Urban gardeners as localised prosumers within circular economy: Case studies of home, allotment and community gardening

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Introduction

- Food production in the gardens (gardening, food self-provisioning)
  - Multifaceted activity widespread in global North countries
  - Various motivations of gardeners
  - Different interpretations by researchers

- Potential benefits of gardening
  - Shortest food supply chain
  - Circular economy and use of materials – e.g. composting
  - Urban greenery – adaptation to climate change, ecosystem services
  - Greenhouse gas mitigation – low carbon footprint of food
  - Social & economic benefits – health & leisure, cultural significance, networks, resilience, financial savings

Research topic

- Urban gardening as an important part of urban metabolism
  - Food production
  - Composting
  - Focus on 3 categories of gardens
    - Home, allotment, community

Methods

Five case studies from Czechia

- Urban gardens in general
  - Two quantitative surveys among Czech population in 2020
    - Representative sample of population (N = 1047)
    - Gardeners – having access to gardens (N = 1037)
    - Self-reported data (estimated by gardeners)
- Allotment gardens
  - Qualitative research – interviews, observations and food logs (in Brno)
  - 13 gardeners in 2014
  - 27 gardeners in 2017 (include some home gardens and second home gardens)
- Community gardens
  - Quantitative survey of allotment gardeners in 2018–2019
  - Respondents from 28 community gardens (N = 207)

Food production in gardens

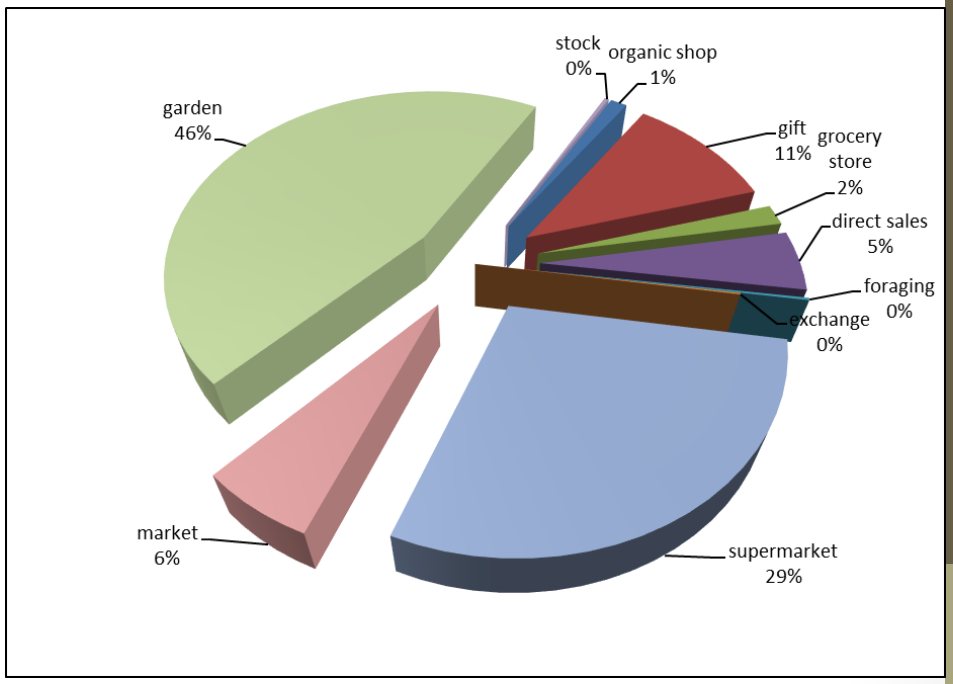
- Share of active gardeners in urban areas (pop. > 5,000) is 29%

- Active urban gardeners (pop. > 5,000; N = 517)
  - 88 % of those with access to garden produce some food
  - 71% home gardens (incl. relatives), 24% allotment gardens, 1% community gardens (weekend houses not included)
  - Average garden: area of 622 sq. meters, plot 110 sq. meters, 13 fruit trees
  - Self-sufficiency (without food sharing)
    - 25% of fruit
    - 25% of vegetables
    - 17% of potatoes

Food production in allotment gardens

- 2014 case study
  - Allotment gardens 200-250 sq. meters
  - Average yield 122 kg/6 months (range 4-411 kg)
  - Self-sufficiency 31% (some food shared)
  - Average productivity
    - 1,18 kg/sq. meters

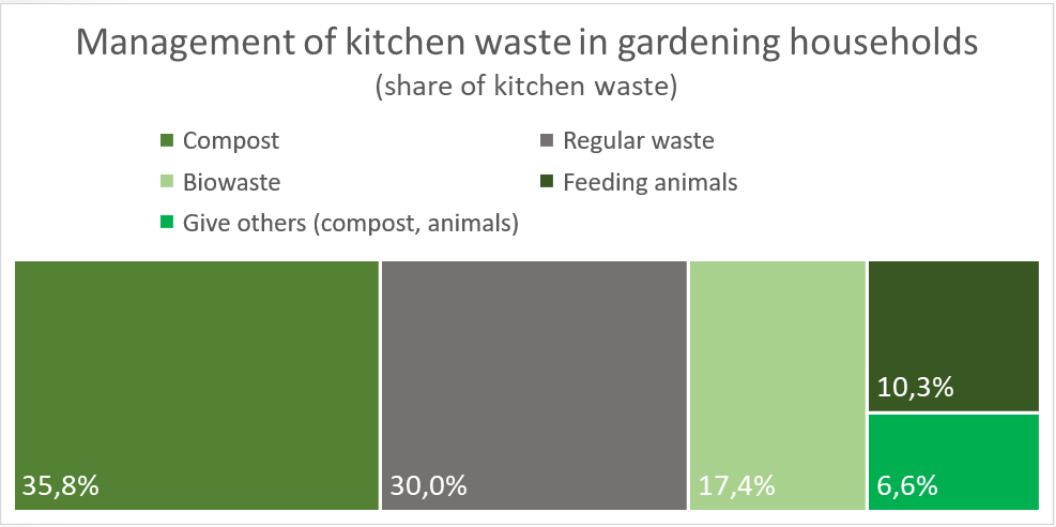
Sources of fruit and vegetables (2014)

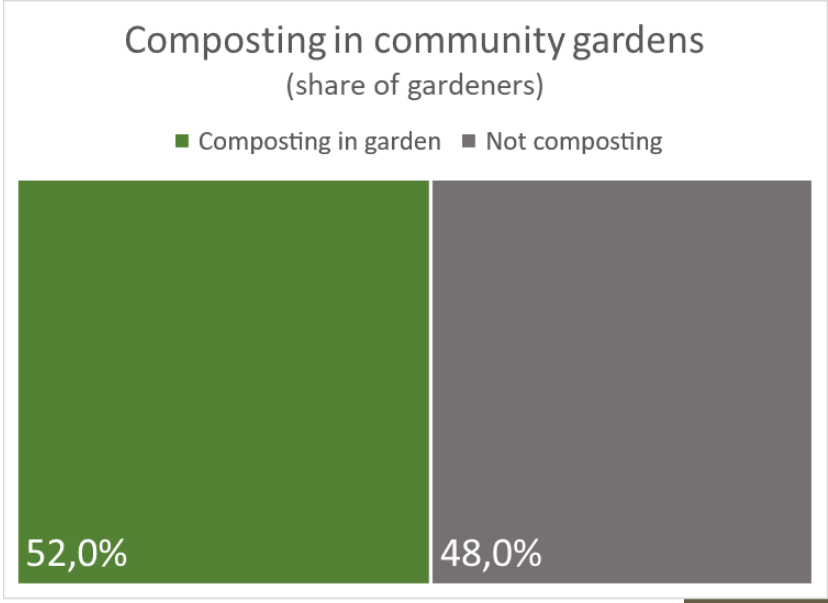


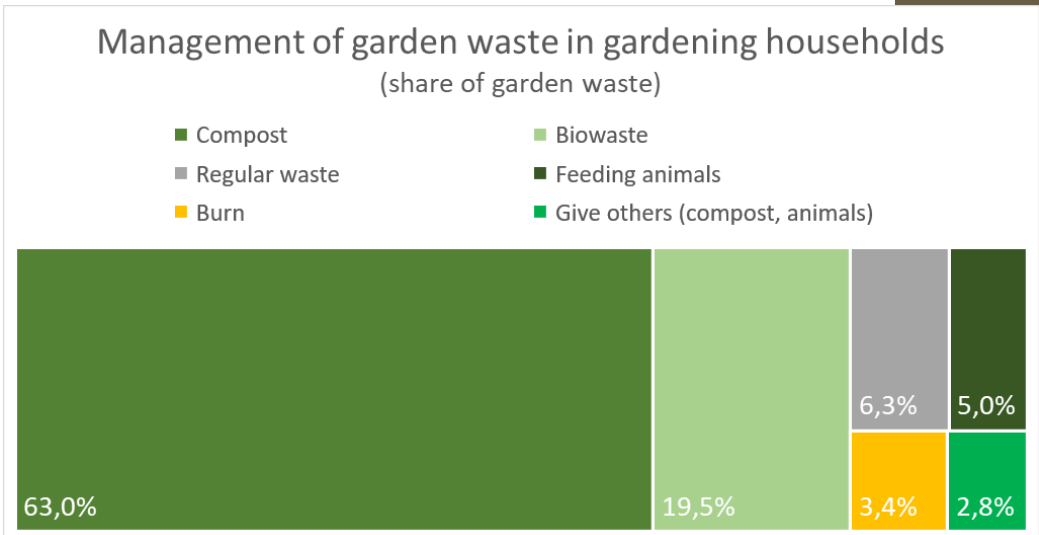
Sovová (2015, p. 17)

- 2017 case study
  - Average yield 107 kg/4 months
  - Self-sufficiency 31%

Composting


Management of kitchen waste in gardening households
(share of kitchen waste)
Compost
Regular waste
Biowaste
Feeding animals
Give others (compost, animals)
35,8%
30,0%
17,4%
10,3%
6,6%


Composting in community gardens
(share of gardeners)
Composting in garden
Not composting
52,0%
48,0%


Management of garden waste in gardening households
(share of garden waste)
Compost
Biowaste
Regular waste
Feeding animals
Burn
Give others (compost, animals)
63,0%
19,5%
6,3%
5,0%
3,4%
2,8%

Discussion

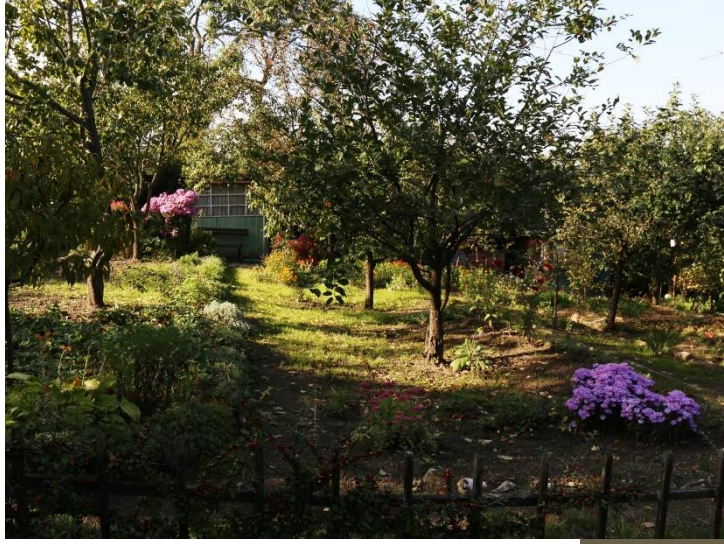
- Results corroborate how widespread gardening could be in rich global North country (highly industrialized, 27th position in HDI)
  - Both share of gardeners in population & amount of food produced

- Vávra et al. (2018) – average Czech gardener saves 42-92 kg/CO_2/year
  - Current data show slightly lower amount (decrease in production since 2015)
  - Sensitive to composting (Cleveland et al. 2017)
    - Ranking: 1. Efficient biogas station; 2. Composting; 3. Landfill
    - Collection and biowaste management is problematic in many Czech towns and cities

- Compost as a source of nutrients
  - 50 % of gardeners use compost as the only fertilizer
  - 37 % use compost and industrial fertilizers
  - Compost as important element for Carbon sequestration and water absorption (organic matter important for soil)

- Non-environmental motivations of gardeners (choice from offered possibilities)
  - Fresh & healthy food, hobby – all gardeners
  - Joy, social interaction, leisure & relaxation – community gardeners

Conclusions



- Importance of gardening
  - Significant part of society
  - Gardening is widespread in urban areas
  - High numbers of production (relevant prosumers)
- “Invisible” home gardening is most important and deserves more attention
- Despite non-explicit environmental (or political) motivation, gardeners contribute to environmental sustainability by food production and composting
- Interpretation in terms of “quiet sustainability” (Smith & Jehlička 2013) or “sustainable materialism” (Schlosberg & Coles 2016)

Author of all photos in the presentation: Markéta Tichá.

Thank you for your attention

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