Effective citizen participation in eradication of invasive alien plant species

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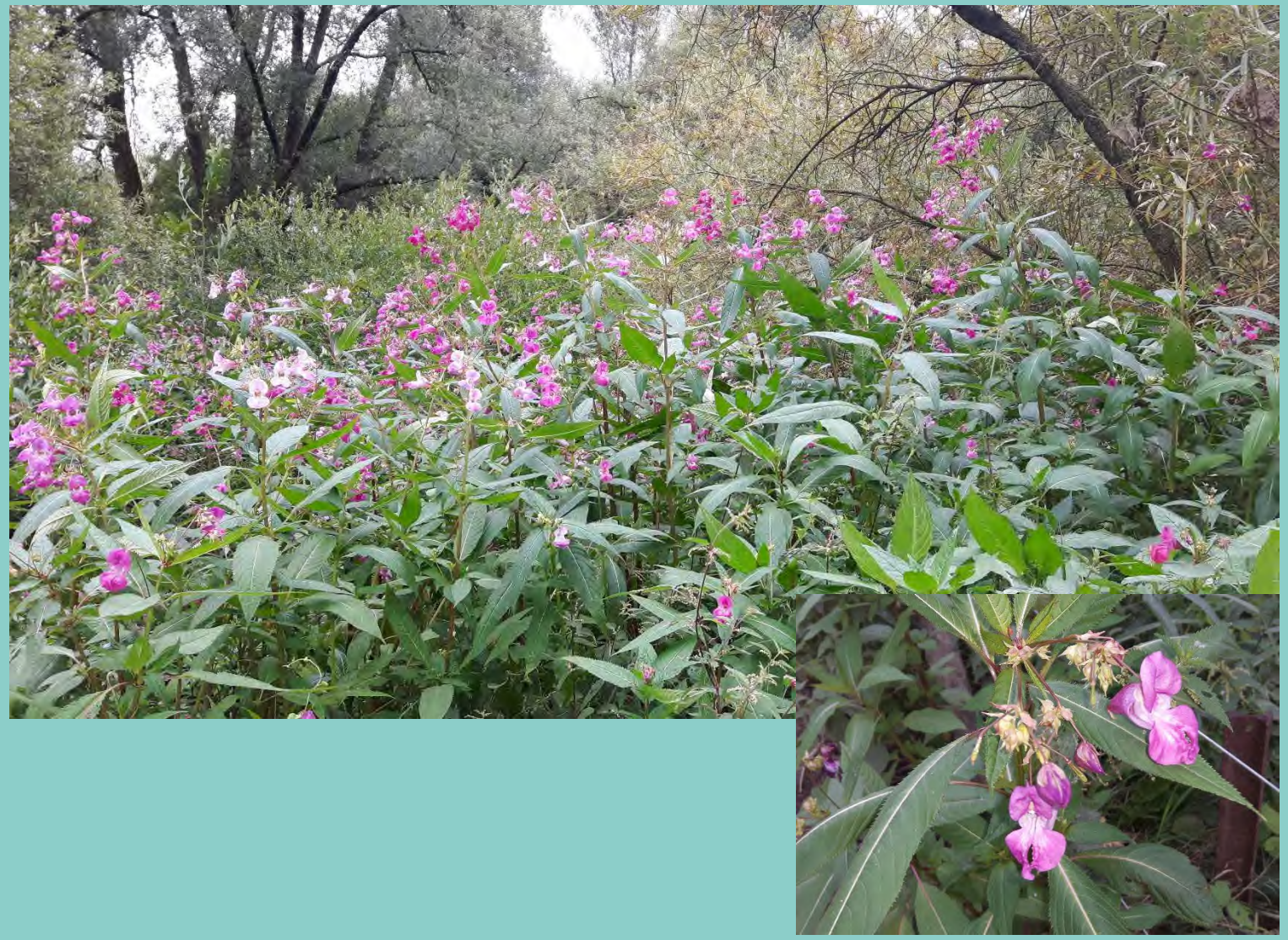


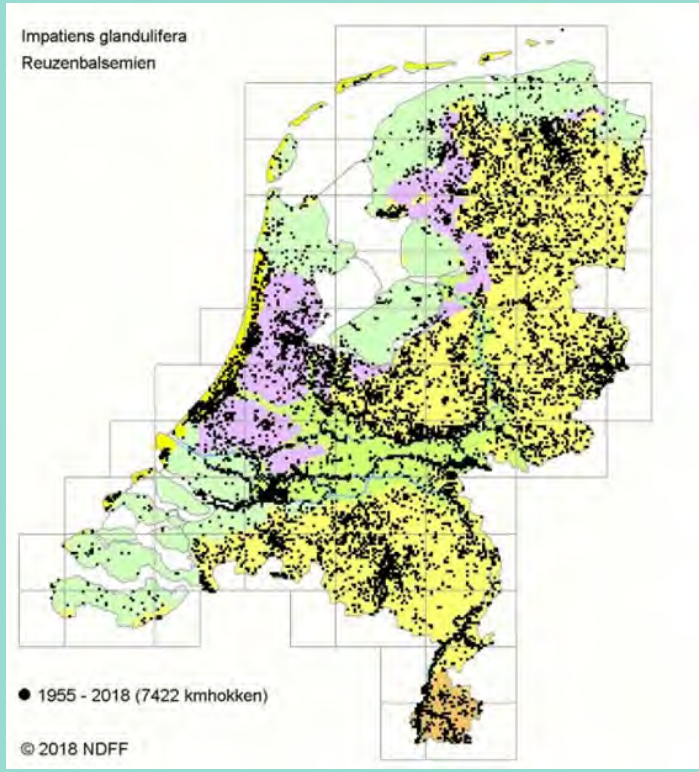
Problem statement

- EU Directive on prevention and management of invasive alien species (2014).
- List of IAS of EU concern (since 2019: 66 species)
- Member states must combat these species
  - ✓ Preventive measures
  - ✓ Surveillance and rapid eradication
  - ✓ Containment and population control
- Himalayan balsam listed at the Union-list in 2017

Problem statement

Himalayan balsam (*Impatiens glandulifera*)

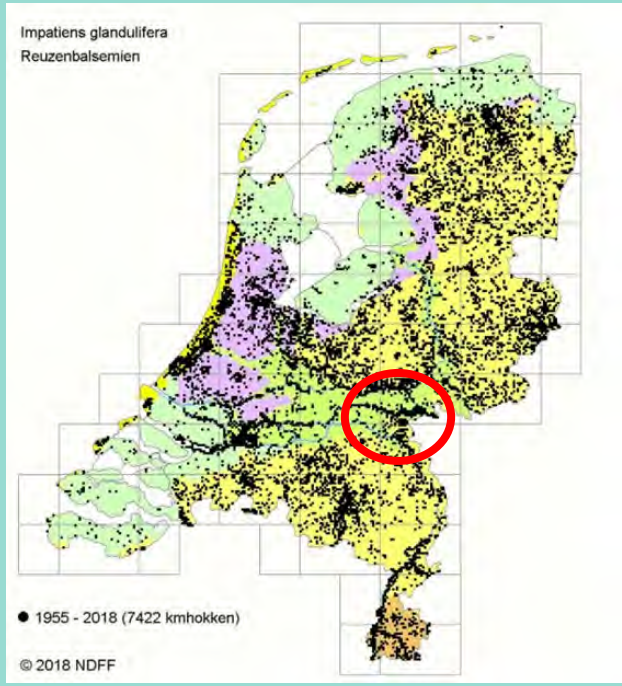
- High seed production
- Spreads rapidly (distribution 1955 – 2018)
- Dispersal by water flow



High impact on aquatic and riparian biodiversity and ecosystems

- Out-competes native species along river banks, floodplain forests and wet meadows
- Die back of extensive stands in winter can leave river banks bare and exposed to erosion
- Reduce bank stability

Problem statement



- Himalayan balsam is widely spread
- High management costs
- Citizen participation in management of IAS
  - ✓ Citizens as observers, restorers and narrators:

    Surveys, prevention, eradication/control, raising awareness etc.
  - ✓ Reduction of management costs
  - ✓ Increase of public support for measures

Case study

Eradication of Himalayan balsam with citizens (volunteers) in Nijmegen

Goals of the project

- To evaluate the effectivity of an eradication campaign with citizens
- To develop tools for effective citizen participation

Reasoning for HB

- Easy to remove (annual plant, shallow roots)
- Non allergic or toxic for humans
- Short living seed bank (2 to 3 years)

How?

Five steps approach

1. Outline of the campaign
2. Recruitment and instruction of volunteers
3. Four days participative eradication campaign
4. Experiment on enhancement of native species competition
5. Evaluation by participants

Nijmegen = European Green Capital 2018

Four days participative eradication campaign

‘Weed, weeding, extirpated!’

1. Inform
2. Inventory
3. Eradication
4. Follow-up inspection

Four days *is a wink to the 'vierdaagse' in Nijmegen:*

The Walk of the World

Day 1: Information meeting

Sharing the goals, knowledge and urgency for eradication

Day 2: Inventory

- Sharing identification guides, instructions for plant surveys, roadmaps based on National Data of Flora and Fauna (NDFF)
- Entire area of concern for spread of Himalayan balsam

Day 3: Eradication campaign

- Instruction
- Removal by hand
- Three core areas
- Total area = 23000 m^2

Day 4: Follow up inspection

One month later

Harvest at the end of day 3 … to much ;-)

Results of eradication

Year	Month	Involved number of volunteers	Total working hours	Number of plants	Number of plants/ working hour
2018	June	37	126	22500*	178.6
2018	July	10	20	55	2.8
2019	August	6	10	81	8.1

*: Estimation

→ At one location serious re-infestation from neighboring areas

→ Not allowed to visit and to eradicate IAS on private properties

Experiment

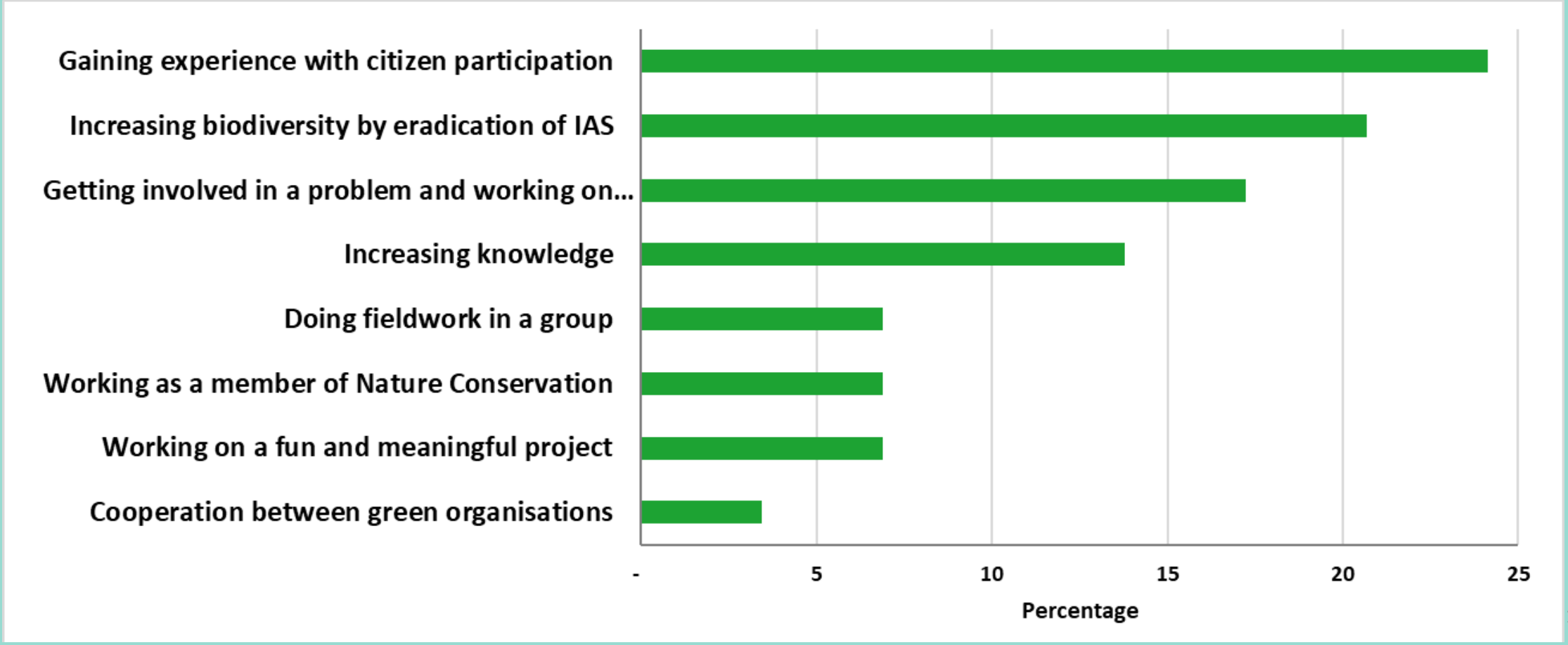
Hypothesis: Addition of native species reduces germination and growth of HB (biotic resistance)

Method: 18 plots of 4 m^2 -> 9 plots with and 9 plots without seeds of native species

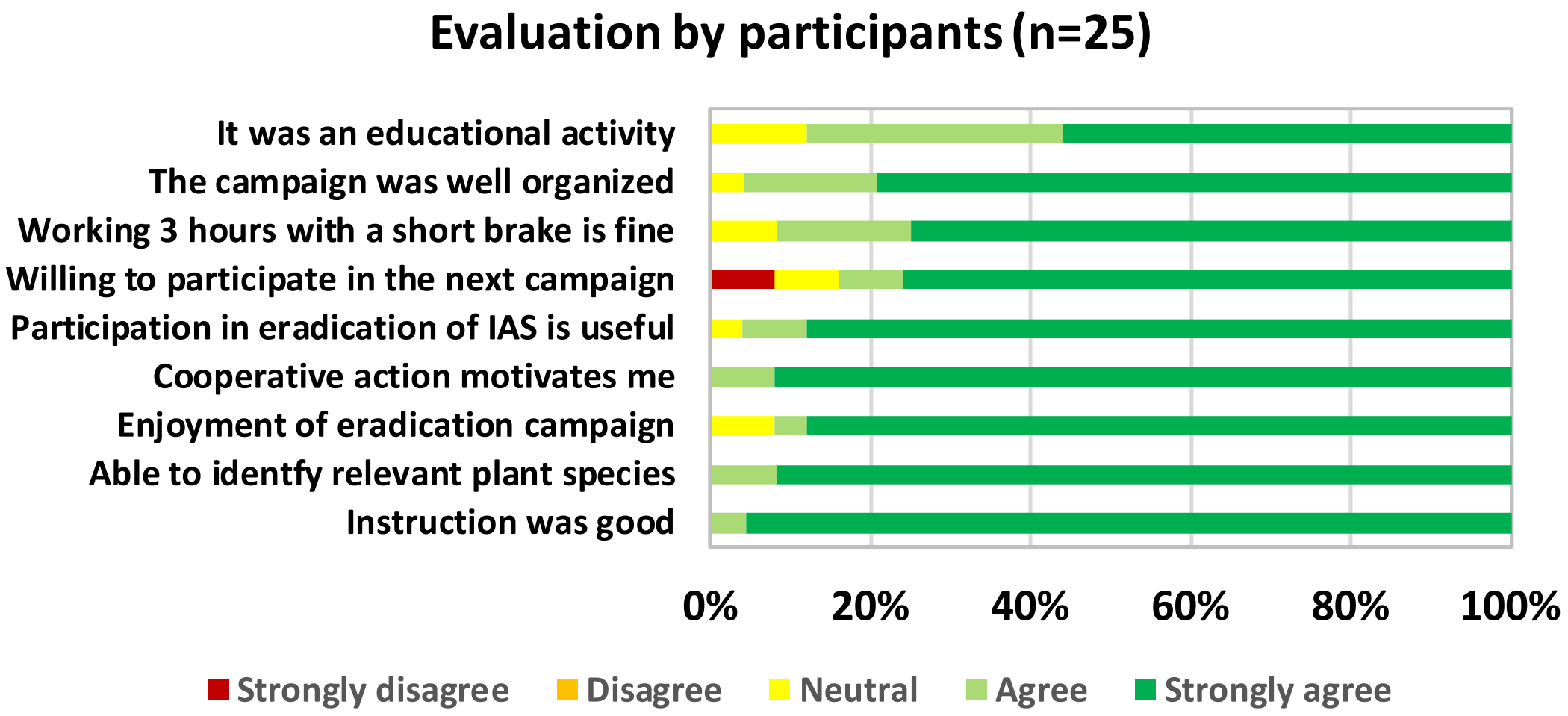
Results: Number of HB seedlings was similar in plots with seeds and the control plots (resp. 1 ± 1,1 *vs* 1 ± 0,8)

Conclusion: The germination and growth of HB was not suppressed by native species

Motives of 29 volunteers to participate



After eradication



Conclusions

1. Citizen participation in eradication of HB is effective
2. Our approach and tools for effective involvement of volunteers can also be used to control other invasive plant species
3. Communication and involvement of landowners and real estate managers is neccesairy
4. Involvement of governmental representatives and local stakeholders is essential
5. Coordination and input of (practical) knowledge by experts is a pre-requisite for effective eradication of IAS

Follow up

- Intensive communication and involvement of landowners and real estate managers
- Continuous surveillance by citizens and professionals
- Establish citizen brigades for rapid eradication
- Appointment of an experience project coordinator

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- Dutch Food and Consumer Safety Authority (NVWA)
- Radboud University, Nijmegen

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Thanks for your attention!