



# Food self-provisioning in 21<sup>st</sup> century: overview of 15 years of research in Czechia

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- Informal food production (gardening, food self-provisioning, subsistence) is an important, yet often overlooked, practice in countries of the Global North
- Case studies show its popularity in many countries or their regions, e.g. Canada, US, Scotland, Luxembourg, Germany, Hungary, Slovakia, Poland, Croatia, Moldova, Russia and Czechia
  - e.g. Teitelbaum & Beckley, 2006; Schupp & Sharp, 2012; Rochovská & Majo, 2013; Vávra et al., 2018; Alber & Kohler, 2008
- In European post-socialist countries, a drop in informal food production has been observed since the early 1990s, though the share of gardeners is relatively high according to recent research (approx. 1/3–1/2 of population)
  - e.g. Rose & Tikhomirov, 1993; Smith & Jehlička, 2013; Piras, 2019

- **Modernisation theory sees gardening as a traditional way of obtaining food which will be substituted by market economy during modernisation proces, including post-socialist transformation**
  - Gardening as de-modernisation in 1990s Russia (Rose & Tikhomirov, 1993)
  - Gardening in rural Czechia as ‘hang over from the past, which contributes to the relatively low purchasing power of the countryside’ and ‘can sometimes contribute to decline and exclusion’ according to Plan of Agricultural and Rural Development of the Czech Republic 2000–2006 (2000)
- **Interpretation of gardening in the European West and East**
  - Self-realization, hobby, reflexive behaviour in the West while economic necessity in the East (e.g. Alber & Kohler, 2008)
  - Multifaceted behaviour with very similar motivations and social groups involved in both West and East (e.g. Vávra et al., 2018; Sovová & Veen, 2020)
- **Changing perspectives on gardening**
  - Urban gardening being more highlighted and ‘trendy’
  - Gardening as unintentional ‘quiet sustainability’ (Smith & Jehlička, 2013)
  - Part of diverse economy (e.g. Gibson-Graham, 2008; Sovová & Veen, 2020)
  - Problems with recognition of the knowledge generated in semi-periphery, like Eastern informal food production (Jehlička et al. 2020)

# Aim of this presentation

- Long-term 15-year perspective of informal food production in a changing country
- Observation of 2005–2020 changes in regard to:
  - Share of gardeners in population
  - Sociodemographic profile of gardeners
  - Spatial distribution
  - Rate of self-sufficiency and food sharing
  - Motivations
- Present the results at the background of country's development and the informal food production theories

# TYPES OF GARDENS (2020)

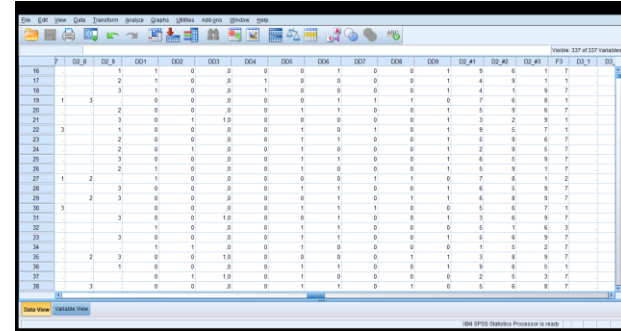
- Home gardens (73%)
- Cottage/weekend house gardens (10%)
- Allotment gardens (8%)
- Others incl. community or relatives' gardens (8%)



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## ● Data sources

- Four quantitative sociological surveys representative of Czech population (15+/18+)
- Face-to-face questionnaires (partially online in 2020)
- Quotas – gender, age, education, municipality size, region
  - 2005: N=1056
  - 2010: N=1024
  - 2015: N=2058
  - 2020: N=1047
- Confidence limits up to +/- 3% & specifics of each survey ► rather observation of trends than statistical analysis of changes
- Two supplemental sources (both representative surveys in 2020)
  - Active gardeners: N=1037
  - Overall population: N=530 (part of ‘Our relationship with food during the Covid-19 pandemic’ research, <https://www.food-covid-19.org/>)



|    | D2_8 | D2_9 | D2_1 | D2_2 | D2_3 | D2_4 | D2_5 | D2_6 | D2_7 | D2_8 | D2_9 | D2_10 | D2_11 | D2_12 | D2_13 | D2_14 | D2_15 | D2_16 | D2_17 | D2_18 | D2_19 | D2_20 | D2_21 | D2_22 | D2_23 | D2_24 | D2_25 | D2_26 | D2_27 | D2_28 | D2_29 | D2_30 | D2_31 | D2_32 | D2_33 | D2_34 | D2_35 | D2_36 | D2_37 | D2_38 |
|----|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 16 | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 17 | 1    | 2    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 18 | 1    | 3    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 19 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 20 | 1    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 21 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 22 | 3    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 23 | 1    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 24 | 1    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 25 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 26 | 1    | 2    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 27 | 1    | 2    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 28 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 29 | 1    | 2    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 30 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 31 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 32 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 33 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 34 | 1    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 35 | 2    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 36 | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 37 | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 38 | 1    | 3    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

Special thanks to Petr Daněk (Masaryk University), Petr Jehlička and Tomáš Kostecký (both Czech Academy of Sciences) for providing access to 2005–2015 data.

# Macro-structures of Czechia

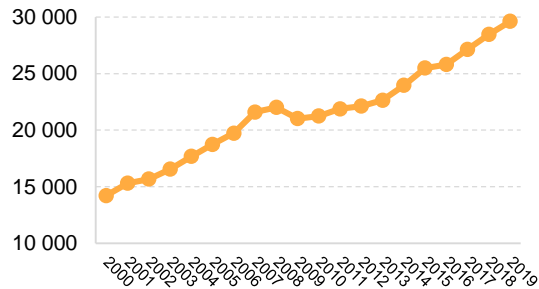
## ● Czechia

- 10.7 millions inhabitants, 78.9 km<sup>2</sup>, pop. density 136 pers./km<sup>2</sup>
- Global North country (26<sup>th</sup> in HDI for 2019)
- OECD and EU member with socialist history (1948–1989)
- Aging society – average age 38,8 years in 2000; 42,5 years in 2019

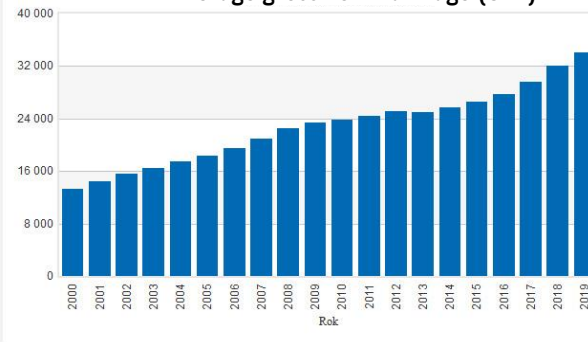


<https://cs.wikipedia.org/wiki/%C4%8Cesko>

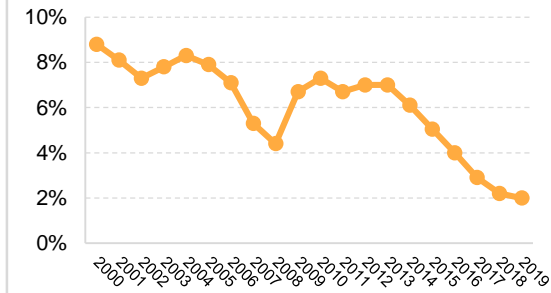
### GDP per capita in EUR (PPS)



### Average gross nominal wage (CZK)



### Unemployment rate



Data from Czech Statistical Office.





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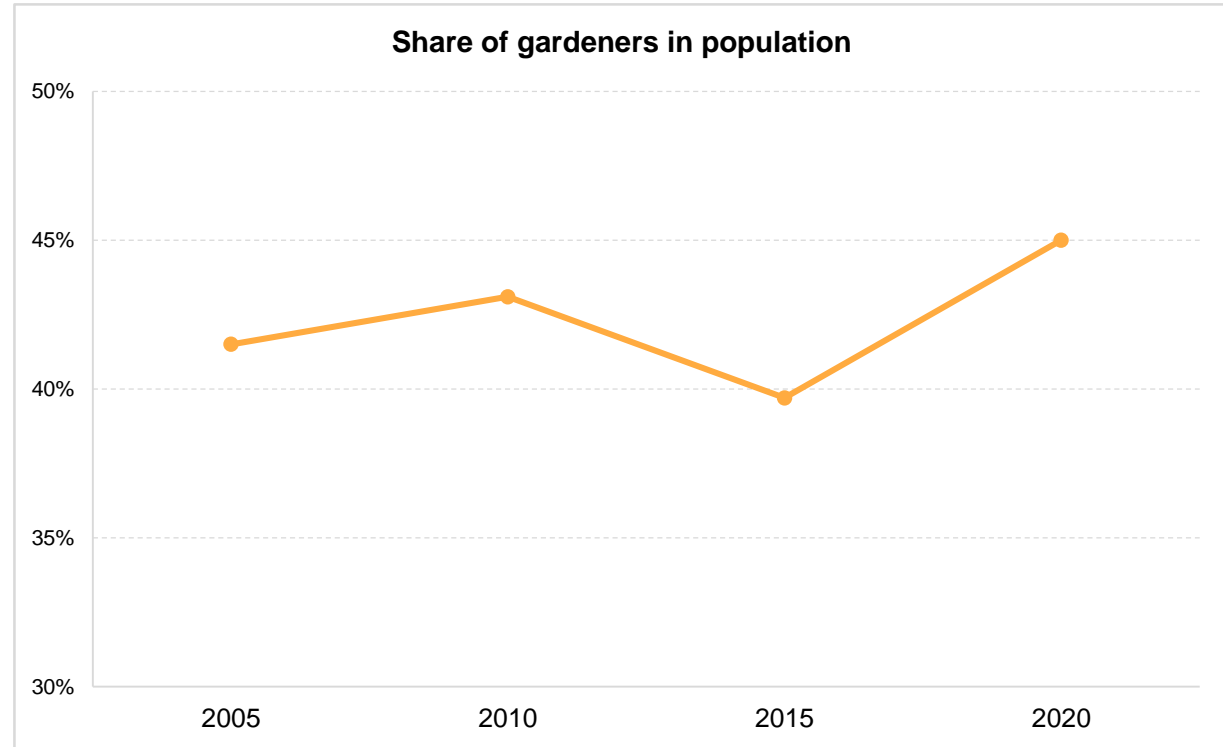
42

- Percentage of gardeners in Czech population (average of 2005, 2010, 2015, 2020 data)



# Share of gardeners

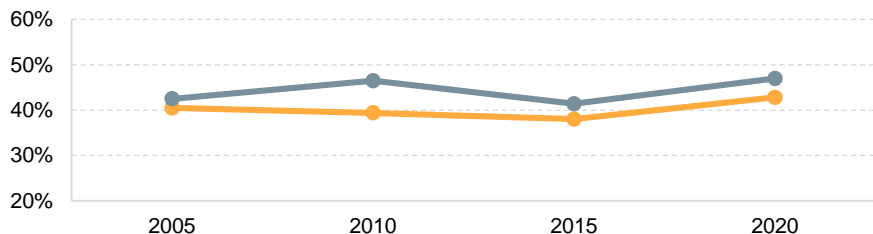
- Respondents who reported having access to garden and using it for food production (household level)
- Additionally, 14% of population considers gardening (9% regardless Covid-19 Spring experience, 5% due to this experience) in 2020
- Mostly young people



# Share of gardeners according to sociodemographics

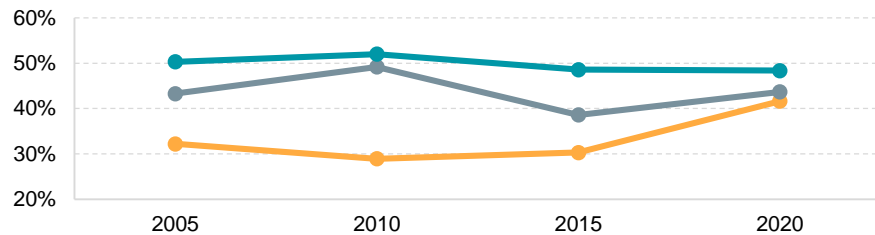
## Share of gardeners - gender

Male Female



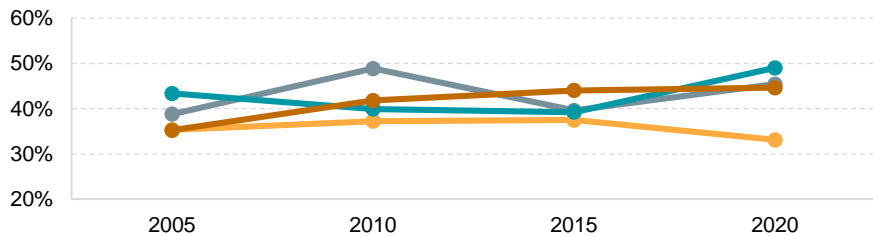
## Share of gardeners - Age groups

< 35 35 - 54 55+



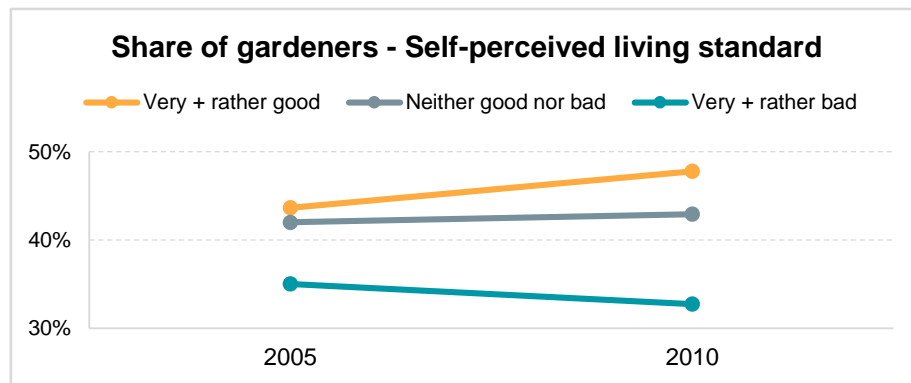
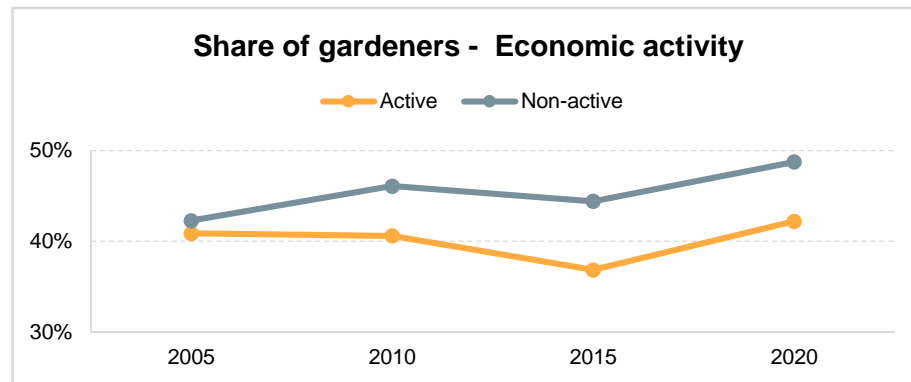
## Share of gardeners - Education

Grammar Lower intermediate Higher intermediate University

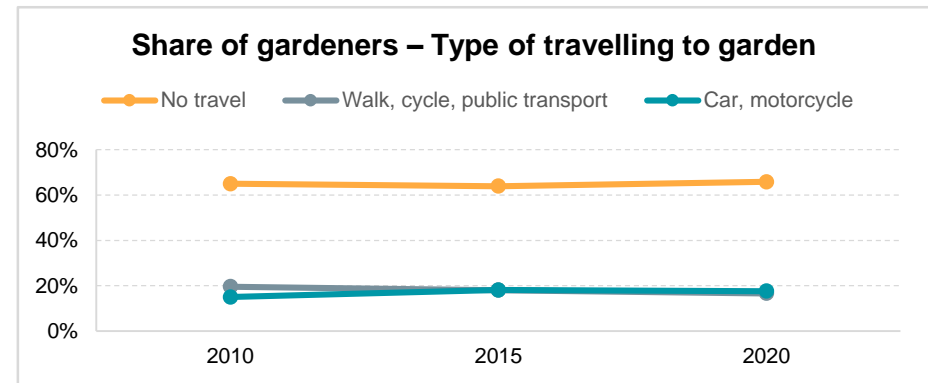
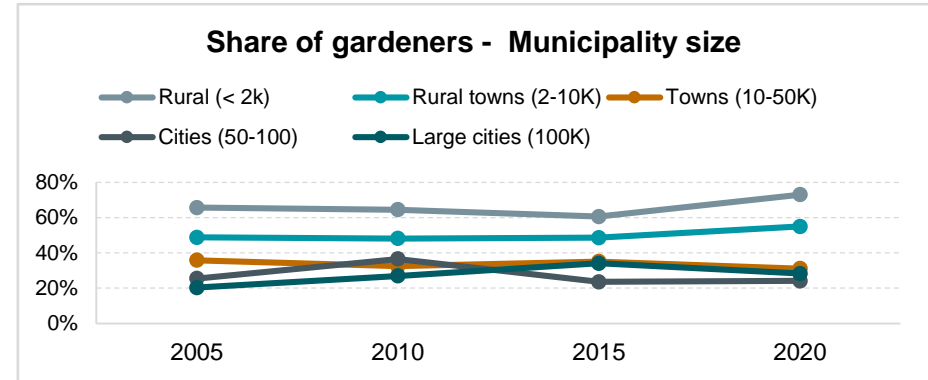


- General population gets older and more educated, so do gardeners
- Share of gardeners is higher in higher age groups but recent trend shows potential increase in the younger
- Weak effect of education, with more visible recent distinction

- **Work in progress**
  - Analysis of effect of net households income has to be done (OECD units)
- Increase of the difference between economically active and non-active (retired, unemployed, parent leave, etc.)
- Increase in differences according to the self-perceived living standard (only two datapoints)

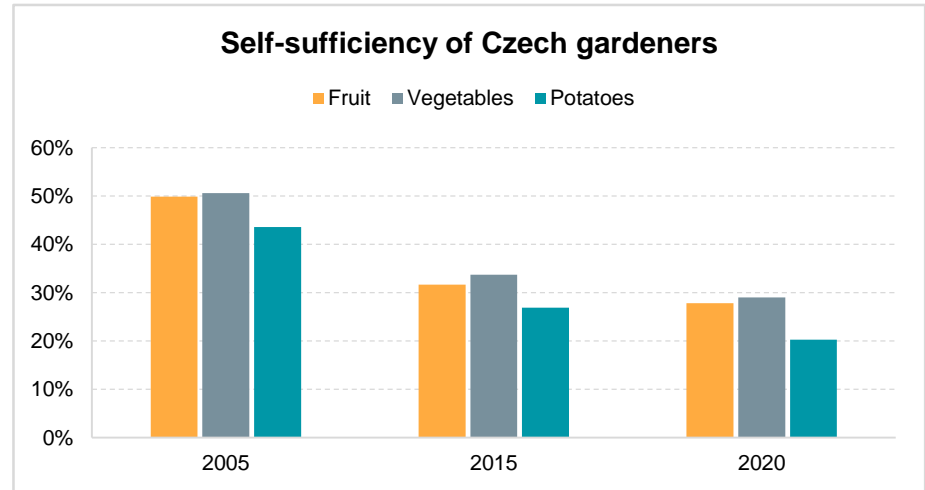


- Municipality as a proxy for land availability?
  - In 2020 in rural areas (2 000 or less) 74 % of population grow food, while 24% do in cities of 50-100 000 (lowest share not in major cities, effect of weekend houses?)
  - Increase in major cities (from 20 to 28%)
- Dominance of home gardens (backyards)
  - Approx. 20% households in multistory or prefab buildings also grow food
- ‘Trendy’ modern Alternative Food Networks completely marginal
  - Community gardens make 2% of all gardens (in 2020)
- Travelling to gardens – proxy for place
  - Support of 2020 data (stability in time in regard garden type)



# Rate of self-sufficiency

- **Decrease in rate of self-sufficiency (effect of method of data collection?)**
- **Comparison of the changes by respondents:**
  - In 2010, 17 % report growing more food than decade ago (35% less than they used to).
  - In 2020, only 9% grow more, while 40% less
  - The rest (44, respectively 39% the same, others don't know)
- **Increase of sharing**
  - In 2010, 40% did not share any of their grown food, only 24% do not share in 2020

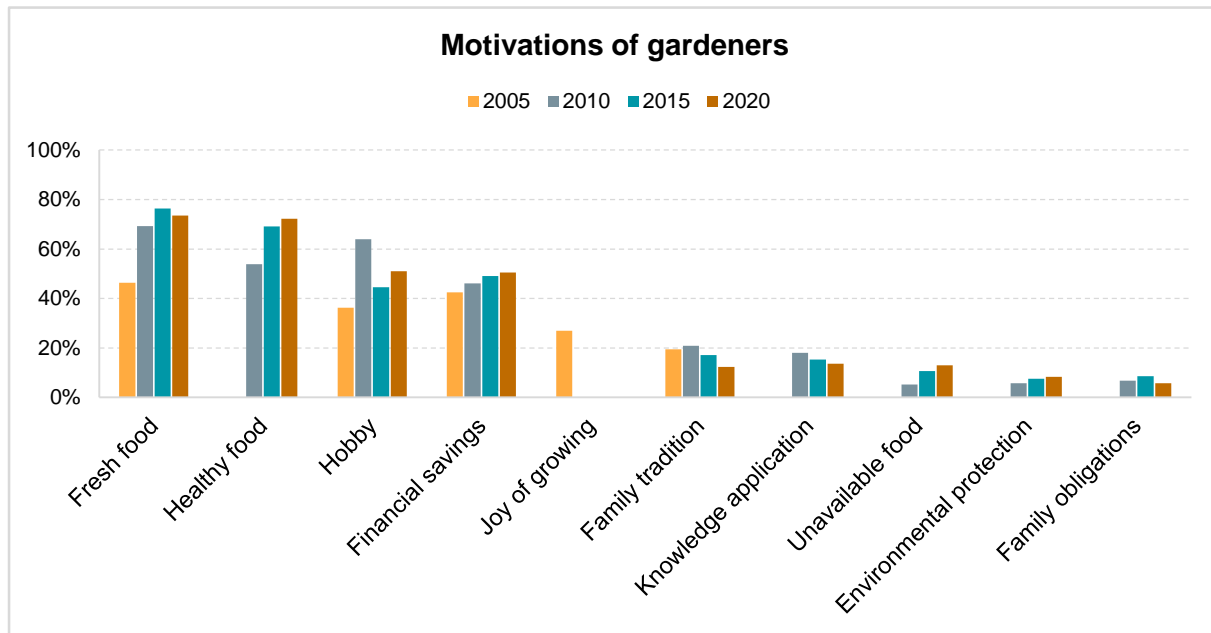


In 2005, respondents were asked to rate self-sufficiency for 9 types of fruit and 6 types of vegetables (figure shows averages). In 2015 & 2020 they filled data for fruit and vegetables in general. Data for 2010 are missing.



# Motivations

- The motivations can be split into two groups:
  - The BIG FOUR – fresh & healthy food, hobby and financial savings
  - OTHER
- Some increase among these four, plus unavailable food (in the shops).
- Decrease in family tradition & obligation (helping to relatives) and knowledge application
- Intentional environmental protection not at all important but implicitly might be integrated in 'healthy' food



In 2005, respondents rated five types of motivations. Figure shows share of answers 'very important'. Since 2010, respondents have been choosing three most important motivations from the list of nine. Figure shows how often the particular motivation was mentioned among TOP3 (regardless the position).

- **Gardening is stable activity widespread among all social groups**
  - More common among older groups but not decreasing among younger (rather opposite – potential increase)
  - Cannot be seen as disappearing activity of older generations or economic necessity
  - Contrary, might be function of time (having more time – economic non-active) leads to gardening
  - Very common in rural areas and in houses in general – suggests that land availability is more important than rural-urban culture
- **Stable structure of most important motivations (TOP4 – fresh and healthy food, hobby, savings)**
- **Decrease of self-sufficiency**
  - Might have some economic explanation (or the effect of less time for gardening?)
- **Increased living standard does not lead to drop in gardening popularity, rather to slight transformation of the activity – lower harvests, more sharing (knowhow and potential for resilience maintains)**

- Very widespread activity of ‘diverse economy’ (non-market, non-capitalist, sharing)
- Theories and interpretations should take into account multifaceted nature of informal food production and reflect that despite ‘Westernization’ and economic growth, gardening remains popular activity with relatively high harvests
  - Neither economic necessity, nor environmental protection/self-realization/hobby can explain gardening alone
  - Czechia (in fact whole Central/Eastern Europe) as a place for knowledge production and inspirations towards sustainability transformation
- Covid-related thoughts – garden as a safe space for social interaction, source of resilience, etc.
- Community gardens and other ‘modern’ alternatives are marginal – this is in contrast with coverage in research
- Further detailed analyses needed

- Spaces of Quiet Sustainability project website
  - <https://tichaudrzitelnost.geogr.muni.cz/en/>
- Series of three webinars on informal food production (starting 2 December 2020)
  - <https://tichaudrzitelnost.geogr.muni.cz/en/informal-food-production-and-sharing-webinars/>
- Special issue ‘The Invisible Sustainability of Otherness: Rethinking Food Systems from the Margins’ of Sustainability (co-edited by Petr Jehlička)
  - [https://www.mdpi.com/journal/sustainability/special\\_issues/rethinking\\_food\\_systems\\_from\\_the\\_margins](https://www.mdpi.com/journal/sustainability/special_issues/rethinking_food_systems_from_the_margins)
- Special issue ‘A Systemic Perspective on Urban Food Supply: Assessing Different Types of Urban Agriculture’ of Sustainability (co-edited by Jan Vávra)
  - [https://www.mdpi.com/journal/sustainability/special\\_issues/Urban\\_Food\\_Urban\\_Agriculture](https://www.mdpi.com/journal/sustainability/special_issues/Urban_Food_Urban_Agriculture)



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**THANK YOU**  
for your attention





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