Mapping of gardens in Flanders via crowdsourcing

Project: Mijn Tuinlab (My Garden Lab)

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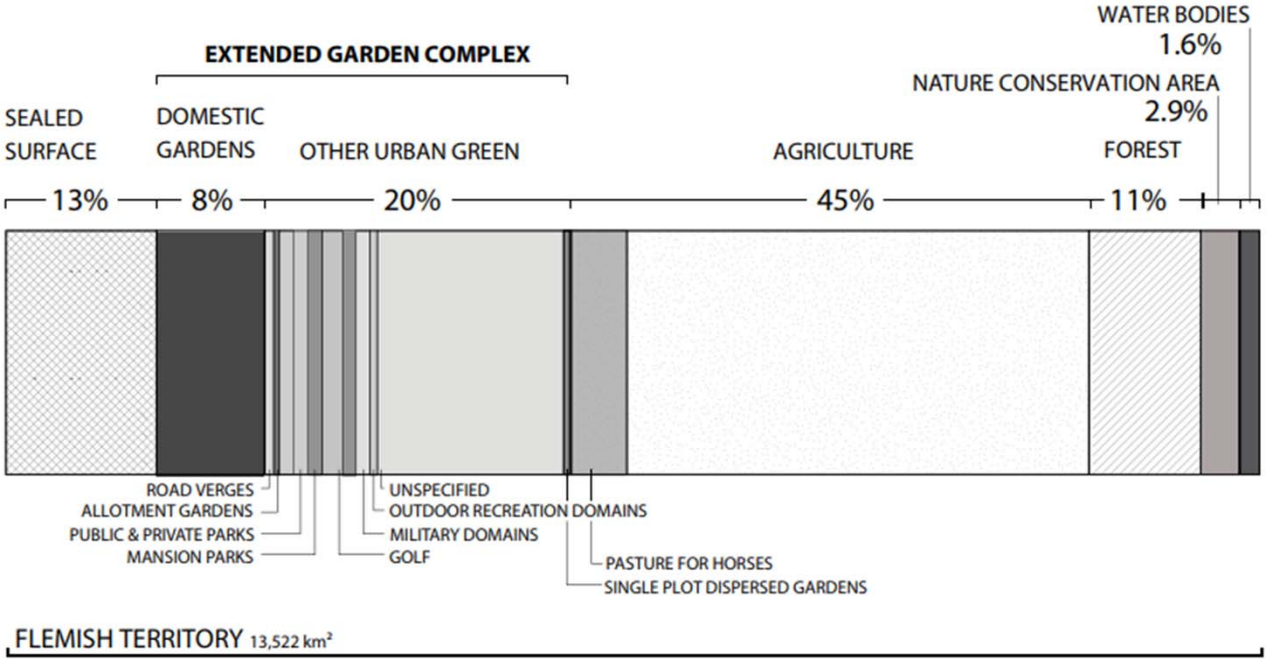
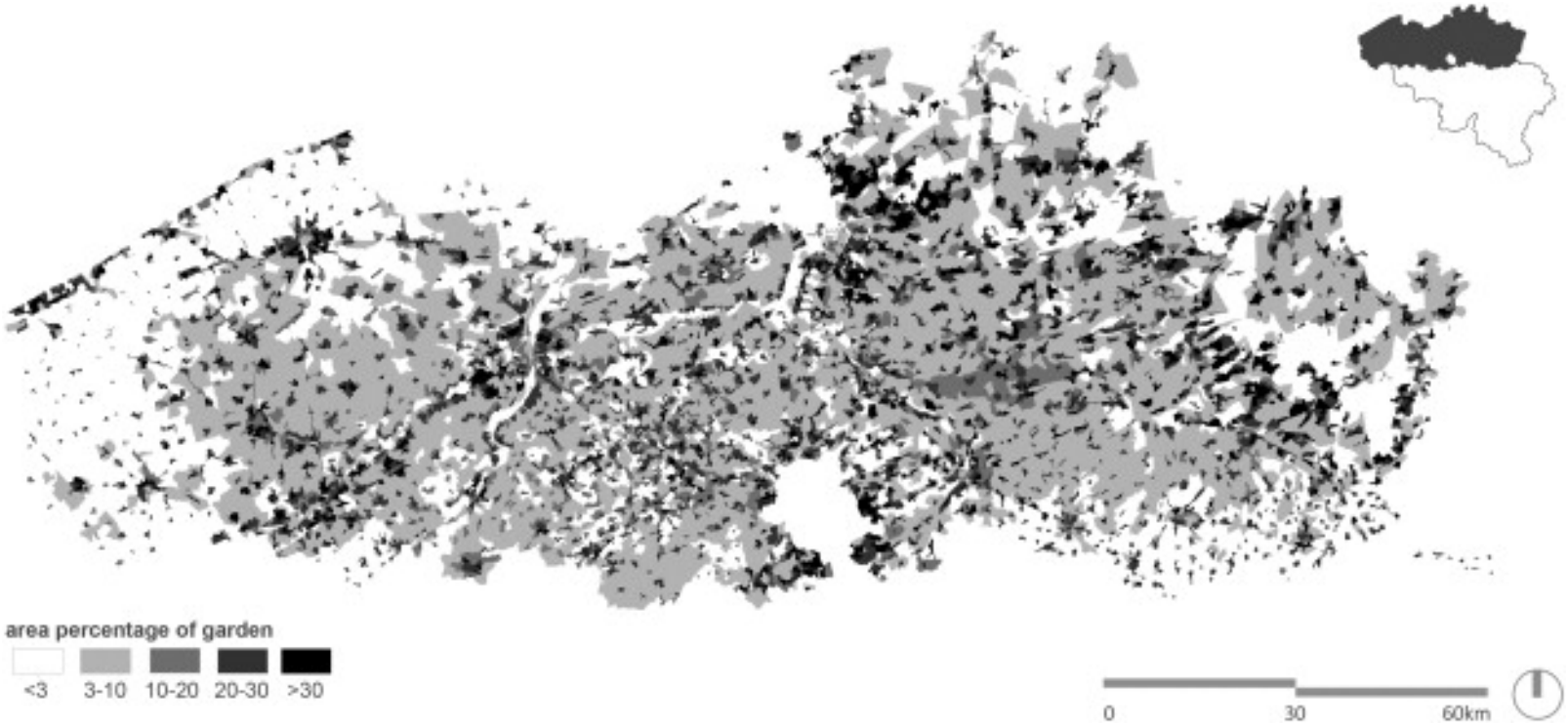
Why mapping of gardens?

- % of land cover in Flanders (2014):



Dewaelheyns, Valerie. "The garden complex in strategic perspective. The case of Flanders." (2014).

Why mapping of gardens?



Dewaelheyns, Valerie. "The garden complex in strategic perspective. The case of Flanders." (2014).

Why mapping of gardens?

- Ecosystem services = benefits to humans from ecosystems

Provisioning services	Regulating services	Cultural services	Supporting services
• Firewood • Fruit, vegetables, herbs • Flowers which can be used as a gift	• Temperature regulation • Improvement of air quality • Water buffering • Carbon sequestration	• Recreation • Esthetic role • Wellbeing / health • Educatie	• Biodiversity • Pollination • Habitat for species

Current garden map

- Garden map of Flanders was made by:
  - Satellite images
    - Sentinel 2
    - Pleiades
  - Aerial photo
- Map can be used for research and policy

Goals crowdsourcing

1. Validating and optimizing satelite and orthofoto based map

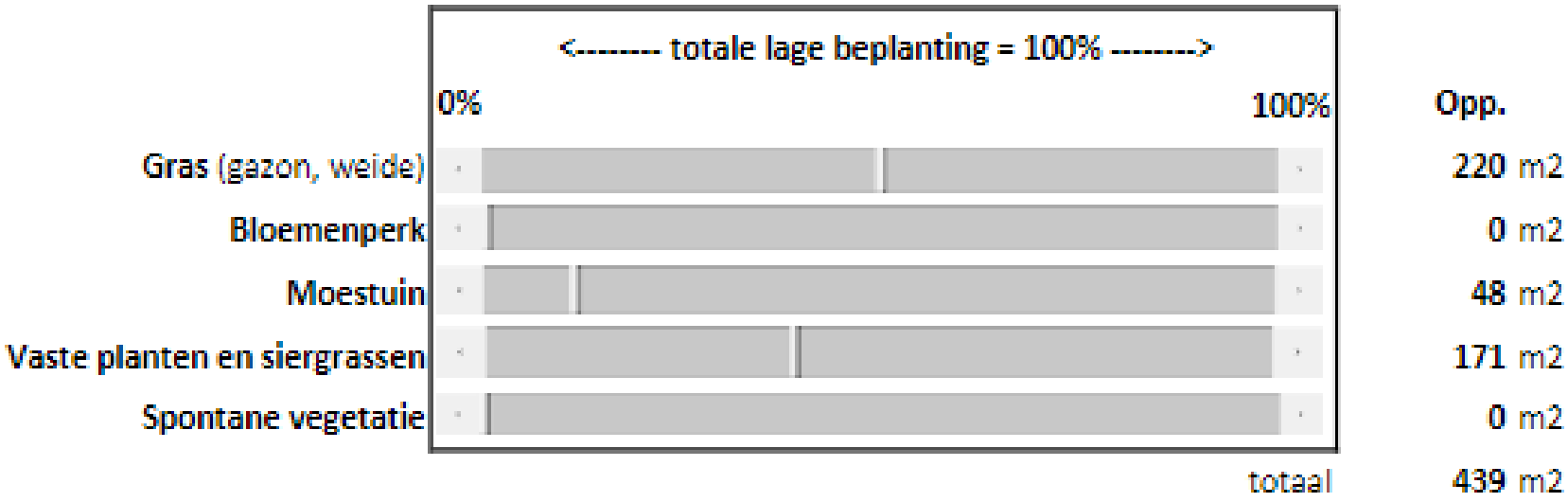
2. Inform + stimulate action in general public
    - Give garden score to general public to give insight in ecosystem services of their gaden
    - Hints to improve their score

Goal crowdsourcing

Classes of land covers

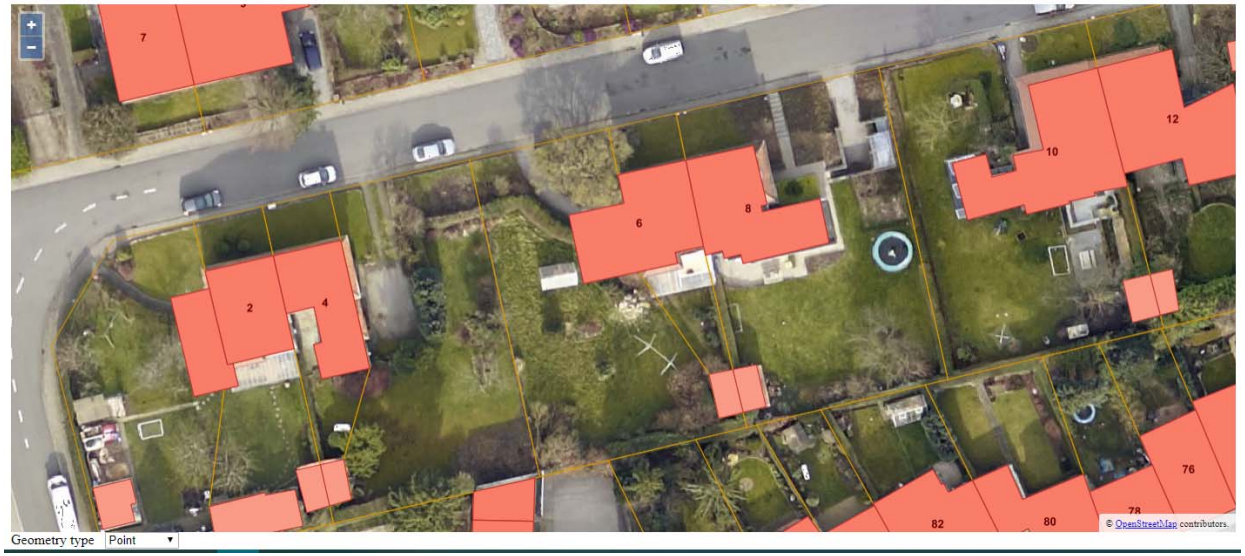
Original map	Crowdsourced map
hard surfaces	impermeable pavement
	pebble-stones
	woodchips
water	swimming pool
	pool with plants
grass	lawn
low vegetation (<6m)	vegetable garden
	flowers
	shrubs
	hedges
high vegetation (>6m)	deciduous trees
	fruit trees
	conifers

Questionnaire with sliders



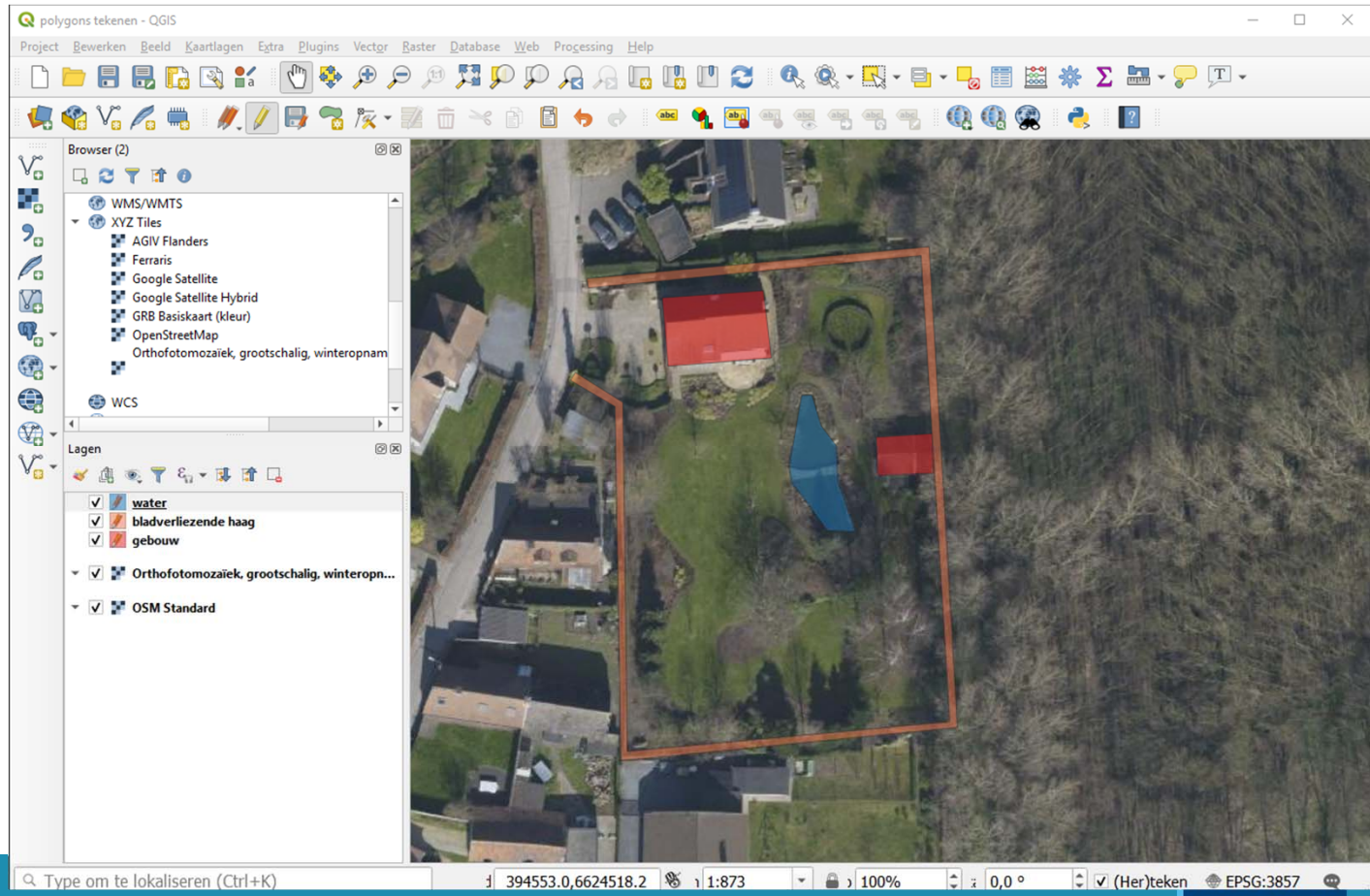
Online mapping of gardens (OpenLayers)

- Prototype (under development)
  - Background map:
    - Aerial photo
    - Plot boundaries
    - Buildings
  - Draw polygons of every land cover and calculate area
  - Store in database



Mapping by students (age 16-18) in QGIS

- Draw polygons in QQIS (open source GIS-software) for a class assignment
- In the context of STEM-lesson modules



Overview mapping methods via crowdsourcing

Explanation	Draw polygons	Technology	Background map	Who maps
Questionnaire with sliders to ask % of land cover in garden	no	Questionnaire	No	General public
Webmodule to draw garden polygons	yes	OpenLayers	Orthofotos	Advanced general public
STEM-package lessons for high school	yes	QGIS	Orthofotos	Students age 16-18