

## CARBON FOOTPRINTS and HANDPRINTS (Matti Kuittinen)

KEY QUESTIONS or COMMENTS RAISED in the DEBATE

### SYSTEM RELATED QUESTIONS?

- Why Carbon? Why Carbon as an indicator for Sustainable Development (SD)?
- Homeostatic Systems (building, city, region?, at which scale?)?
- Urbanization & Circular thinking: Should we concentrate in maintaining the building stock even if this requires inefficient or larger infrastructures?
- Shift from energy-demanding to material-demanding systems? What is the current tendency?
- Does footprint take negative carbon into account? If so, why do we need handprints?
- Do we have some acceptance limits?
- Too much or too little CO2 is a problem. Is there the possibility that we might end up reducing the amount or densities of atmospheric CO2 too much?
- LCA in developing countries and tropical climates?
- What is the ideal urban density?
- What is the goal? Carbon neutral? CO2 neutral?, zero fossil fuels? What is a C neutral city?
- Is technology enough (weak versus Strong sustainability?)

### LIFE STYLES

- Why should the average person care about CO2 emissions? Should people have a freedom of choice or should the choices be made for them? GOVERNANCE MODELS for complex societies?

### IMPLEMENTATION TOOLS and METRICS

- Why is the life cycle of buildings so short?
- Why so many few LCA assessments in Landscape Architecture? Which tools are available
- How do the LCA/BIM software systems build recommendations? How do they support the design decision making process?. Can it recommend materials or optimal solutions?
- Ratios per m2 or per inhabitant? Careful with the use of metrics

### DESIGN DECISIONS

- How can Carbon footprints inform the design process? How can we use these metrics in all the phases?
- How should we think about the carbon footprint versus handprint when there is a net positive balance?
- Are there some cases when sustainable solutions are NOT ECONOMICAL? What to do then?
- Global awareness and actions can be affected by ecological (carbon footprint) calculations... Some cases show the economic benefits
- CONSTRUCTION PHASE vs OPERATIONAL PHASE: It is crucial to consider both (see also Environmental Impacts Assessment methods)
- How can different disciplines (e.g. architecture and landscape architecture) collaborate better to improve carbon footprints(handprints). MULTI\_INTER-TRANS disciplinarity

### EXAMPLES

- Best practices and good examples of circular economy in Finland? (manufacturer / client / school)
- Are there already examples of construction projects reducing their carbon footprints? Is the list of options for reducing carbon footprints only an initial list? Are there other approaches to reduce carbon footprints?

**ASSESSING SUSTAINABLE DEVELOPMENT OF URBAN SYSTEMS: EXAMPLES FROM THE FOODPRINT MELBOURNE AND THE CITY OF PORT PHILLIP ECO FOOTPRINT PROJECT (Seona Candy)**

**CONCEPTUAL QUESTIONS**

- LIMITS?: Sustainable levels and carrying capacities. How are they calculated, are they fixed (mobile limits)?... Malthusians versus Cornucopians?
- PROVIDING OBJECTIVE EVIDENCE?: Objectivity versus Greenwashing: RIGHT ANSWERS for the RIGHT QUESTIONS
- LOCALITY?: Is increasing self-sufficiency and locality a key goal? Why? At which scale (city, region, country, planet?)
- HOMEOSTASIS and RESILIENCE: resilience for different states: shifting from one state to another: inertias? Pressures?, self organizing? See DPSIR methods
- HOLISM (socio.-eco-technological systems) in CITIES?: What makes urban systems different? How do we need to operate in them?
- ETHICAL and POSTHUMAN AGENDAS?: Who can evaluate a sustainability and equitable system? Sustainable and equitable for whom? Are non-humans considered?
- WHY CARBON is one of the key indicators?
- NEW FRAMEWORKS: Can digitalization and Dematerialization be used as opportunities? How? Has dematerialization some hidden footprints behind?

**METHODS and DATA**

- SHOULD WE START LEARNING WITH SMALL, SIMPLE SYSTEMS?
- MODELLING COMPLEX SYSTEMS?: Acceptable levels of simplifications and data extrapolation? Working with both the components and their relationships? Setting the boundaries?
- DATA: Sources? How accurate do we need to be?
- SCENARIOS: How to define them? What about the “black swan” (the unpredictable)?
- COMMUNITIES: What should/could be the role of communities in data creation/utilization?
- METRICS: Why are measurements on a per capita base?
- ACCOUNTING METHODS for the MODEL?: Material Flow Analysis, Flows and Stocks, Ecological Footprints, etc...?
- METHODS to MODEL and ASSESS the functioning of a system? METHODS to CONDUCT the WORK?

**WHY FOOD?:**

- Animal protein versus Plants proteins?
- How do you see other food production technologies affecting agriculture and industry? (more efficient framing? Ecological industrial agriculture versus Ecological organic agriculture?)
- Is regenerative agriculture a feasible option? Is decreasing in Food productivity a global trend or is just an Australian phenomenon?
- Are new food production options considered in Australia (e.g. insects farms)?
- Where is the food for livestock produced? If the production of red meat decreases, will the space be liberated for other agricultural purposes?
- FOOD WASTE: Is it significant? How can we reduce it during the production, processing and consumption chain

**INDIVIDUALS AND COLLECTIVE GOVERNANCE**

- ROLE OF COMMUNITIES in the definition of objectives, diagnosis and proposals (e.g. strategies and policies)?
- PLANNING CHANGES in WAYS OF LIVING? (eating less meat, using more public transport, etc.). What are the ways and Who will implement them? Or is it's a kind of “saving the world” depending on Individuals?
- Why were the presented policies so focused on the individual? Would there not be more efficient ways of implementing more regulating upstream suggestions?
- Are recommendations and policies actually implemented?

**PLANNING & ECONOMICS:**

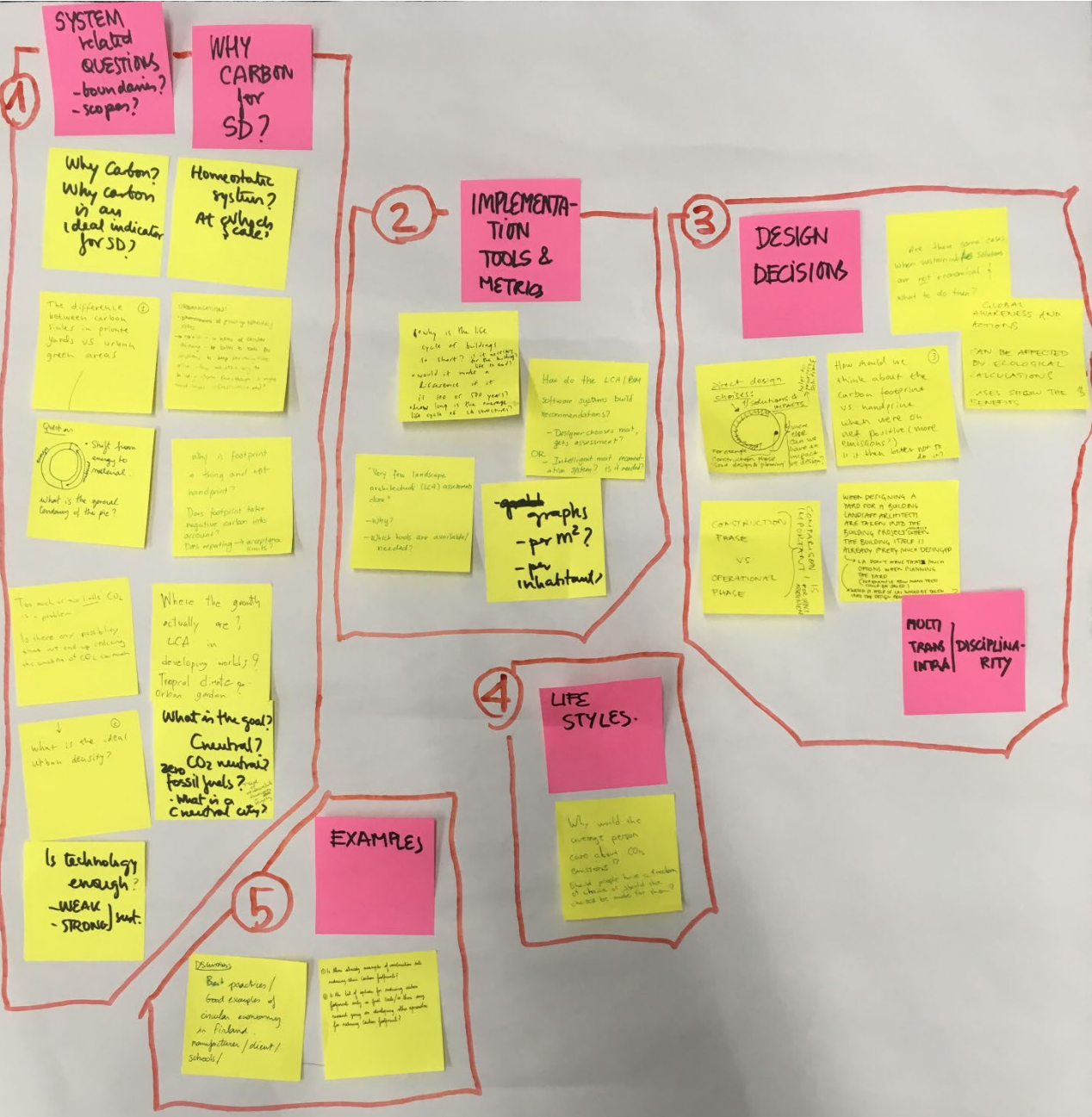
- Are country exports and imports interdependent? How does an individual account for them
- Why does the technological part need to stand alone? Why the economic component was not included in the model? What are the roles of businesses in the transdisciplinary approach?
- Where to best position land for agriculture?... Within the city? >> decreases density and hinders some urban functions, Out of the city ? How far? >> long distances increase carbon footprints due to transportation
- Are cities the right arena and scale for sustainability related changes? What about other planning levels?

**FINDINGS from the AUSTRALIAN CASES:**

- After compiling and processing lots of data. What were the biggest surprises? Is there some untapped potential in some areas of action?
- What were the most relevant findings in terms of assessing sustainable development of urban systems?

# Landscape and the Sustainable Development Ozymoron?

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