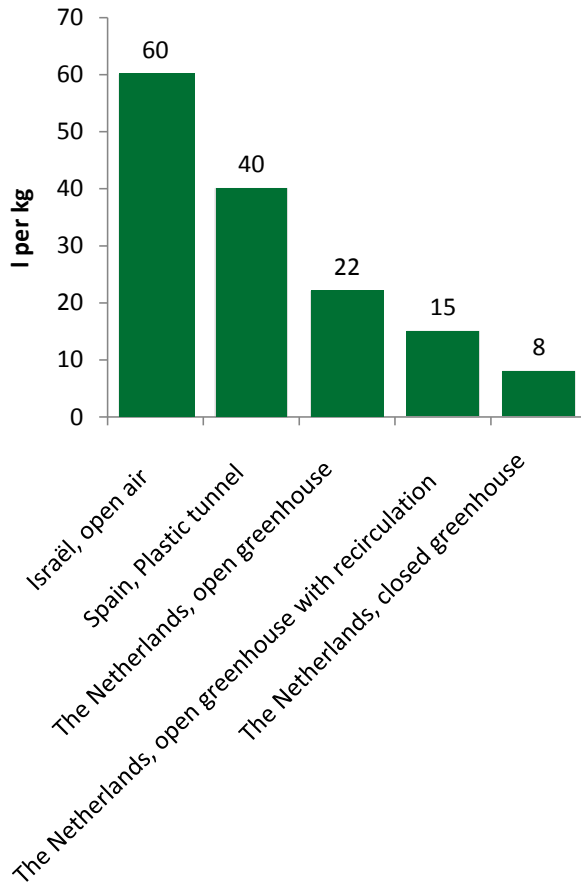
- Sustainability (Brundtlandt, 1987):

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."





- Fruits and vegetables will play a crucial role in this achievement.
- Local production is the answer to the challenge.

Sustainable production of F&V

Recirculation of water



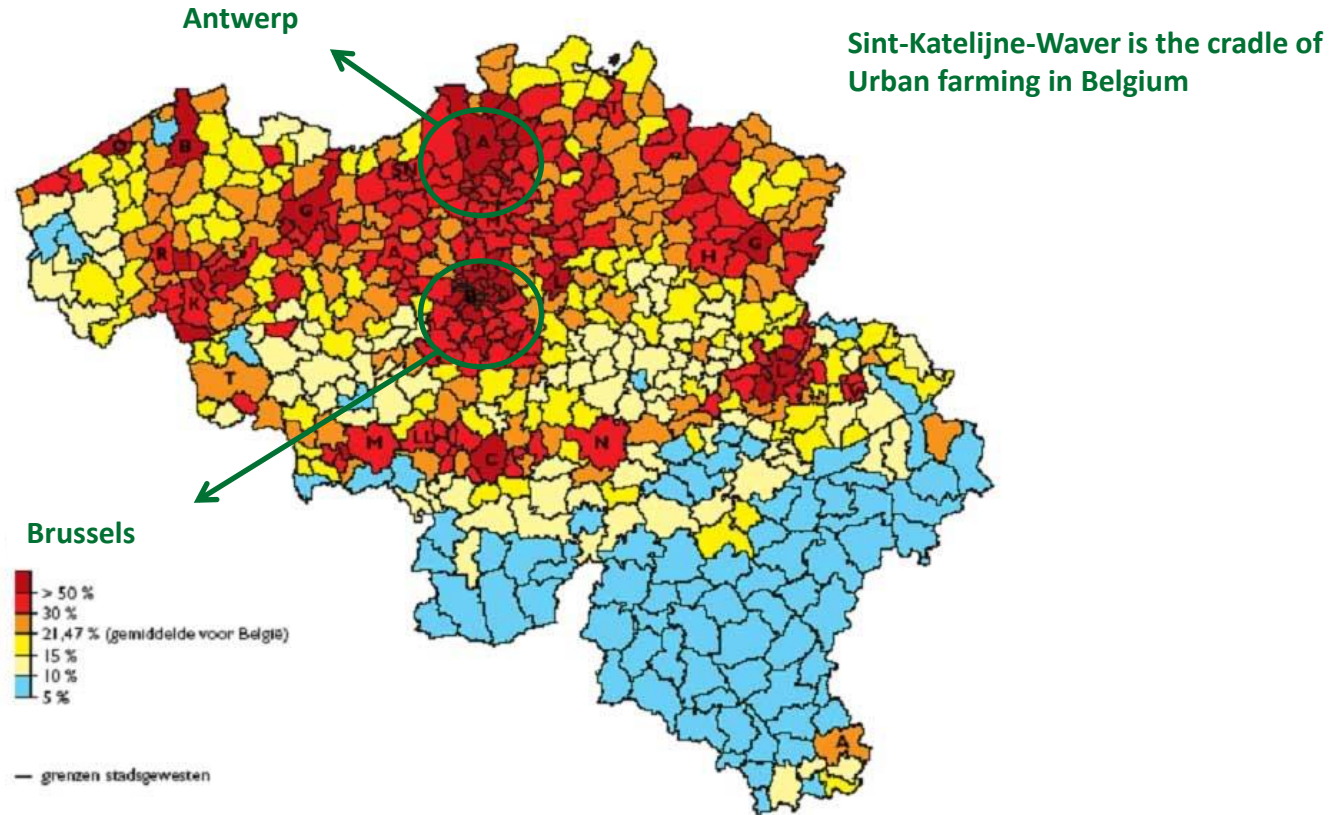
Sustainable heating

Fossil fuel reduction strategies	Measures		
renewable sources			
	solar energy	deep geothermal heat	biomass
			
optimize waste streams	industrial waste heat		

Use of organic substrates



Share of urbanized land surface in Flanders



- Reduces development pressures on productive agricultural lands.
- Improves the biological, ecological and hydrological balance in urban areas:
 - reduction of air pollution;
 - creation of suitable climate conditions;
 - reduction of noise;
 - absorption of rainwater;
 - reduction of stress.
- Improves vertical integration of the supply chain.
- Stimulates fruit and vegetable consumption.
- Reduces the “Food-print”.
- Enforces the link between agricultural production and consumer.

- Vision: Integration of greenhouse production in industrial activities / society to reduce the “Food-print”.
- Examples:
 - “Proeftuin” ;
 - “Rooffoods” ;
 - “Tomato Master & Aqua 4C” ;
 - “Yara Greenhouses” ;
 - “Le petit Botanique” ;
 - “REO Auction”.

Urban farming : Proeftuin (Ghent)



- More than 120 elementary schools in Ghent received a kit to start a vegetable garden in class.



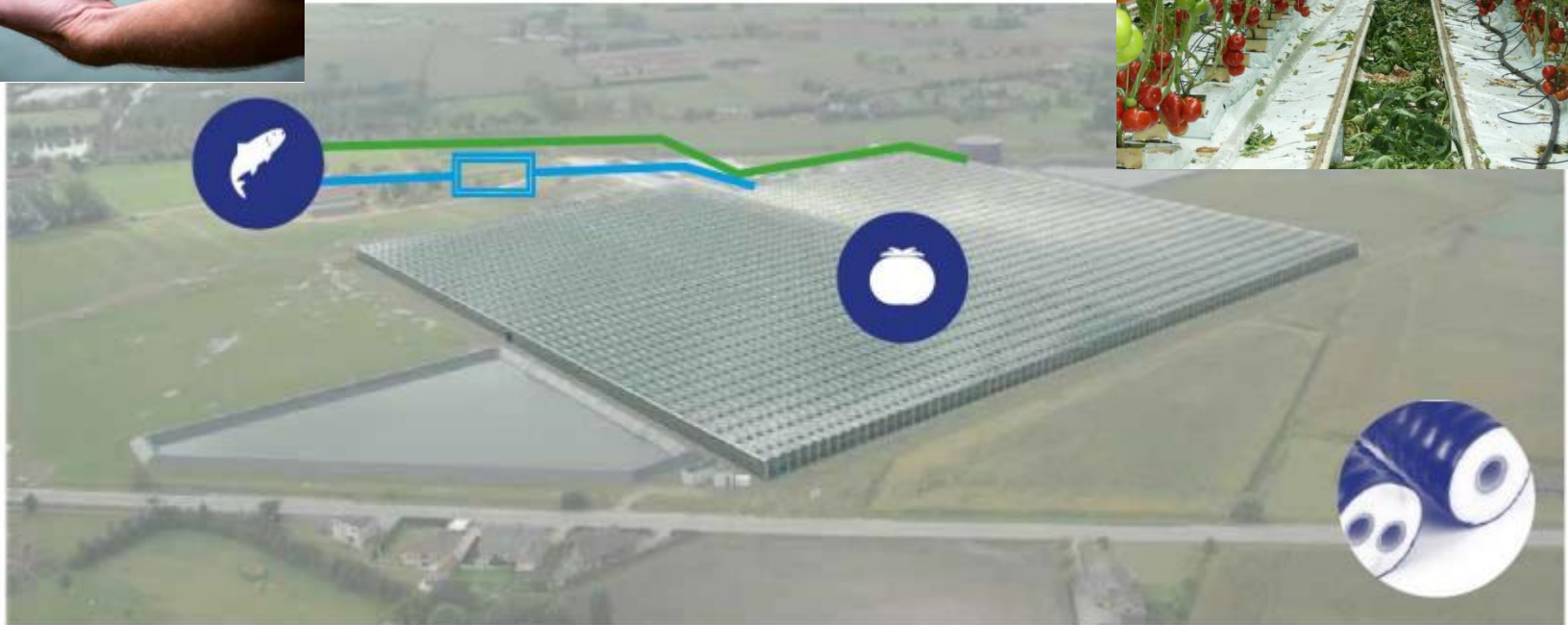
Urban farming : Rooffoods (Ghent)



Restaurant / catering

Production of vegetables on
roof top

Urban farming: Tomato Master & Aqua 4C (Deinze)

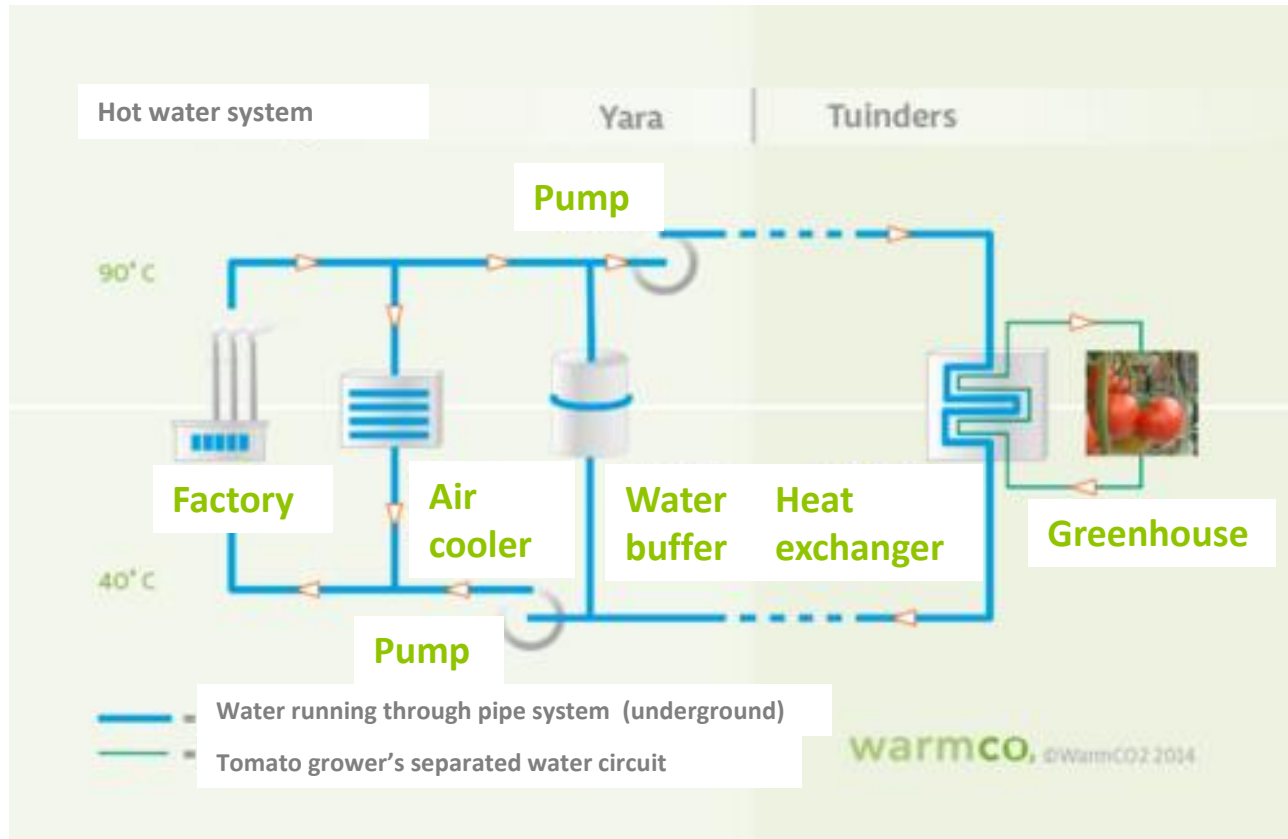


— High-voltage cable & hot water pipe / — Nutrient-enhanced water

Urban farming: Yara – Greenhouses (Terneuzen)

Fertilizer production company

Tomato production company



Urban farming : Le petit botanique (Ghent)



- Production of vegetables in the garden of PCSW “Woonzorgcentrum”
- Vegetables are being used in kitchen

Urban farming : REO Auction (Roeselare)

- 8.000 m² greenhouse
- Greenhouse will be a research center for the sector lead by INAGRO
- Operational by 2018
- Research focus : innovation and energy-saving cropping systems
- Industrial heating will be recuperated from incineration installation



Urban farming : Greenhouses on retailer roof tops?

