

Big Data in Agrifood

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FOOD & BIOBASED RESEARCH
WAGENINGEN UR



VRJIE
UNIVERSITEIT
AMSTERDAM

(Big) data in agrifood

- Keten
- Beleid
- Consument
- Onderzoek



Het etiket

productinfo

Etiket Voorbeeld

Maatjesharing
Inhoud: 2 stuks met uitjes
Handgefileerd
Rijk aan Omega 3 vetzuren

Per portie (65 g):

329 kJ 79 kcal	vet 8,6 g	verz. vet 2,0 g	suikers 0,3 g	zout 1,25 g
6%*	12%*	10%*	<1%*	20%*

Per 100 g: 810 kJ / 194 kcal
* referentie-inname van een gemiddelde volwassene (8400 kJ/2000 kcal)

Ingrediënten: Haring, zout, ui
Allergenen: vis
Vangstgebied: FAO 27 Noord Oostelijk deel Atlantische oceaan (m.u.v. Oostzee)
Dit product is volgens de milieunormen voor duurzame visserij van de MSC gevangen. SGS-NL-MSC-C-0000
Verpakt onder beschermende atmosfeer
Gekoeld bewaren bij +2 °C tot +7 °C
Ingevoeren op: 01-06-12
Te gebruiken tot: 10-10-12

Gemiddelde voedingswaarden

	Per 100 g	1 portie (65 g)
Energie	810kJ/194kcal	529kJ/126kcal
Vet, waarvan	13,3 g	8,6 g
verzadigd	3,0 g	2,0 g
enkelvoudig onverzadigd	5,1 g	3,3 g
meenvoudig onverzadigd	1,8 g	1,2 g
Koolhydraten, waarvan	0,5 g	0,3 g
Suikers	0,4 g	0,3 g
Polyolen	0 g	0 g
Zetmeel	0 g	0 g
Vezels	1,6 g	1,0 g
Eiwitten	18,5 g	12,0 g
Zout	1,95 g	1,25 g
Omega 3 vetzuren totaal	1,5 g	0,98 g
waarvan EPA + DHA	1080 mg	700 mg

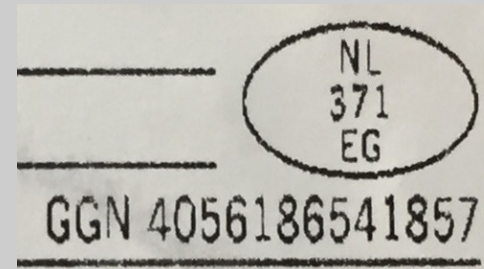
Verpakking bevat 2 stuks maatjesharing (2 porties)
1 portie is 65 g

L11478336

Janssen B.V.
Postbus 626 2345 LM
Hoofddorp, Nederland

1234 5678

herkomstinfo



certificeringsinfo



traceringsinfo

Herkomst: Batchcode 419396615E
 geboren in: Nederland
 gemest in: Nederland
 geslacht in: Nederland (NL 367)
 uitgesneden in: Nederland 371/Nederland (NL 82)

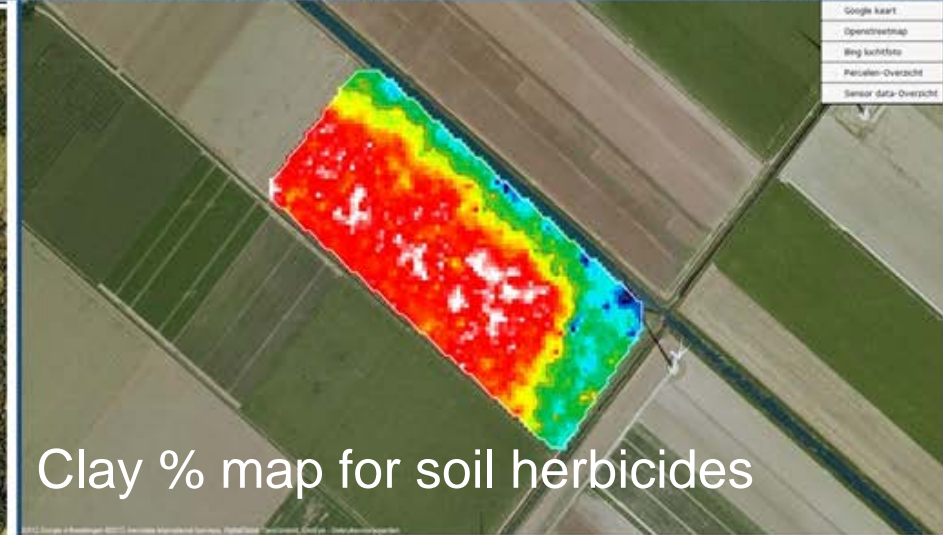
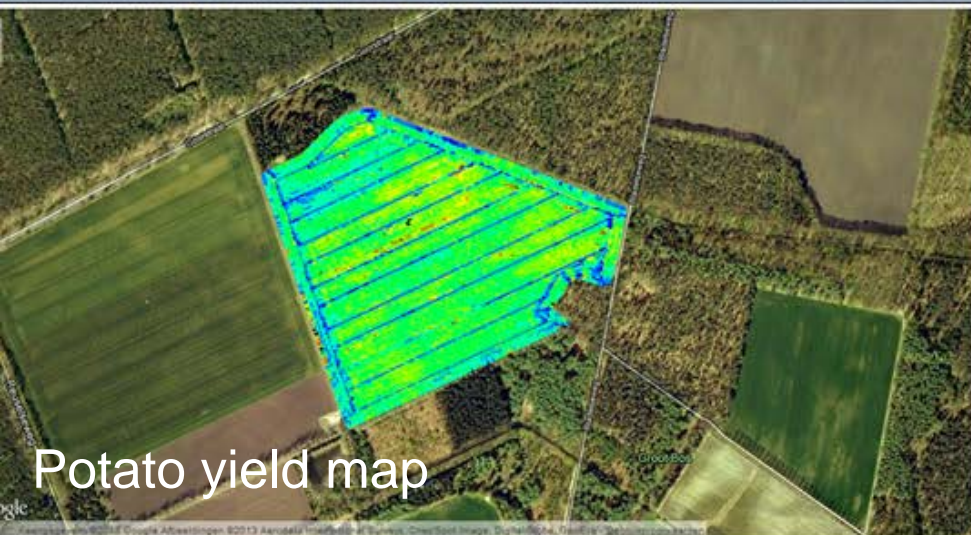
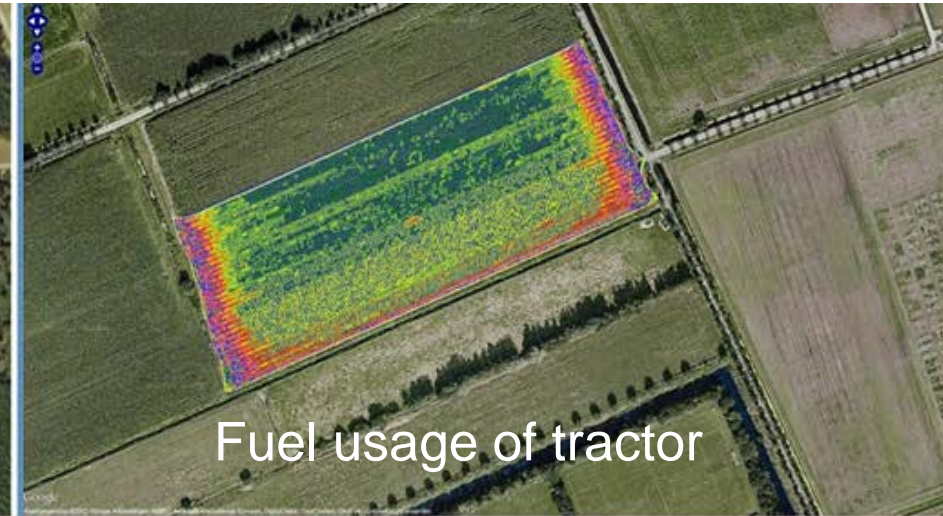
Bei unter +4 °C mindestens haltbar bis:

10.10.10
99999999.00 12.34

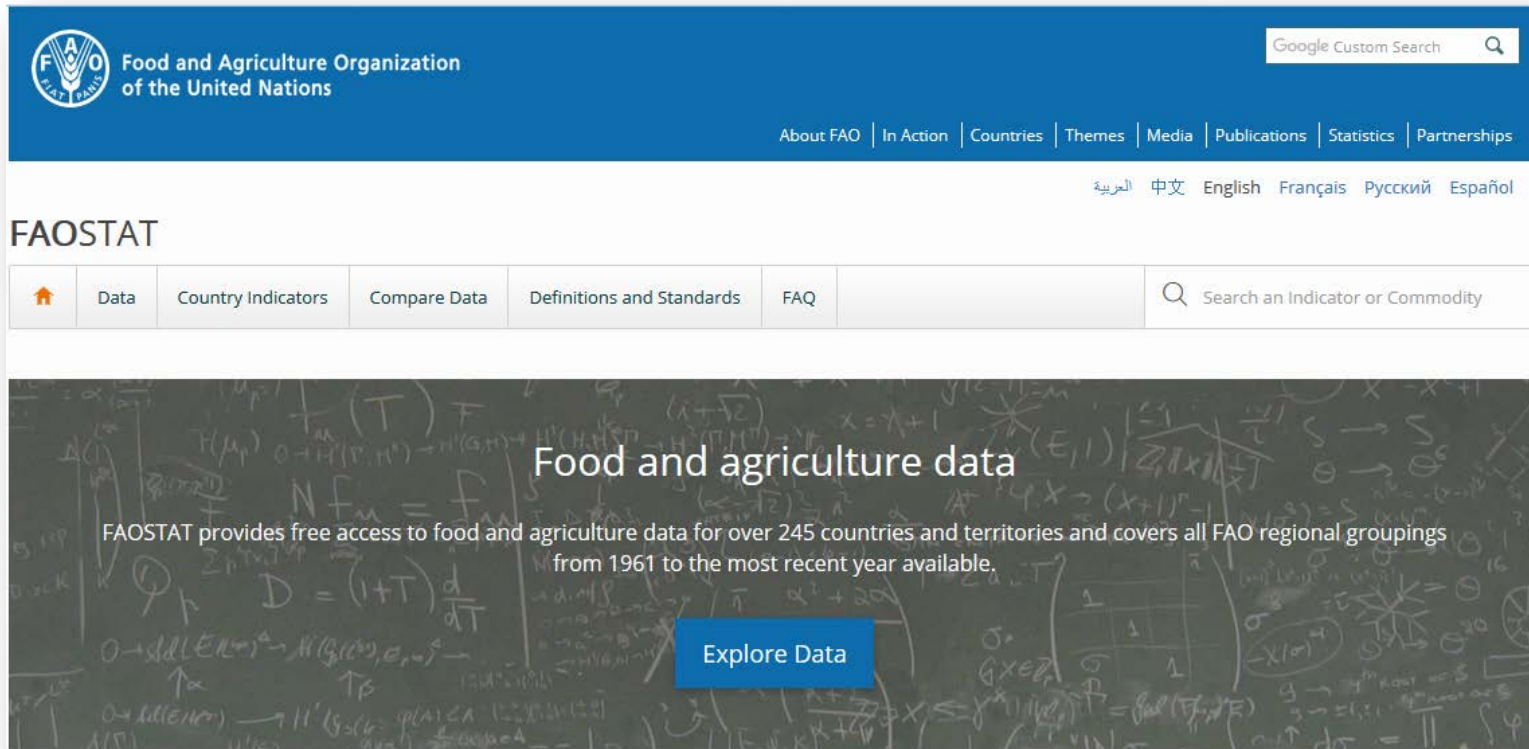
Einwaage: 400g e

fTRACE

Data in de keten: precisielandbouw



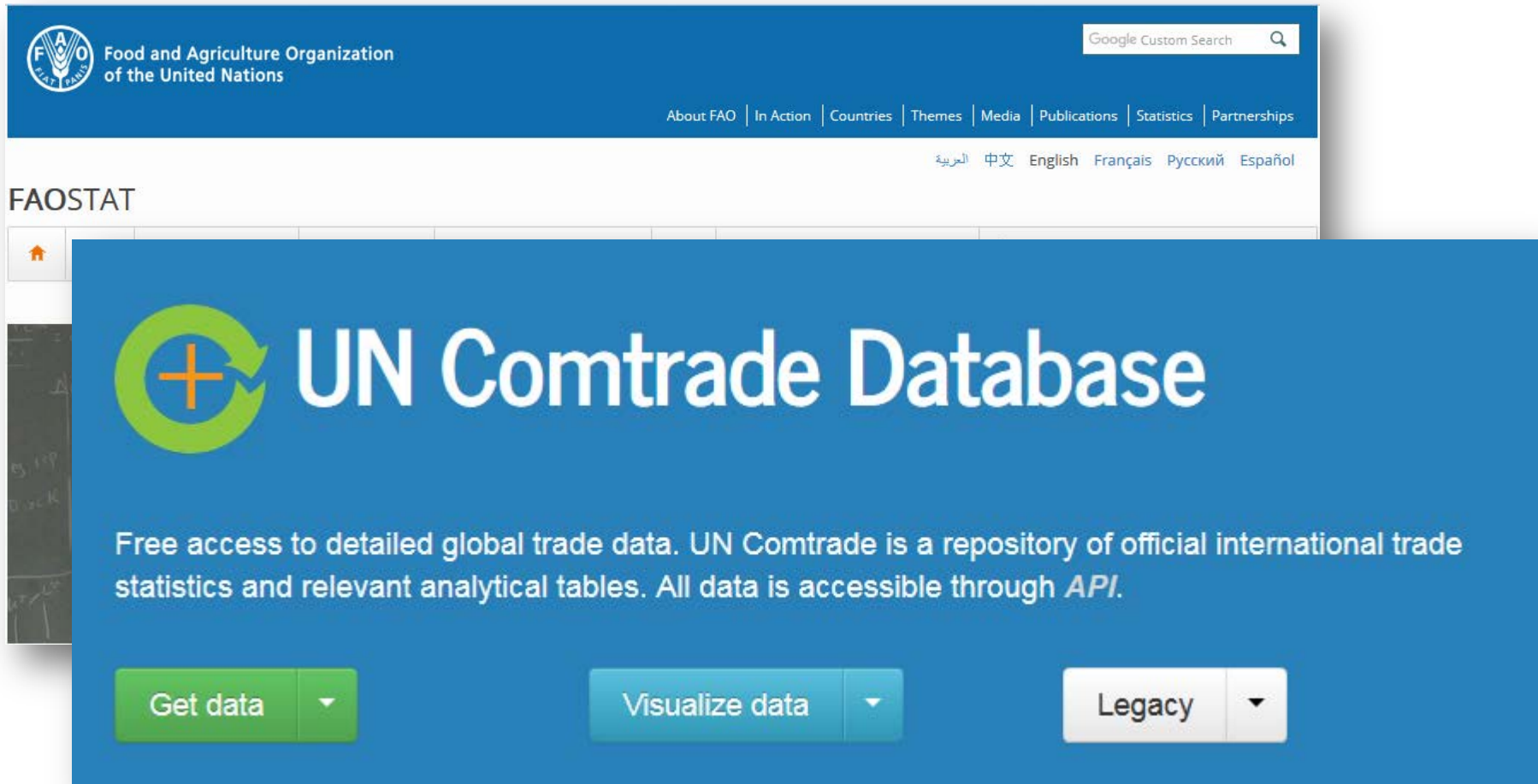
Beleidsstudies – Integrated Assessment Models



The screenshot shows the FAO FAOSTAT website. At the top left is the FAO logo and the text "Food and Agriculture Organization of the United Nations". To the right is a "Google Custom Search" box. Below this is a navigation bar with links for "About FAO", "In Action", "Countries", "Themes", "Media", "Publications", "Statistics", and "Partnerships". Further right are language options: العربية, 中文, English, Français, Русский, and Español. The main heading "FAOSTAT" is followed by a menu with "Data", "Country Indicators", "Compare Data", "Definitions and Standards", and "FAQ". A search bar on the right says "Search an Indicator or Commodity". The main content area features a dark background with mathematical formulas and the text: "Food and agriculture data" and "FAOSTAT provides free access to food and agriculture data for over 245 countries and territories and covers all FAO regional groupings from 1961 to the most recent year available." A blue "Explore Data" button is centered below the text.



Beleidsstudies – Integrated Assessment Models

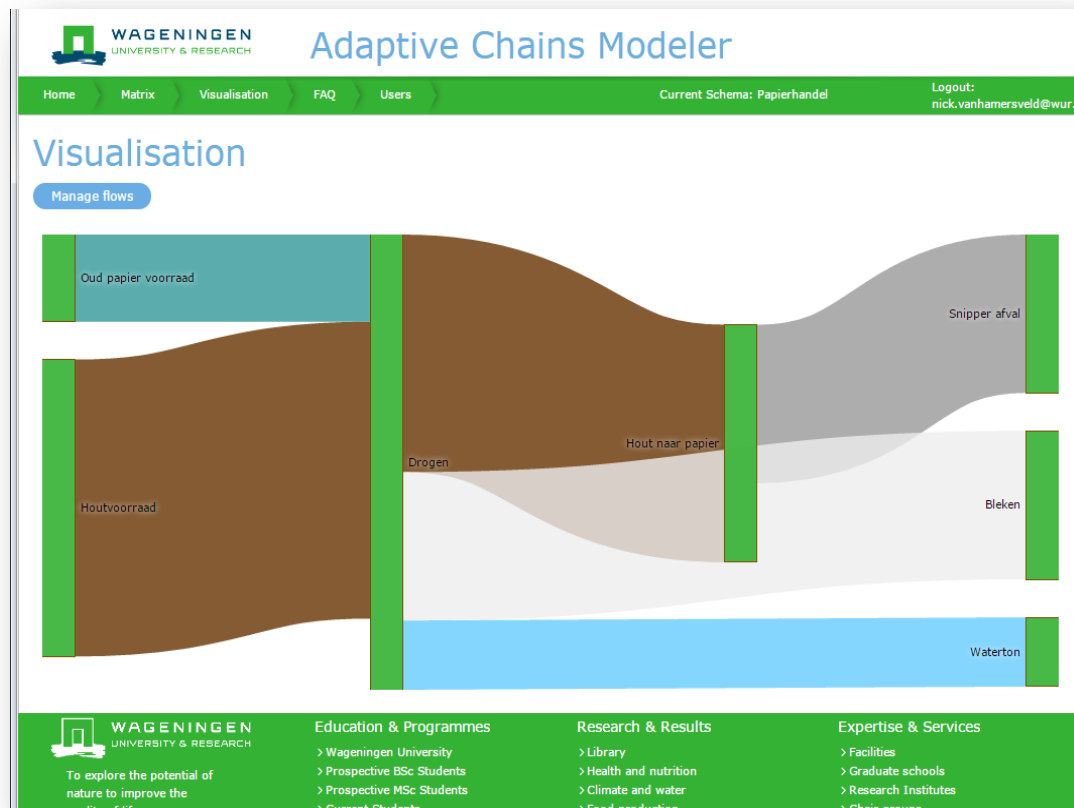


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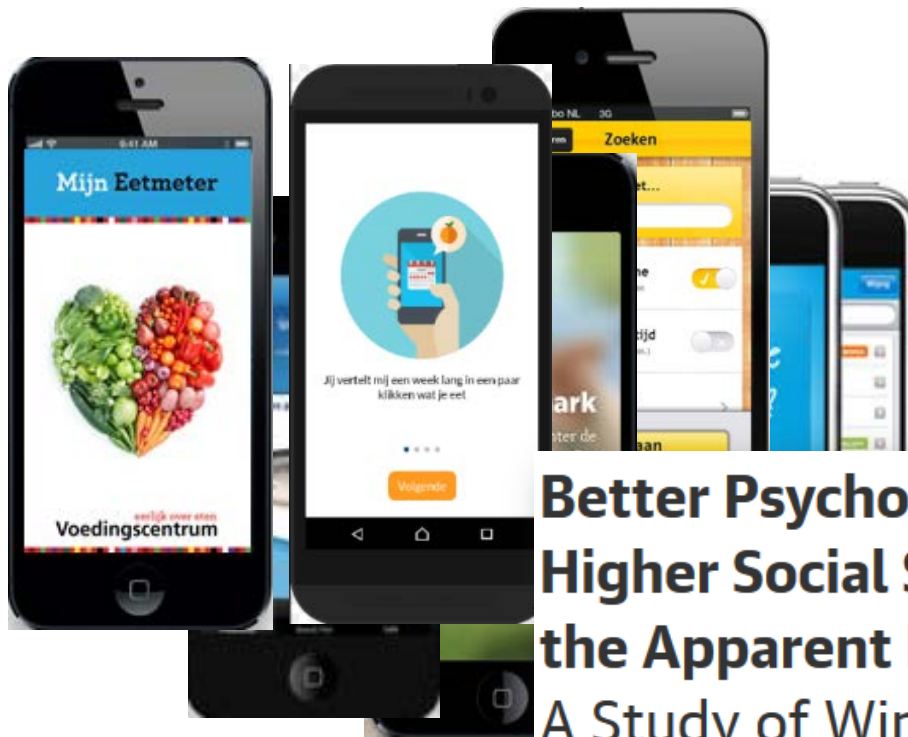


Beleidsstudies – Integrated Assessment Models

- Biomassa als brandstof of voedsel
- Van dierlijke naar plantaardige eiwitten



Data voor de consument



Better Psychological Functioning and Higher Social Status May Largely Explain the Apparent Health Benefits of Wine A Study of Wine and Beer Drinking in Young Danish Adults

Erik L. Mortensen, PhD; Hans H. Jensen, PhD; Stephanie A. Sanders, PhD; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

Arch Intern Med. 2001;161(15):1844-1848. doi:10.1001/archinte.161.15.1844



FOOD & BIOBASED RESEARCH

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Data voor de onderzoek en innovatie



Genomics



Citizen Science



Gezocht: data scientists

joinup **Joinup.eu** Follow
@Joinup_eu

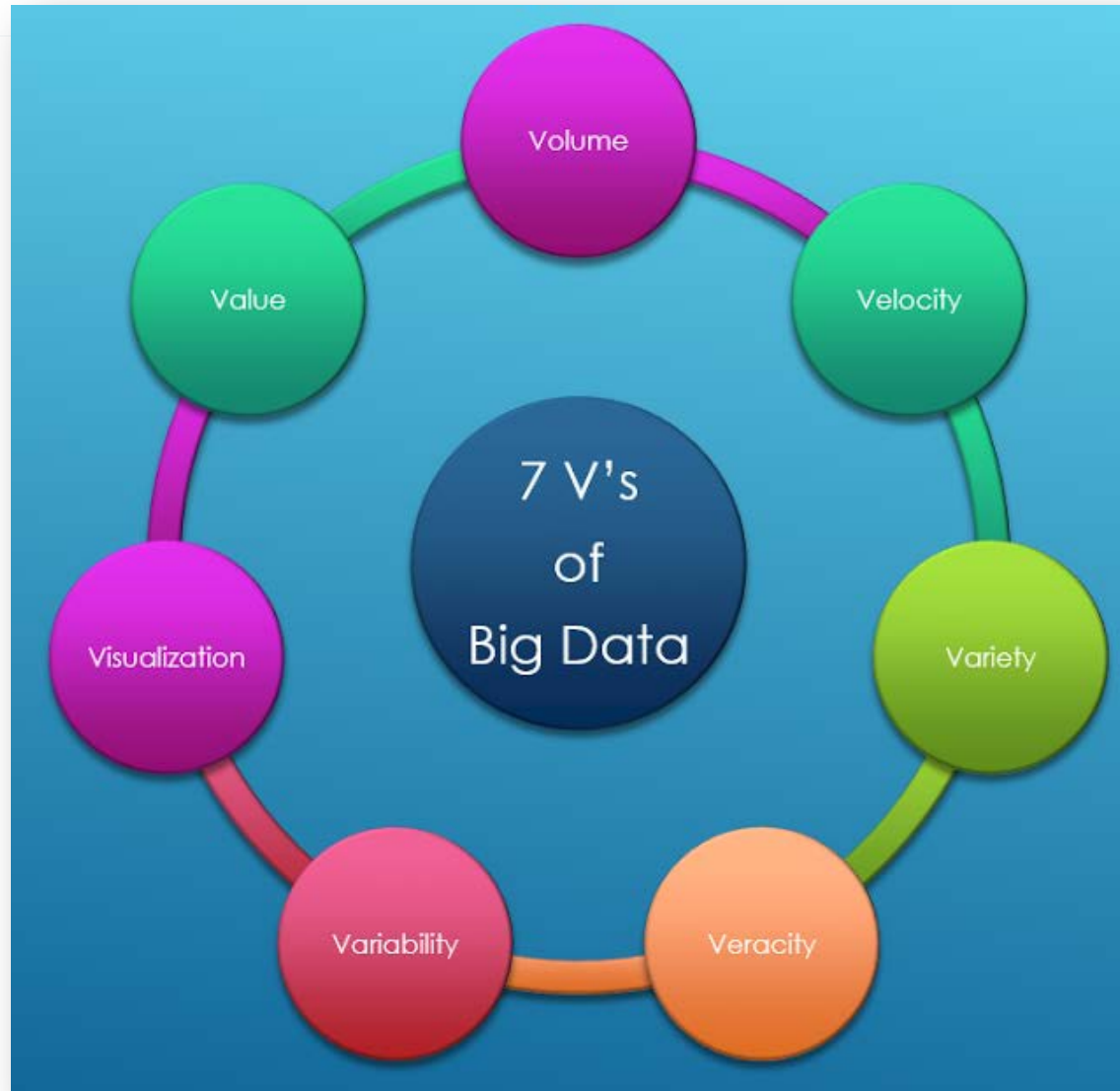
"500,000 data scientists needed in EU open research data" interested? Learn more on [#Joinup](#) bit.ly/2fjlrst [#OpenData](#) [@EU_Commission](#)

European Commission

Realising
the European
Open Science Cloud

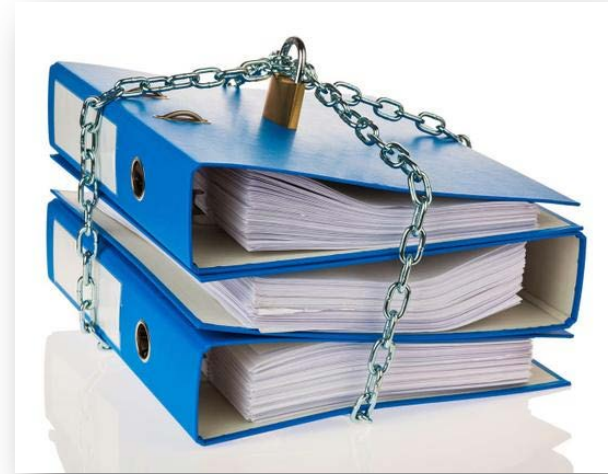


Big Data - wat is het?

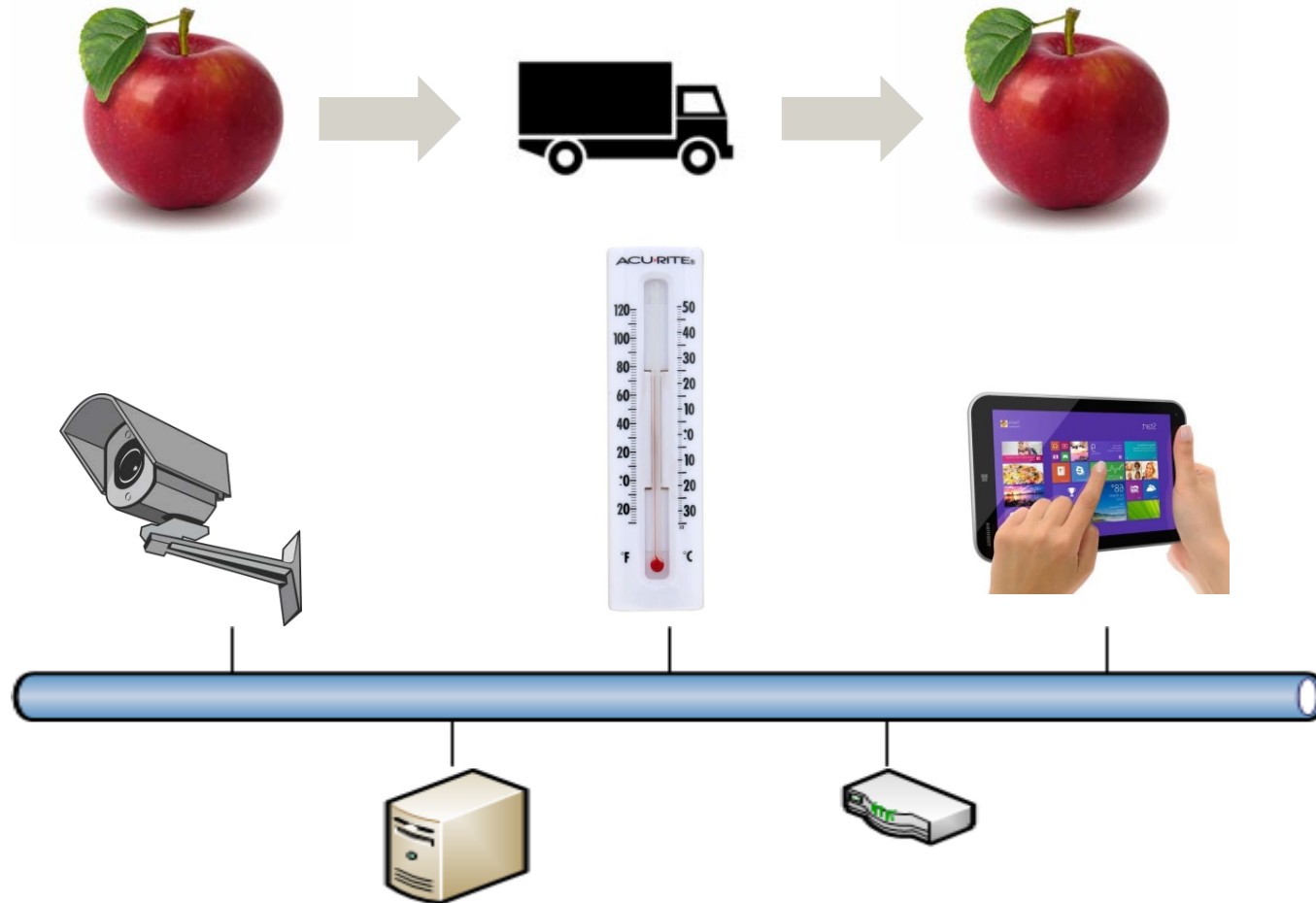


Twee aandachtspunten in agrifood

- Eigendom en privacy
- Uitwisselbaarheid

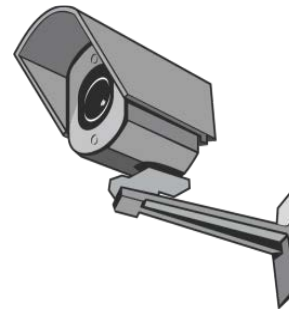
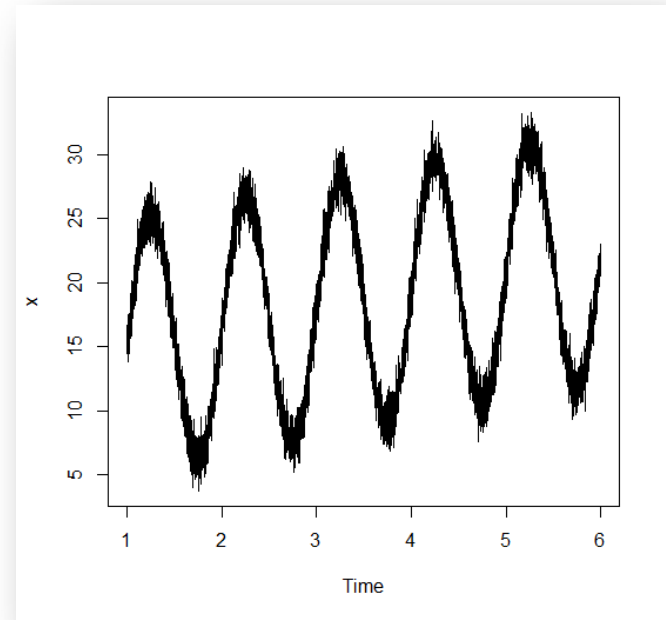


Data delen op het Internet of Things

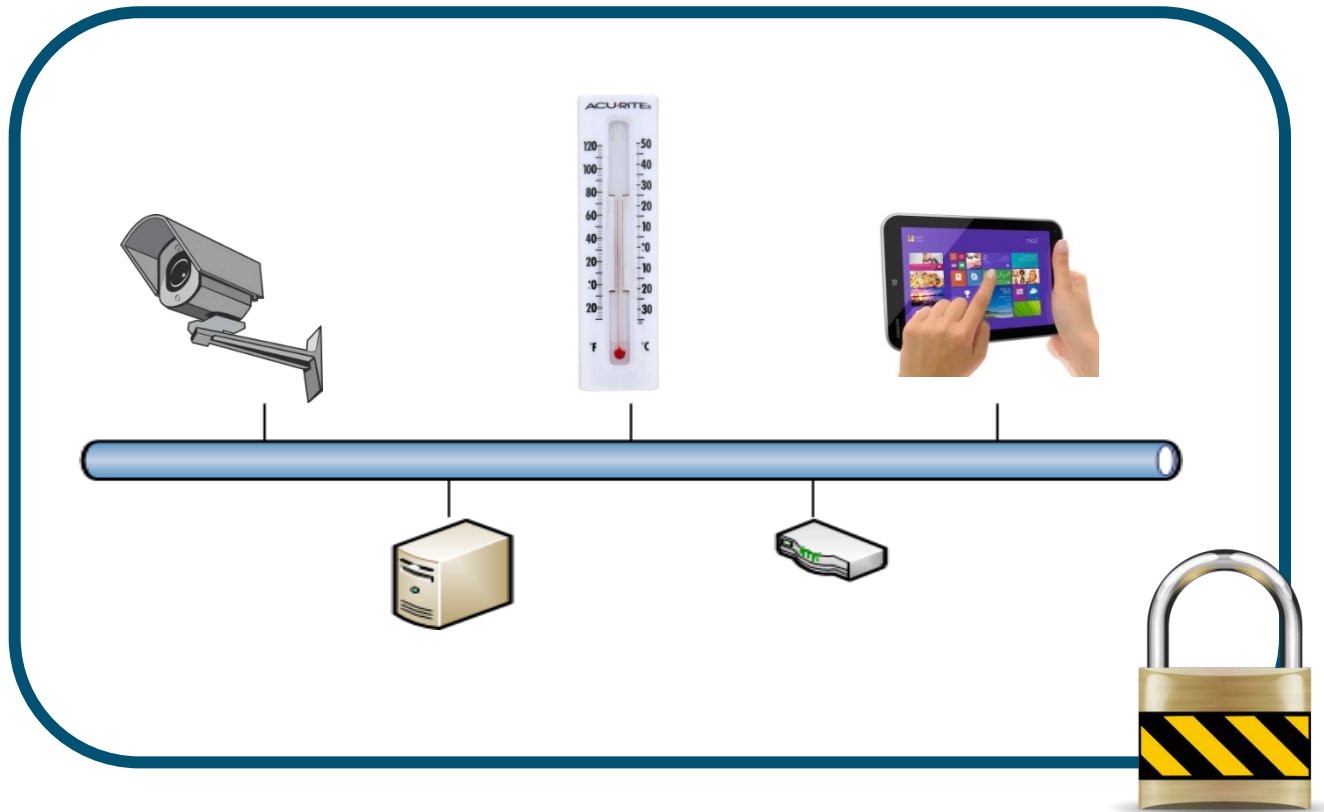


Data hebben metadata nodig

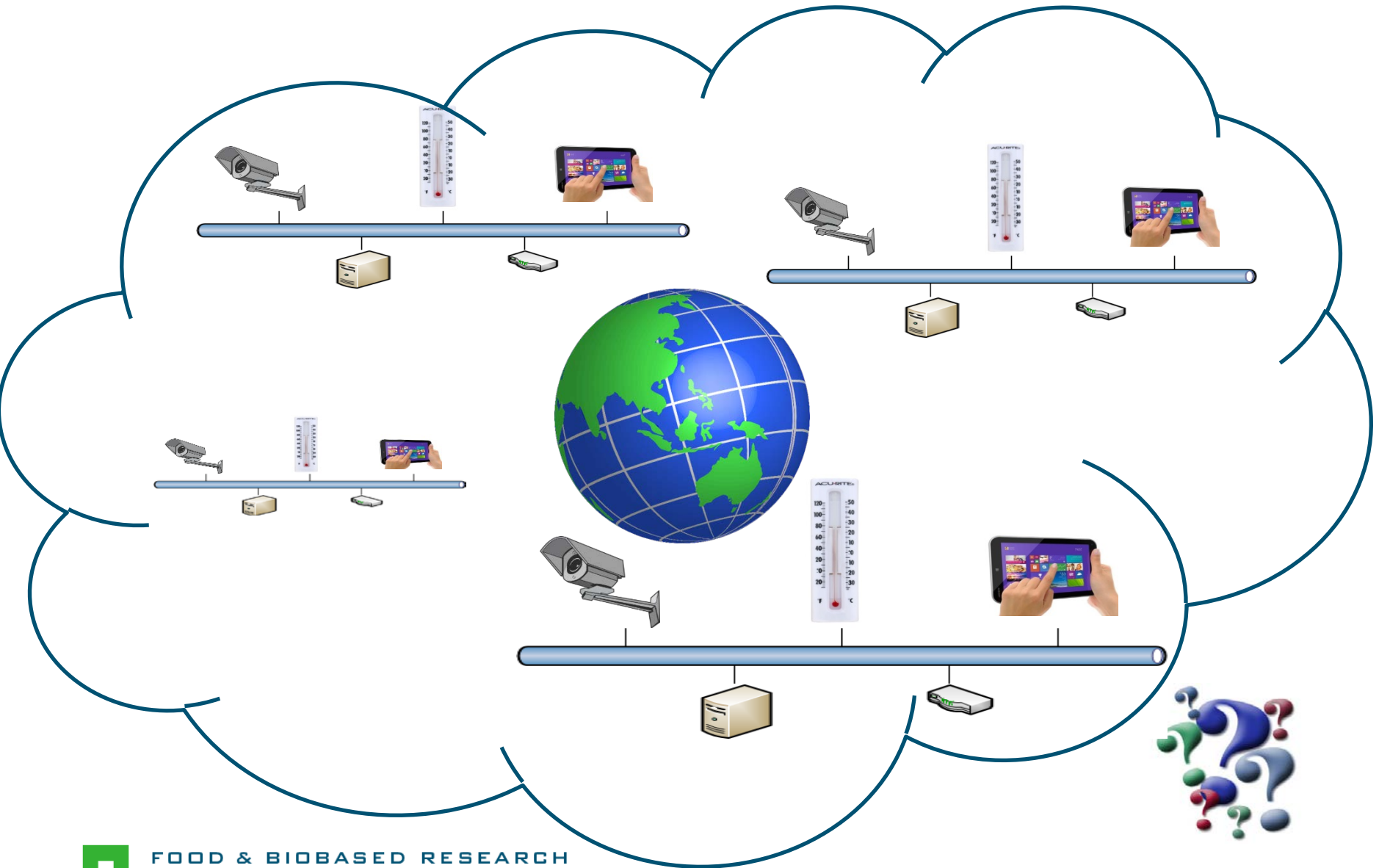
- betekenis
- herkomst



Gesloten wereld: impliciete (meta)data

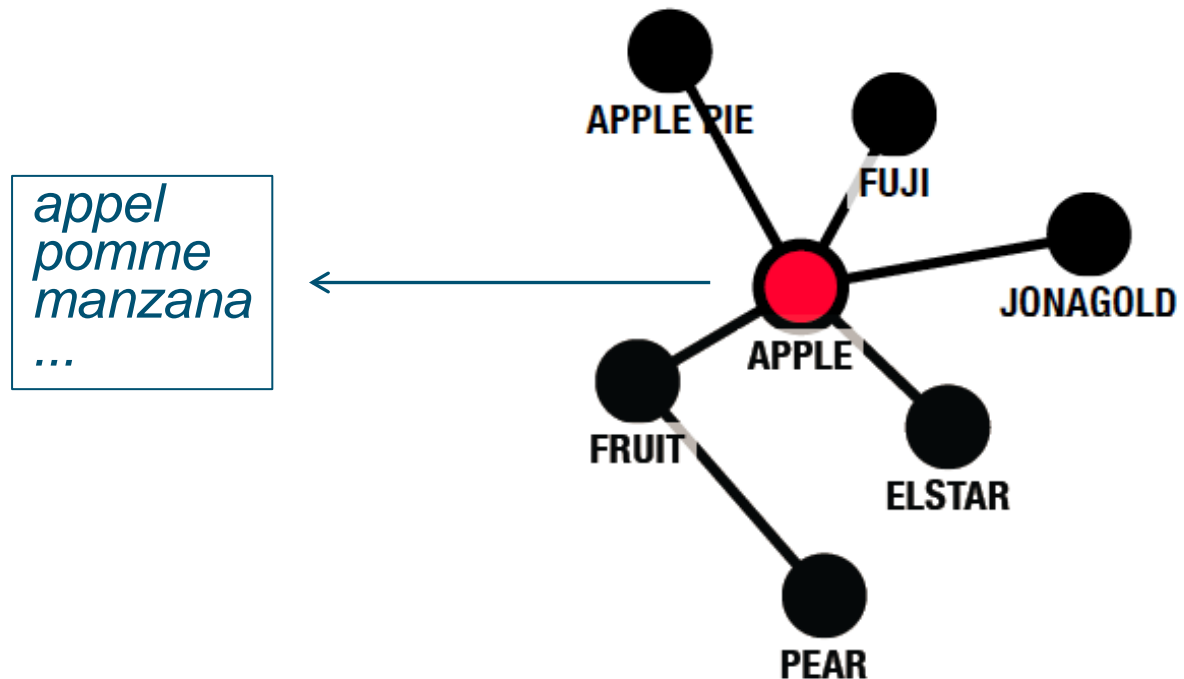


Open wereld - het semantische web



Het semantische web

- Elk ding of begrip heeft een unieke URI
- Dingen hebben eigenschappen en relaties



Recepten op het web



Perfect braised spinach

See full recipe on: [Jamie Oliver](#)



EMAIL



PIN IT



SHARE



TWEET



GOOGLE+

4 Ingredients

400 g spinach

Juice of ½ lemon

10 g butter

1 grating nutmeg

Preparation

Nutrition

45

2%

4

```
<h2>Saturated</h2>
<span class="percent">
<span>7</span>%
</span>
      <span class="size">
<span itemprop="saturatedFatContent" data-unit="g">
1</span>
      </span>
```



Voculaires

Firefox

ROC+

www.fbresearch.nl/rocplus/RelateConcepts.aspx

COMMIT/

Valerie1

Select project Add terms Identify synonyms Get suggestions Create taxonomy Indicate relations


Manage relations

drag and drop terms into the tree

tilling

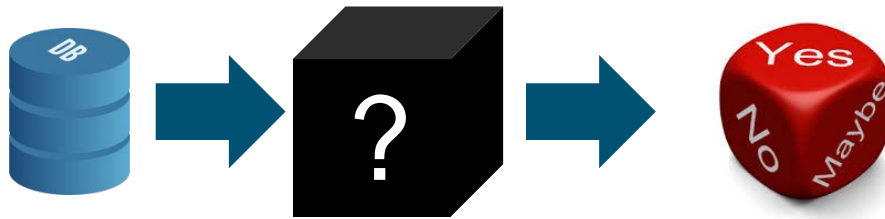
drag and drop to change the structure

- Top level concept
 - agronomy
 - filter system
 - biobed
 - chemical store
 - container
 - weed control
 - crop spraying
 - water management
 - drainage
 - farmyard
 - fertilizer
 - foil cap
 - indicator species
 - great crested newt
 - pesticide
 - herbicide

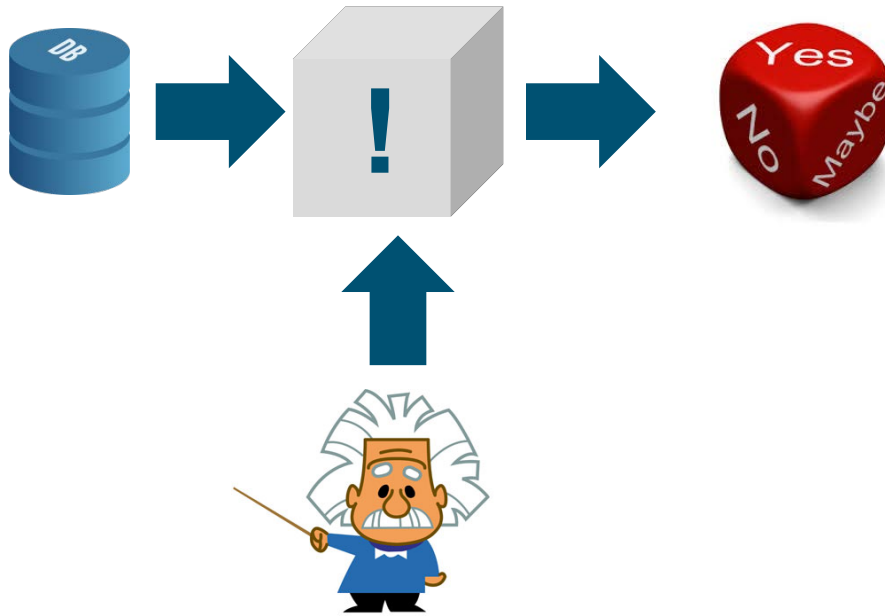


I'd like to indicate relations between terms >>

Leren uit data?

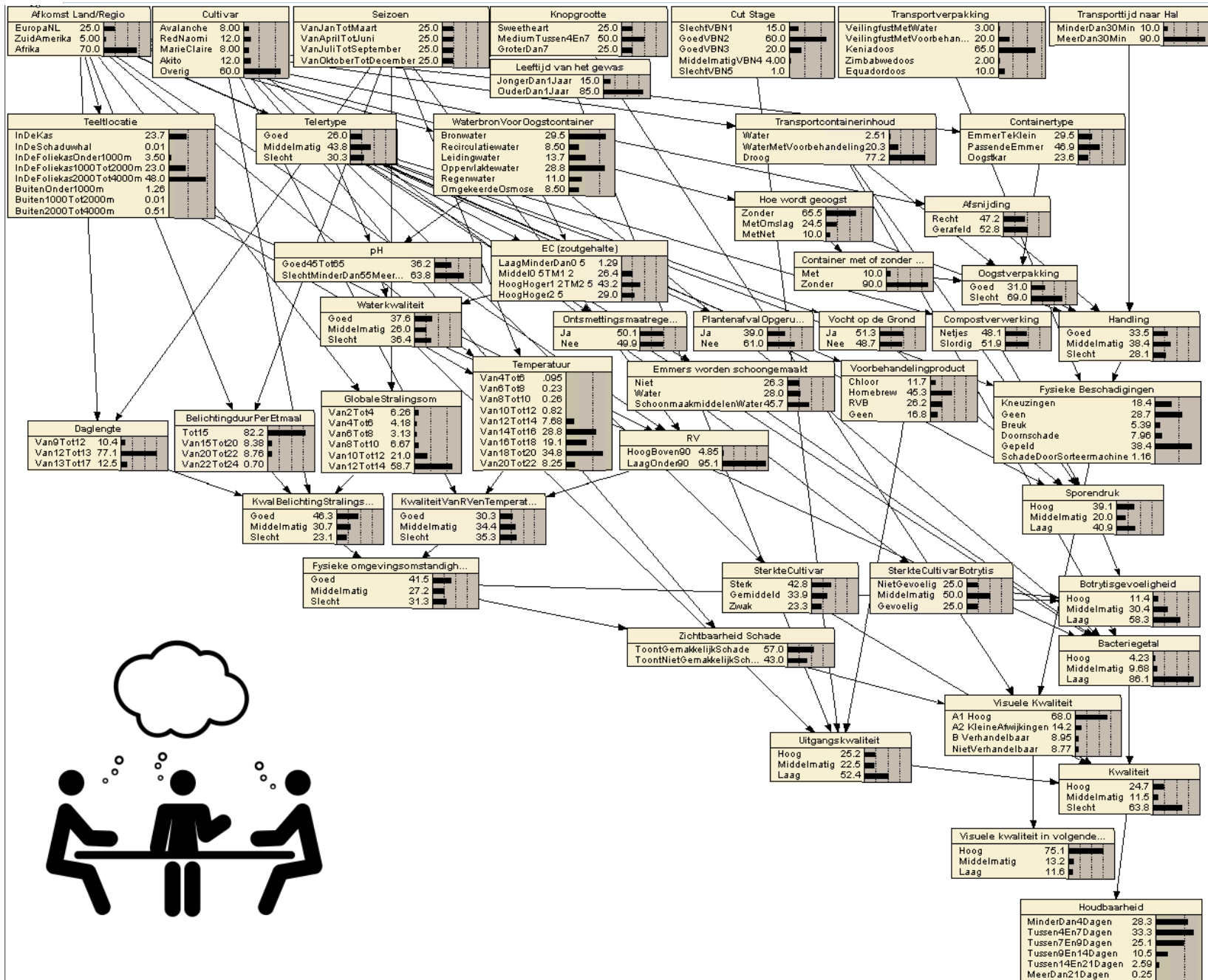


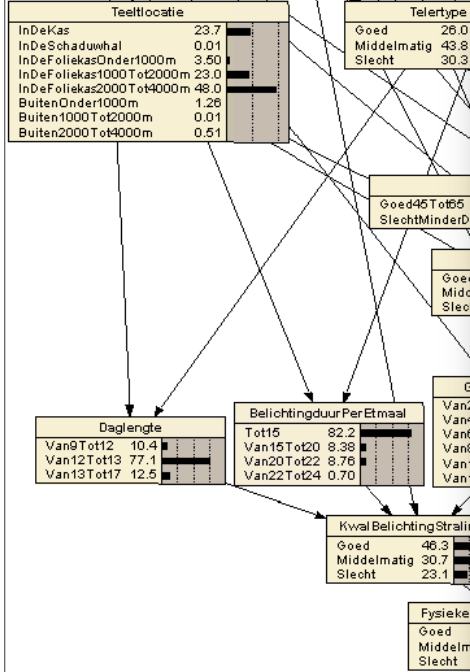
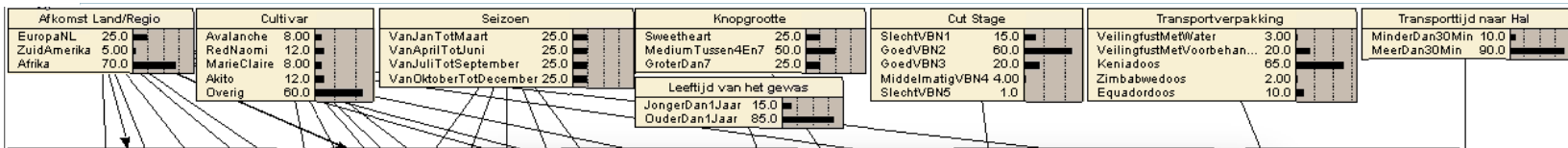
Leren uit data?



Volgende generatie: automatisch leren van uitlegbare modellen

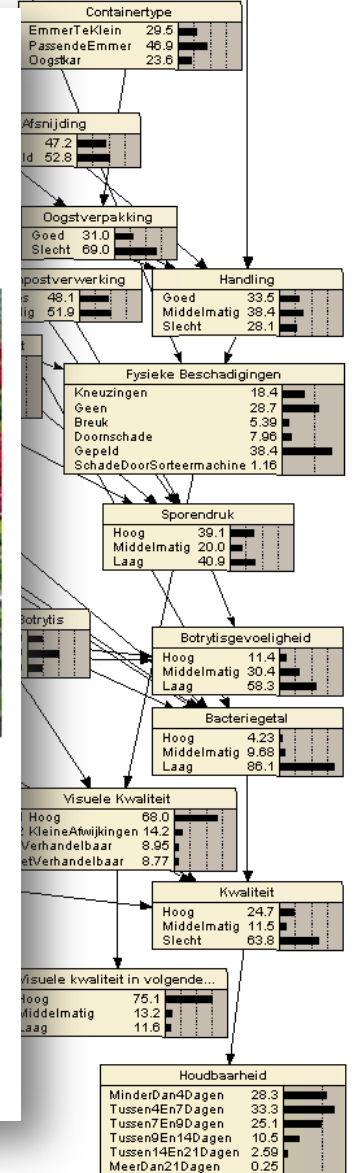






Kunstmatige intelligentie bewaakt en voorspelt kwaliteit rozen

13 OKTOBER 2016



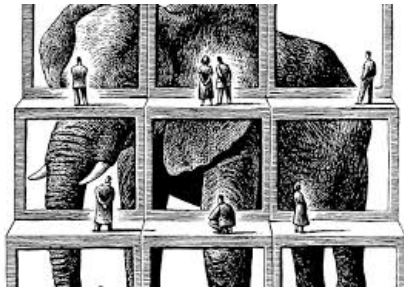
IQ-Flora is een innovatief systeem dat de productkwaliteit van rozen in de keten 'real time' in de gaten houdt. De eerste module van het prototype is net opgeleverd, de overige onderdelen worden in november getest.

In het project 'Kwaliteitsgestuurde Rozenketen' werkt Royal FloraHolland samen met Wageningen University & Research aan het ontwikkelen van IQ-Flora, een systeem dat dankzij

Kortom: het gaat om betekenis geven aan data

3	ArgK	0.83	19	4	28	13	2.0
4	CpxR	0.55	16	3	35	24	1.4
5	CRP	0.47	23	4	209	154	1.3
6	CysB	0.67	43	3	9	7	1.0
7	DgsA	1.17	24	2	5	4	1.0
8	DnaA	1.34	10	2	7	5	1.3
9	EvgA	1.45	19	1	5	5	1.0
10	FadR	0.86	18	2	12	9	1.3
11	Fis	0.34	20	7	157	75	2.0
12	FlhDC	0.68	17	2	20	10	2.0
13	FurP	1.08	17	1	11	11	1.0

getallen en woorden



contextinformatie



```
if BMI>25 and  
waist > 90 then  
overweighed;
```

algoritmische kennis



taakondersteuning



Data zonder kennis ...

... is als voedsel zonder inhoud



FOOD & BIOBASED RESEARCH

WAGENINGEN UR

Dank u!



contact: jan.top@wur.nl



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