

*kadaster*



# Smart World - Smart People

Crowdsourcing in the  
Dutch Kadaster

Daphne Bol, Magdalena Grus

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# Content:

- ➔ A brief introduction
- ➔ Crowdsourcing, community sourcing
- ➔ Crowdsourcing in Kadaster

# Kadaster: a brief introduction

Kadaster: the Netherlands' Cadastre, Land Registry and Mapping Agency



Who we are, what we do  
and why we do it?

# Kadaster services



# Crowdsourcing, community sourcing

## Networked society



Changes in society – impact on our product, services and relation with partners and users

(Technology, User interaction, Web-based working processes, eGovernment, Open data)



Global information infrastructures

(Apple, Google, Facebook)



We moved towards sharing and opening



Thinking and operating from the user's view and demands

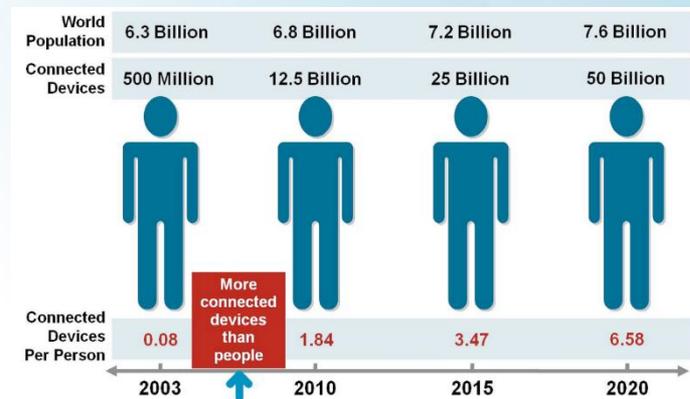


Figure: The number of connected devices (source: Cisco IBSG: April 2011)

# Crowdsourcing in Kadaster



Pilot: Border Landmarks

Pilot: User's feedback system BRT



Land registration in Colombia

Forests paths



# Crowdsourcing in Kadaster



## Border Landmarks



Check if “crowdsourcing” can be used to control the border landmarks between the Netherlands and Germany



### **Kadaster**

Publishing the border landmarks with coordinates (searching via GPS)

### **Crowd**

Giving the feedback via Smartphone / Website

### **Kadaster**

Publishing the intended actions



# Crowdsourcing in Kadaster

## Land registration in Colombia

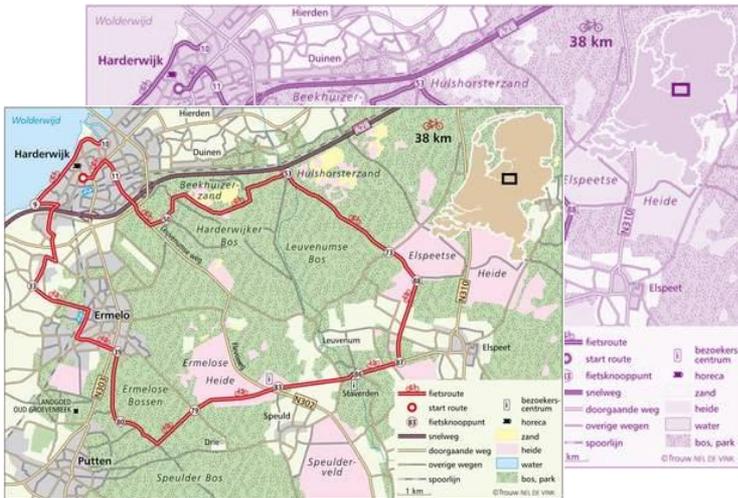
- ➔ Many small farmers are not able to prove in writing that they own a specific piece of land.
- ➔ parcel boundaries measurement by means of app on the mobile phone.
- ➔ a substantial cost reduction for the Colombian government.



# Crowdsourcing in Kadaster

## The forest paths project

➔ The National Dutch Forest Organisation (Staatsbosbeheer) are responsible for data on forests



Crowdsourcing to update the National Dutch Forest Organisation data.



The local forest rangers have since updated their digital files on forest paths in their region.



Kadaster is researching how to implement this method in the rest of the forests area in the Netherlands.

# Crowdsourcing in Kadaster

Crowdsourcing as a part of education program



# Where did it start?



- The wish for more detailed maps specified for the emergency services
- Higher actuality of data

*Data from the crowd as a solution?*

# Challenges in crowd data...

How do we motivate the crowd?

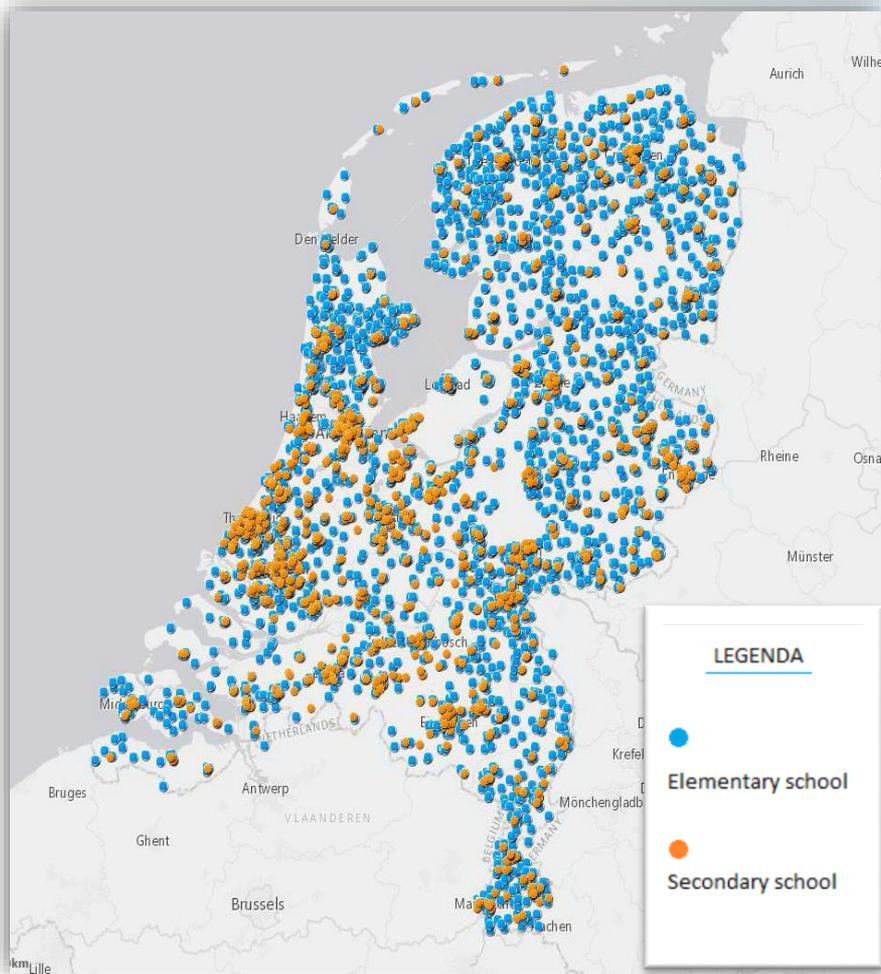
National coverage?

WHAT IS THE DATA QUALITY?

Uniformity?!

Continuity in data delivery?

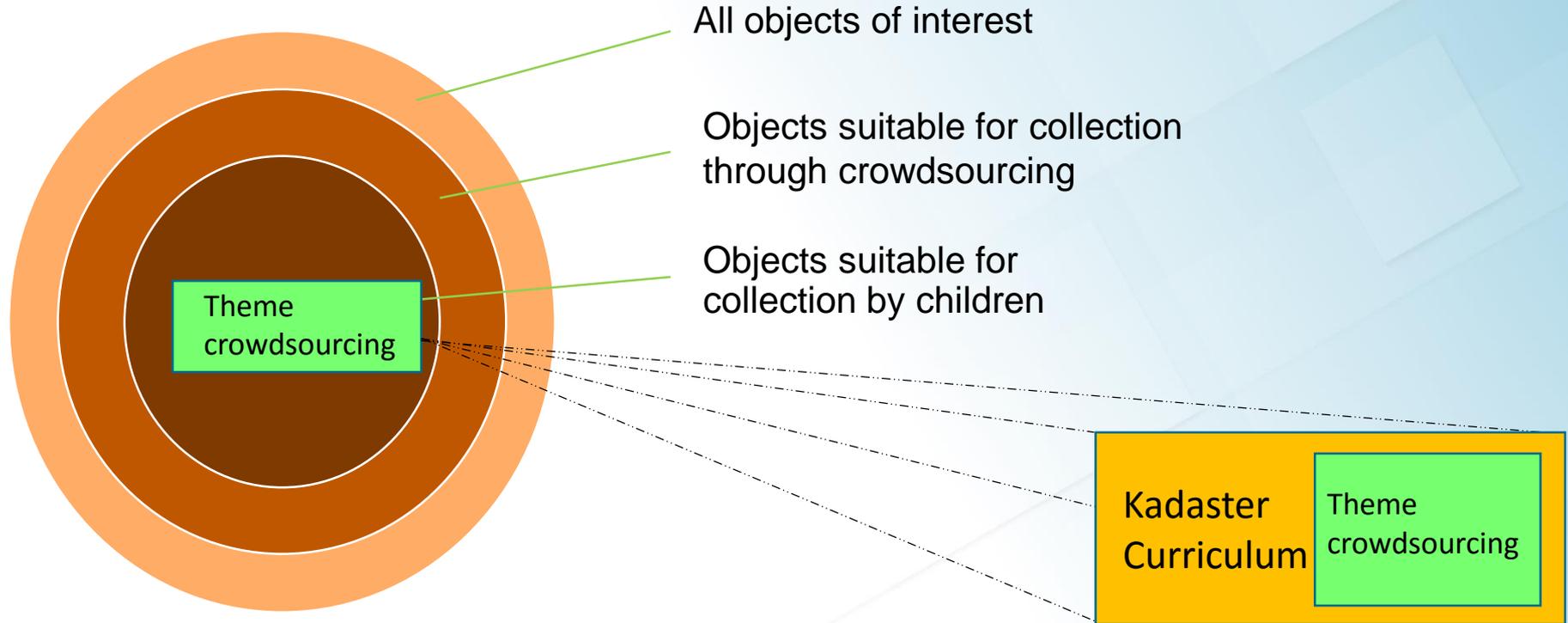
# National coverage!



7000 primary schools  
660 secondary schools

(Source: Dutch Statistic Institut, 2011)

# Steps taken to develop the curriculum



# Kadaster curriculum



home | over het kadaster | pers | english | woordenboek | webwinkel | **inloggen zakelijk**

Particulier

Zakelijk

Nieuws

Contact



home » pagina

## Lespakket Kadaster

### Over het lespakket van het Kadaster

Hallo allemaal! Leuk dat jullie met ons aan de slag gaan. Door het maken van leuke opdrachten en het bekijken van filmpjes leren jullie wat het Kadaster allemaal doet. Maar jullie gaan ook de brandweer, politie en de ambulance helpen zodat Nederland nóg veiliger wordt.

Klik rechts op één van de lesmodules.

### Lesmodule 1: Wat doet het Kadaster?



➔ Naar lesmodule 1

### Lesmodule 2: Help de hulpdiensten!



➔ Naar lesmodule 2

### School Crowd

Zet de belangrijke objecten op de kaart



# School visits



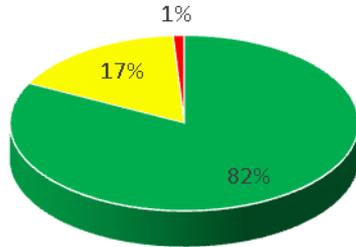
**KADASTER**  
INNOVATIE & DIGITALE

- \* WAT DOET HET KADASTER?
- \* WAT IS CROWDSOURCING?
- \* INFORMATIE VOOR DE HULPDIENST
- \* AAN DE SLAG!
- \* EVALUATIE

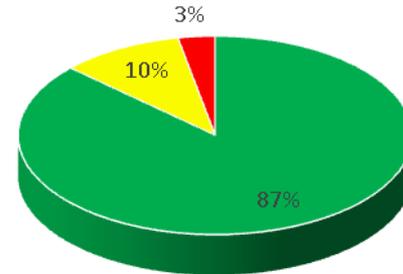


# Results evaluation form

What did you think of the Kadaster curriculum in general?



Would you like to add new objects to the map in the future?



# Results data quality

## Method 1

Method: all children at one digiboard

Quality: 100%

+: data is checked by all children and teacher

-: one child at the time at the digiboard

## Method 2

Method: Children in groups of 2/3 per computer (groups do not see pointed objects by other groups!)

Quality: many groups pointed the same objects on the map. This suggests a high accuracy.

+: all children work with maps

-: doubts about quality of single points

## What does these results mean?

1. If Kadaster wants to make sure that the collected objects are in the right place, the data have to be checked by the topograph → time consuming
2. If client is satisfied with non-guaranteed quality of the datalayer the data can be provide to the specific client
3. Combination of above two: data will provided temporarily without quality stamp of Kadaster. In the mean time Kadaster checks the data and provide checked data at a later moment.

**Question?**