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Cadastre and the crowd: a brief encounter or a long-lasting marriage?

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Cadastral and Crowdsourcing

Definition Oxford dictionary of crowdsourcing:

The practice of obtaining information or input into a task or project by enlisting the services of a large number of people, either paid or unpaid, typically via the Internet.

So what will the future of cadastral in combination with crowd sourcing look like with a focus on the European context?

National Bird Count



HOME

RESULTATEN

IN MIJN BUURT

HOE WERKT HET

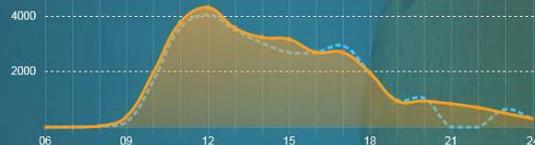
De Nationale Tuinvogeltelling 2017 vond plaats op 28 en 29 januari. Zet de data van 2018 alvast in uw agenda: 27 en 28 januari!

[BEKIJK RESULTATEN](#)

Hoe druk was het?

Aantal tellers per uur

← Zondag 29-01 →



Without community and crowd
no (public) data

46.226

Tellingen

61.298

Deelnemers

946.475

Vogels geteld

Top 10 - NEDERLAND

Klik op een vogel in de Top-10 om hiervan de concentraties in Nederland te zien



1
Huisemus
158.386

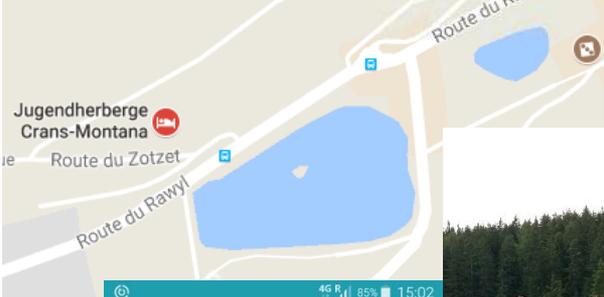


2
Koolmees
97.165



3
Merel
95.525

Contributor to or participant in a platform



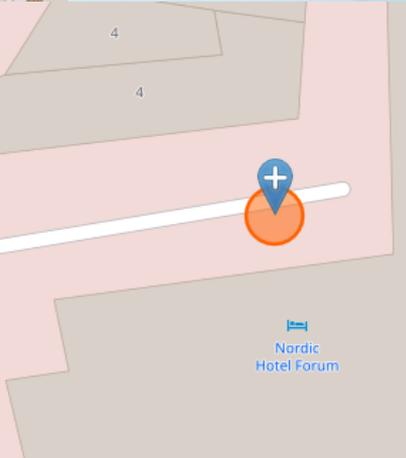
Laat mensen zien wat ze kunnen verwachten bij een bezoek aan

Jugendherberge Crans-Montana

Voeg foto's toe van deze plek om duizenden mensen op Google Zoeken en Maps te helpen

EEN FOTO MAKEN

TOEVOEGEN UIT GALERIJ



OpenStreetMap



From community to institution



Friedrich Wilhelm Raiffeisen



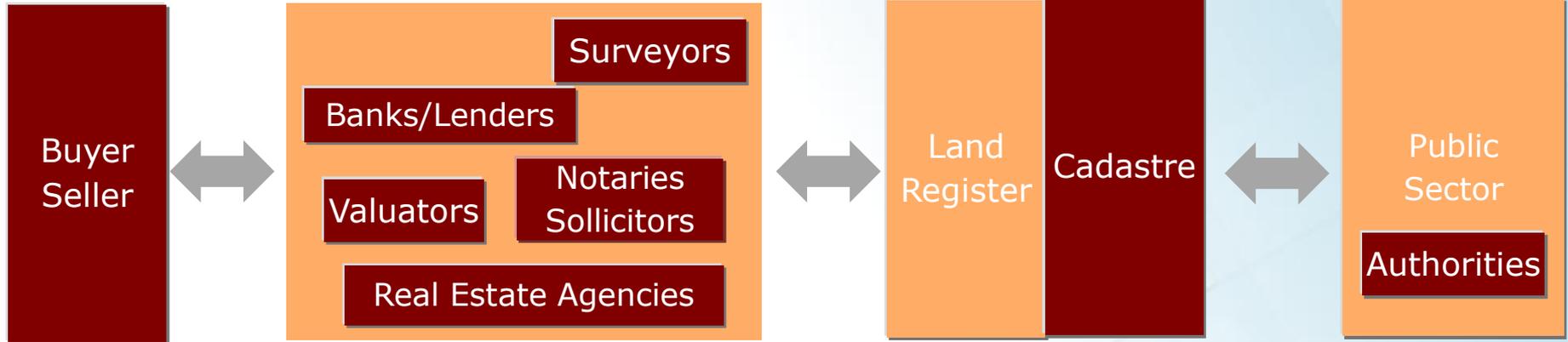
From a community of farmers to the largest financial institution in the Netherlands



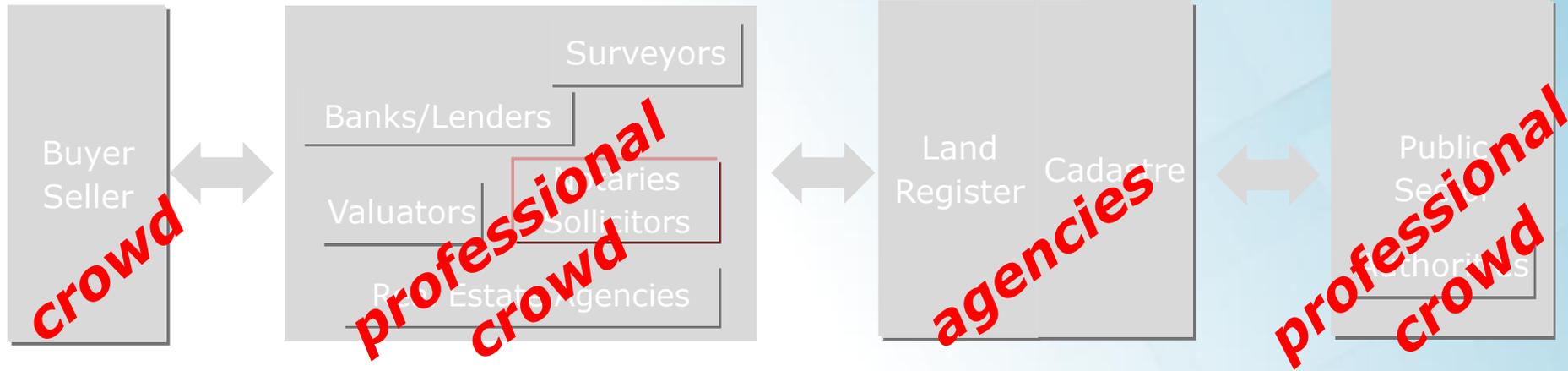
Ecosystem of the Land Market

private sector

public sector



From institutions to communities to crowd?



Crowd ↔ **Legitimacy** ↔ **Institutions**



Improving maps with the crowd

Users can report errors in our maps providing feedback on the map itself. Earlier feedback and status of actions undertaken are visible on-line

<https://www.verbeterdekaart.nl/>



Example of a feedback report

Melding BRT00003134

Gemeld op: TOP10

Geregistreerd op: 23-11-2016 21:10

Status: Goedgekeurd, ingepland door bronhouder

Omschrijving: school gesloopt na brand

Bronhouder: Kadaster

Gewijzigd op: 23-01-2017 08:27

Toelichting bronhouder: Bebouwing zal worden aangepast met fotobeeld 2016, in release R2_februari_2017



The screenshot shows the Kadaster website interface. At the top, the logo and the slogan "Verbeter de kaart" are visible. A button labeled "MELDING MAKEN VOOR TOP100" is in the top right. The main content is a map of the Amersfoort region. A pop-up window titled "Melding BRT00003134" is open over the map, displaying the following information:

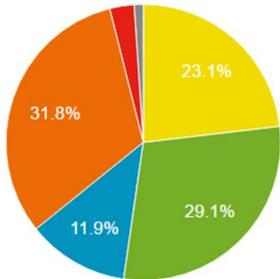
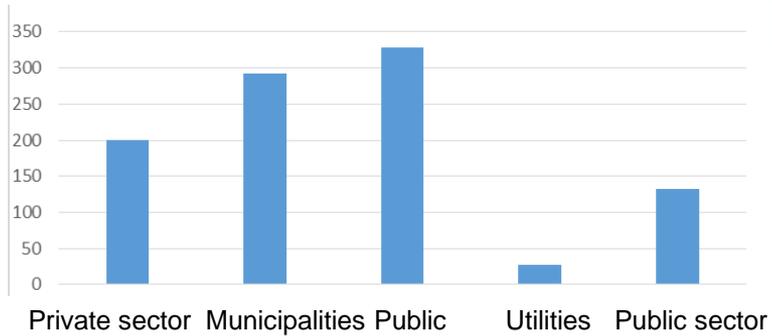
- Melding BRT00003134**
- Gemeld op:** TOP10
- Geregistreerd op:** 23-11-2016 21:10
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- Bronhouder:** Kadaster
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The map shows various locations including Baarn, Zeldert, AMERSFOORT, Soest, Hoogland, De Birk, Soestduinen, Oud-Leusden, Leusden, Stouterburg Noord, and Hoewelaken. A "Toon legenda" button is visible in the top right of the map area.

Results of reporting of errors by users 31-07-2017

Large scale Basemap

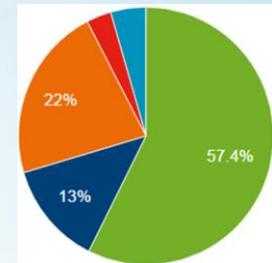
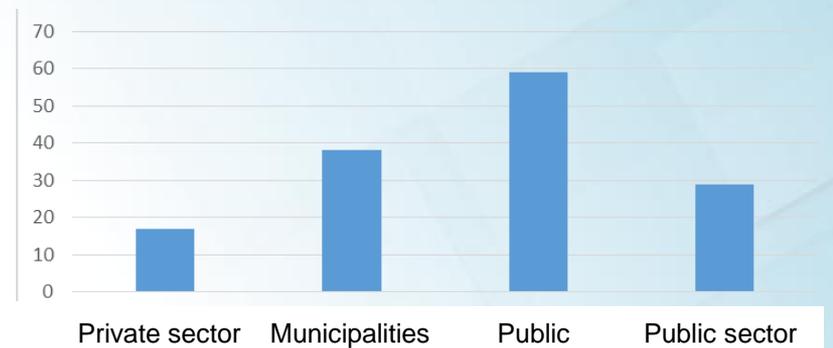
Feedback reports: 3138; reporters: 979



- Rejected
- Finalized
- Correct
- Under investigation
- New
- Rerouted to other key register

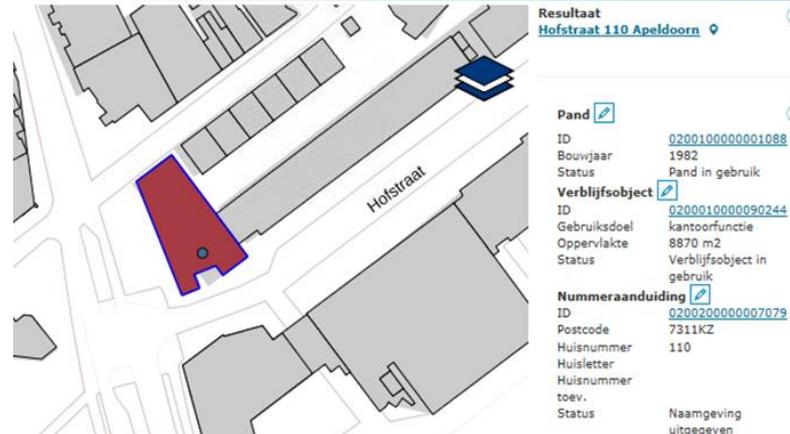
Topographic map

Feedback reports: 354; reporters: 143



Experiences so far

- (Professional) Crowd is willing to report back
General public is the most active reporter!
- Providing feedback to users on the corrections applied is critical
for users' motivation to keep on reporting errors
This is our challenge in the value chain!
- Feedback mechanism is also introduced November 1
for Building and Addresses



Professional crowd: preliminary boundaries

Notaries draw preliminary cadastral boundaries

The cadastral surveyor verifies and measures the boundary after transfer of the property



Involving communities in reallocation

Flexible and fast
High level of participation
High end technological support



Wensregistratie

Alternatief 1: Wens per perceel opgeven

Uw percelen:
Perceelnummer: Huisnum. Raaijen
EZ000A 0058600000

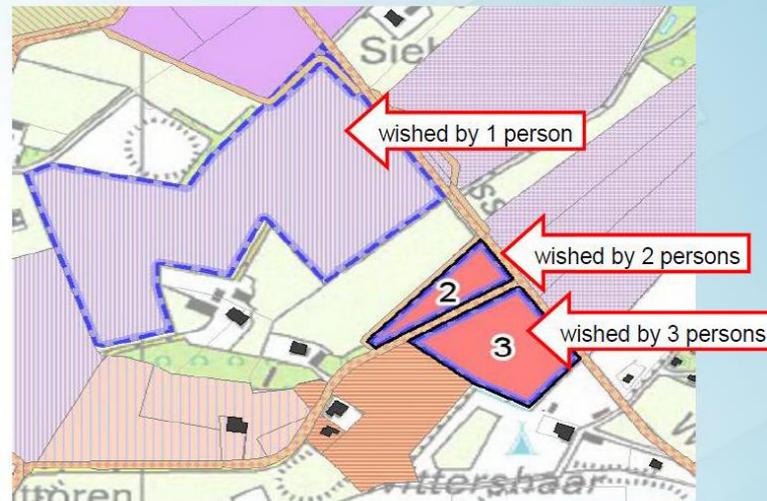
Nieuw genereren percelen:
Perceelnummer: F7000A 0011500000

Aanpassen (deel)perceel tekenen
Korte toelichting op uw keuze:

Legend:
- Groen: Eigenwoning
- Geel: Gemeentelijk perceel
- Rood: Perceel in bestemming
- Blauw: Dijkwal

Map showing a street layout with a highlighted parcel. Buttons: 'Perceel opgeven', 'Perceel bevoegen'.

Stap 1: Klik van uw huidige percelen welke u wilt houden en welke u wilt laten.
Stap 2: Klik in de kaart om een nieuw perceel te selecteren.
Overig: Klik in de nieuwe percelenlijst op 'X' om een nieuw perceel te verwijderen uit uw kaart. Klik 'Aanpassen' (deelt)perceel tekenen' om een (deel)perceel te tekenen.



Intermediate observations

- Our value chain is very institutional
- Professional crowd is a logical starting point
- Rules of engagement provide clarity and trust and empower the crowd and communities
- New functionalities: consider the crowd as a potential solution

Could parties in the land market do a cadastral survey?

Why not?



Personal and object information

GDPR (general data protection regulation): privacy



pdp PERSONAL DATA PROTECTION COMMISSION SINGAPORE



Intelligent objects

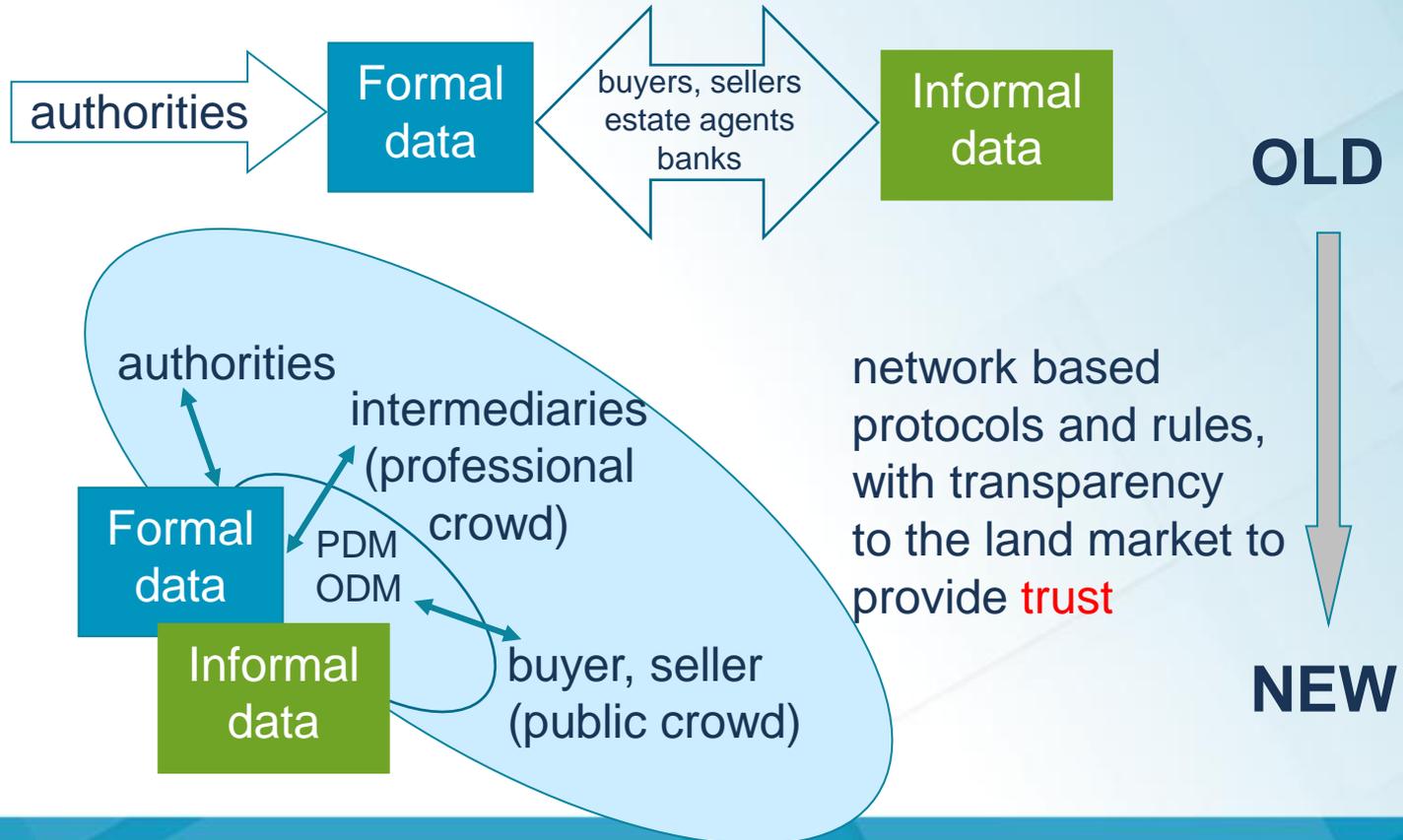


How do we organise

- Personal Data Management
- Object Data Management

Participatory Approach requires sharing of data

All parties become participatory wrt data



Concluding remarks

- All parties in the land market are digitally enabled
- Institutional arrangements are useful, yet classical means to provide a secure land market.
- Digitalisation enables innovation and process redesign between partners in the chain and involving the crowd
- This also requires rules of engagement and sharing mechanisms to maintain trust between all parties. Take care of legality and legitimacy!

Then a first brief encounter of the cadastre with the crowd may be the start of a long-lasting marriage!