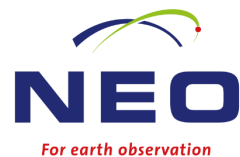




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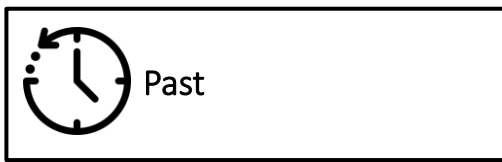
AMS in The Netherlands

Past, present and future

Marcel Meijer (RVO)

Henk Janssen (NEO)

Index



The past (until 2023)



Sample of 5% of all farmers were selected for inspection.



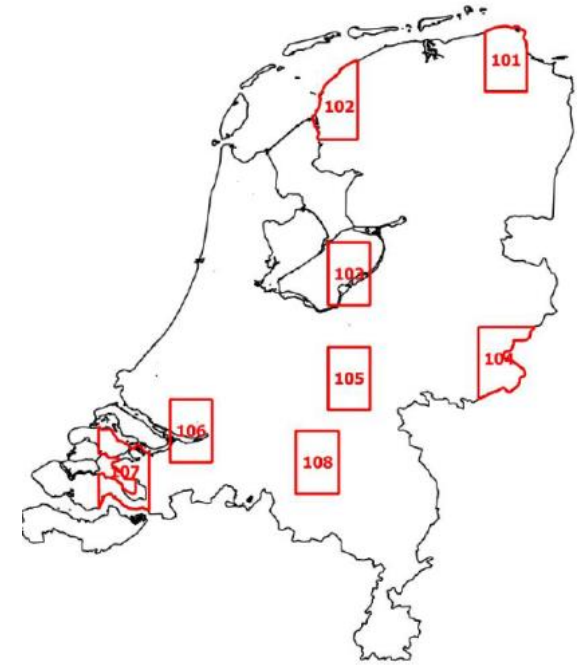
Roughly 30.000 – 40.000 parcels were checked every year.



The checks were performed using remote sensing data and on the spot controls.



No automatic processing. Combination of CAPI (Computer Assisted Photo Interpretation), field observations and GNSS measurements.



The past continued



Focus on using remote sensing

Most cost effective



Interaction with farmers was limited.

Usually two times a year (application → payment)



(Subsidy) scheme design relatively straightforward.

Mostly area-based payments



Relative feeling of autonomy from the farmer's perspective.

Yes, there are deadlines, but there is some leeway.

Preparations for the present

New CAP period 2023 – 2027

- A lot of new changes including:
 - Farmers will have to do more but will receive less support
 - Introduction of the ECO-scheme
 - Introduction of Conditionality
 - Combination of greening and cross compliance
 - Includes requirements stemming from the Nitrate Directive and the N2000 Directive
 - **Introduction of the Area Monitoring System (AMS)**

Preparing for the AMS we did together NEO

- Mainly by means of PoCs (Proof of Concepts)
- Developing a viewer
- Developing software inhouse for processing AMS results

Preparations for the present continued

- Lessons learned
 - Current infrastructure from RVO doesn't lend itself for processing large amount of remote sensing data or for CPU/GPU hungry algorithms.
 - Limited inhouse knowledge with regards to cloud based processing and remote sensing data.
 - To foster new developments a stable backbone is needed not only with regards to processing capacity but also with regards to analysis ready data (ARD).
 - Making the data available to other interested parties is difficult in the current setup (internally/externally).
 - Dependent on our current supplier if we want to run something ourselves or perform experiments.
 - Active cooperation is key for success. But also difficult to organise.



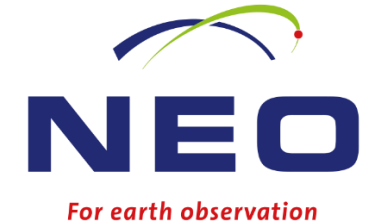
Tender in 2022

Tender results

- Consortium consisting of four partners won the tender
- Close cooperation between NEA and the consortium.
- Key features
 - All data will be made available through webservice.
 - Every newly available satellite image will be processed almost immediately.
 - Cloud based environment to collect and process satellite data and to run and process different markers to detect agricultural activities (or the absence of).
 - Web based interface to run markers.
 - Web based Analytics platform to experiment and monitor result.



Netherlands Enterprise Agency

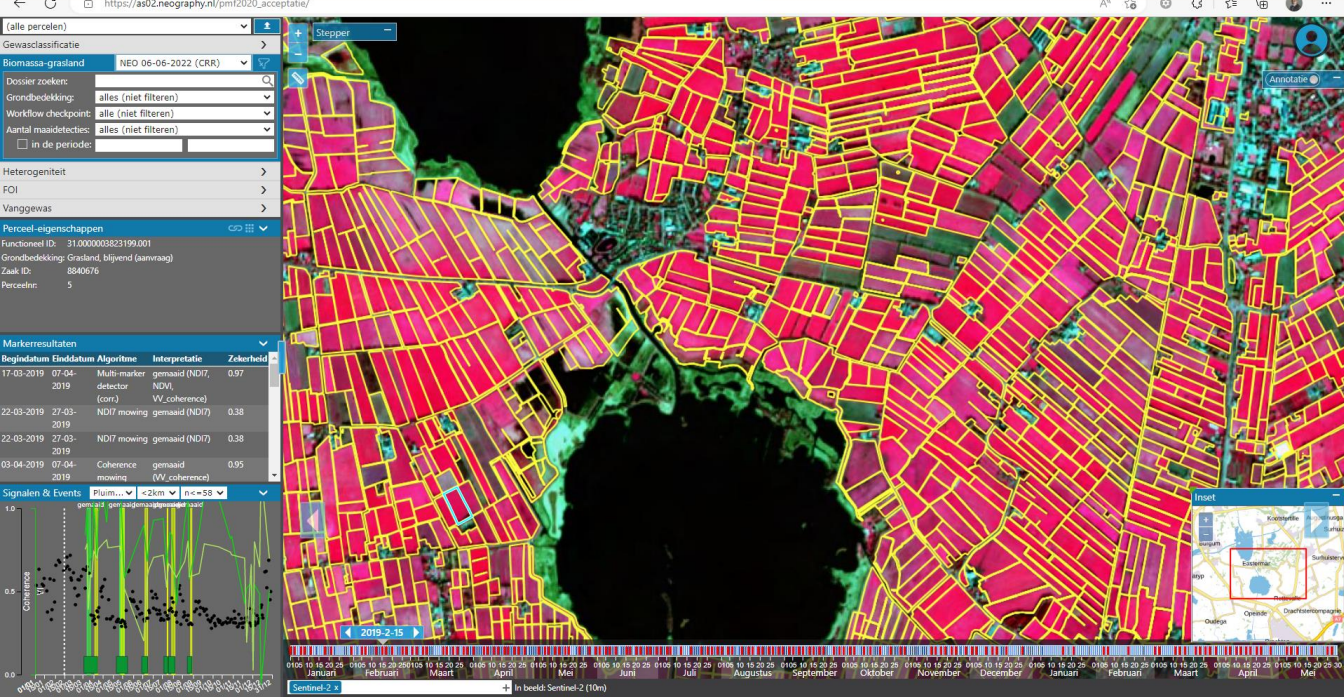
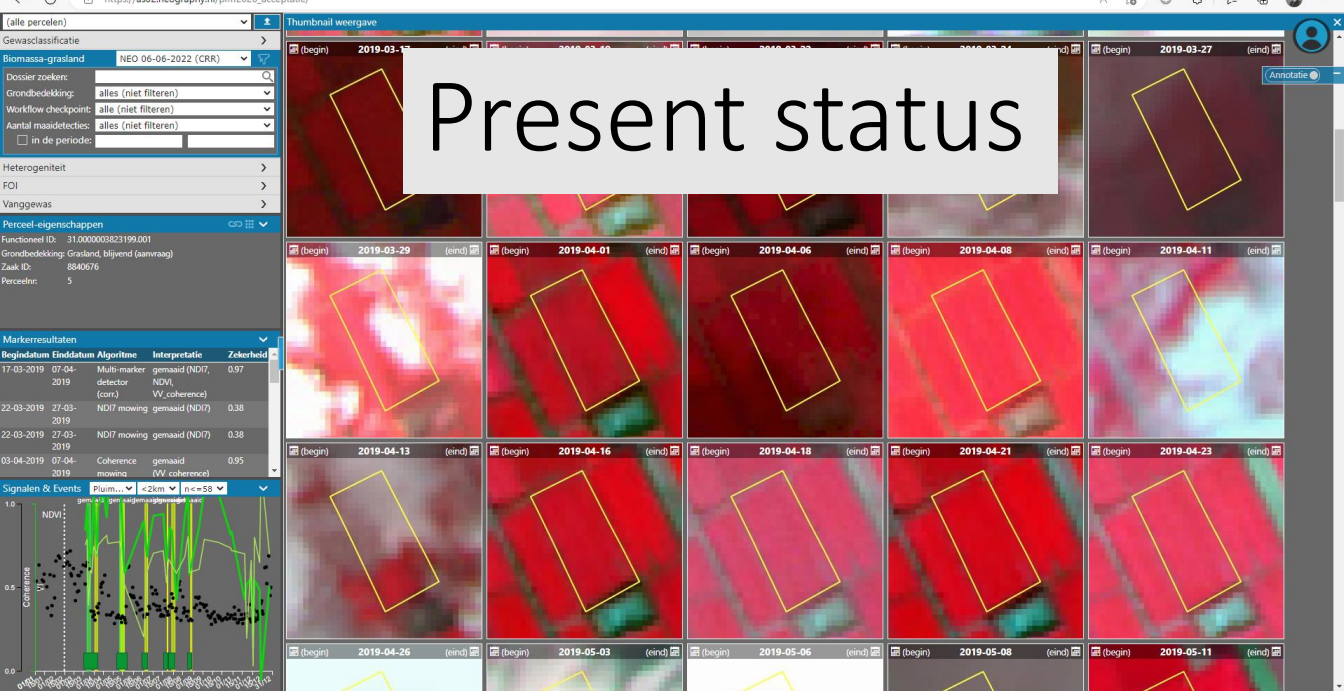


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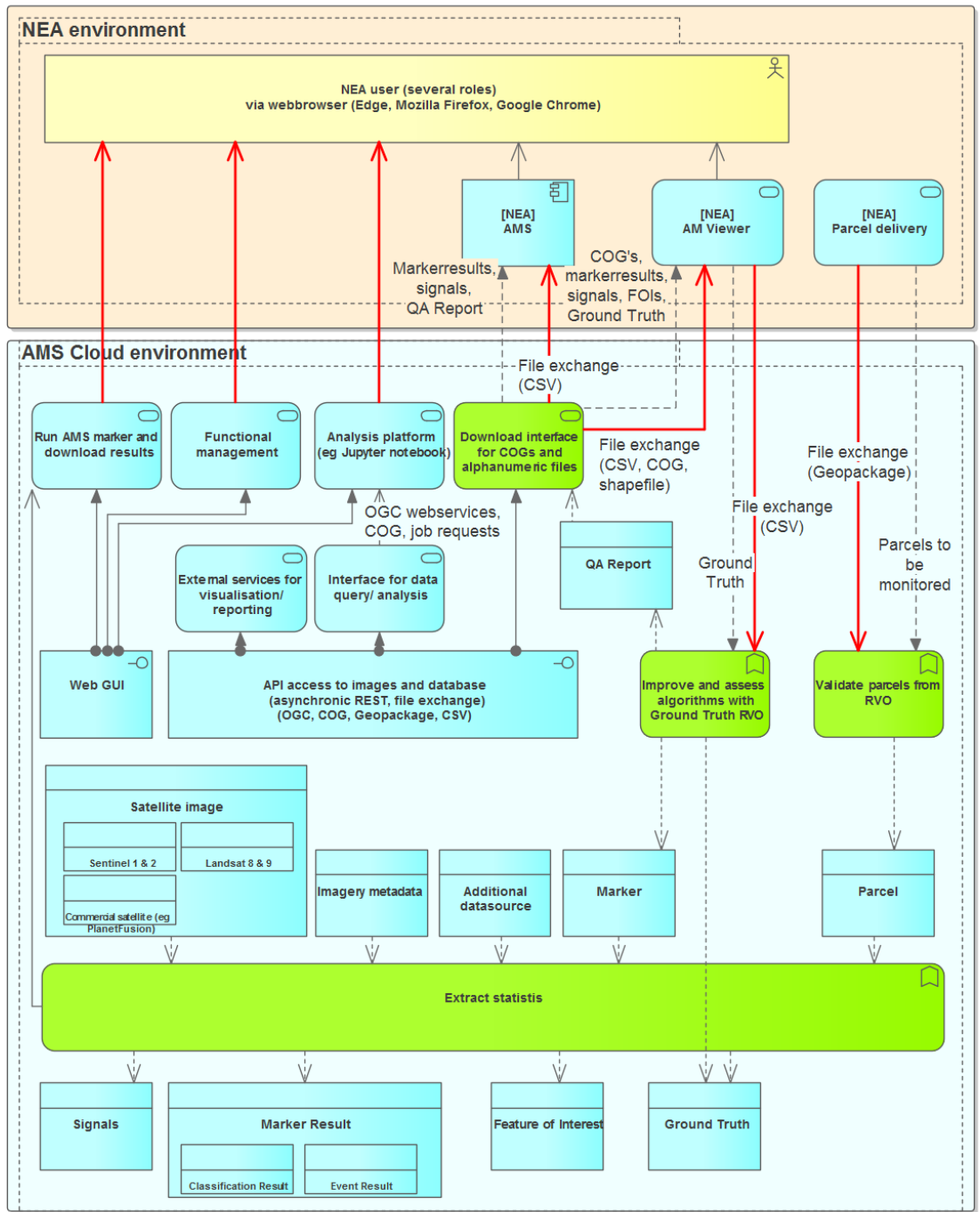
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Intern gebruik

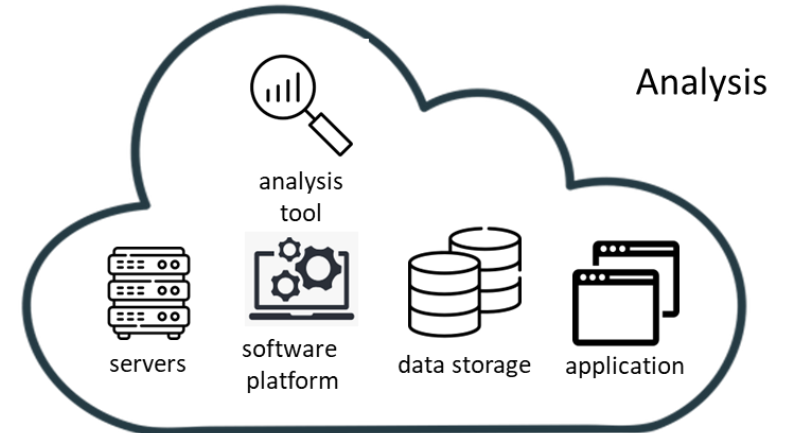
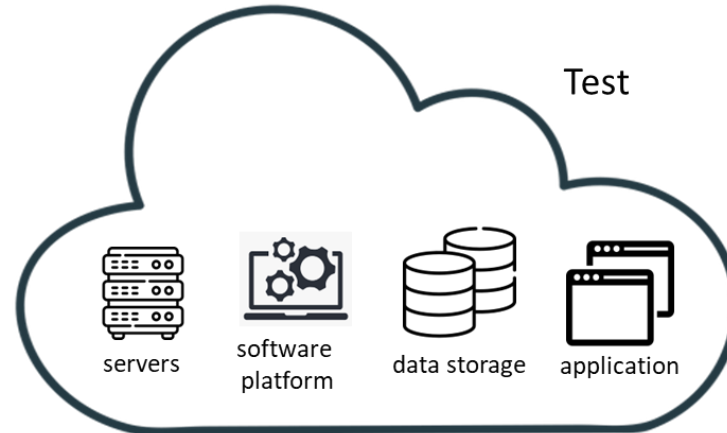
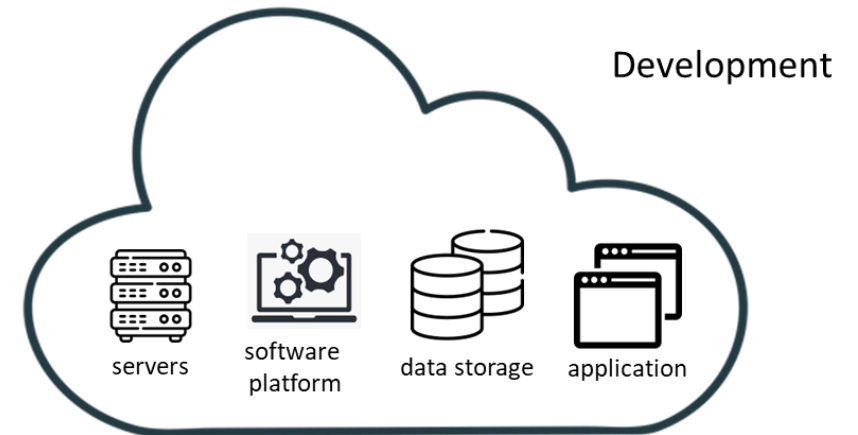
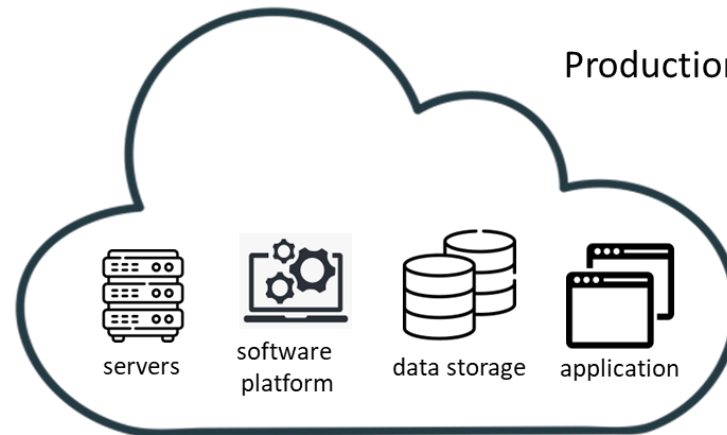
application AMS



AMS Environments

Four different environments

- Production
- Development
- Test
- Analysis





What are we monitoring?

We monitor different activities:

- Crops (2023 onwards)
- Grassland (mowing/grazing) (2023 onwards)
- Homogeneity of grassland (2023 onwards)
 - In some cases, it's not possible to detect a mowing/grazing event. Homogeneity is then a good indicator that the parcel is actually used.
- Mowing restrictions (2024 onwards)
- Ploughing (2024 onwards)
- Catchcrops (presence and period) (2024 onwards)
- Harvest (2024 onwards)

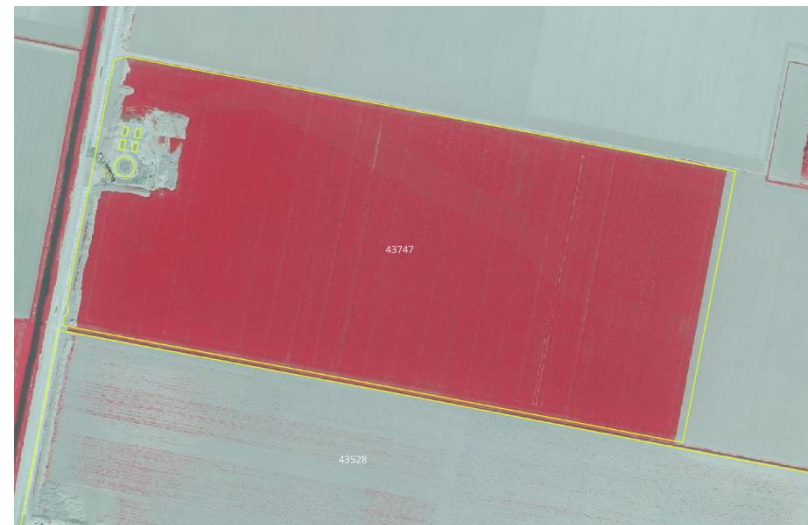


What is the impact of all this?

- More accurate data
 - Less risk for the CAP funds.
 - More insight if (national) goals are met or not.
 - Data for policy improvements (what works and what doesn't).
 - Improvements for other reference data sources.
- Less leeway for the farmer
 - The AMS should be used to help the farmer and act as an early warning system.
 - Reality is that the AMS is an infringement detector.
 - Deadlines and activities are strictly monitored.
 - The only exception is mowing/grazing.
- More interaction
 - Farmer is asked to act/respond several moments in the year.
 - Providing evidence
 - Change his application
- More work.....



Cleaning up the data



Multiple crops on one parcel

- Some of the data has to be 'cleaned' first.
- Mixture of temporary and more permanent issues.
- In the near future we will ask farmers to do this.



Looking towards to the future

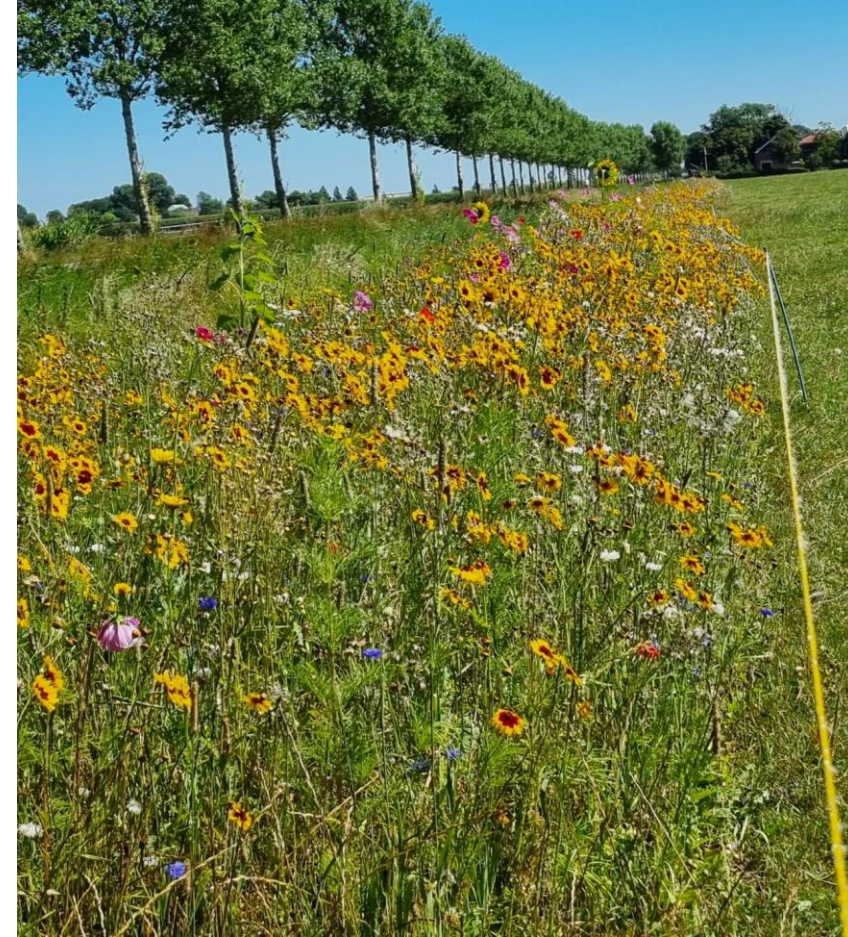
- Continuation of existing trends
 - Increasing complexity of schemes and criteria.
 - Renewed appreciation of everything small.
 - Policy is getting more complex and different policy areas are getting more and more connected.
 - Still fragmented landscape in terms of Policy, Research, Business and Paying Agency

Increased complexity

Some examples

- Landscape features
- Bufferstrips
- Fallow land
- Strip cropping
- Agroforestry
- Herbaceous grasslands

But how to deal with this in the context of the AMS?

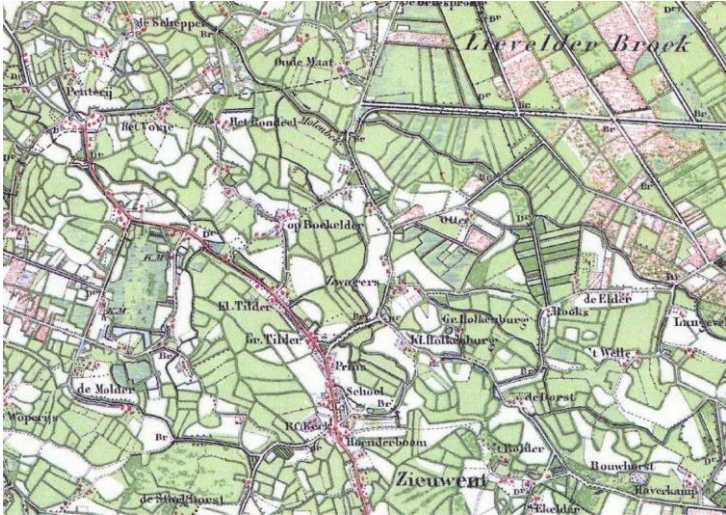


Renewed appreciation of everything small

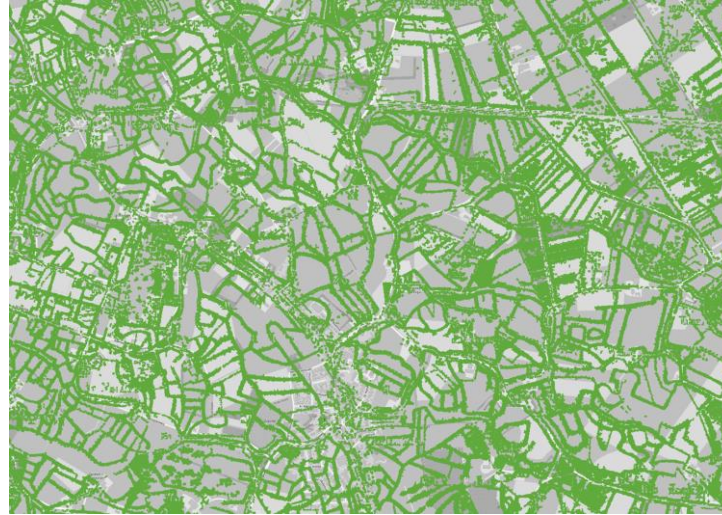
- From a historical perspective:
- Vast majority of Dutch nature is cultural landscape
 - small scale + richness of landscape features
 - refuge for a multitude of species
- Agri development and land consolidation policy ('60/'70) caused vast decline



What is gone.....in 100 years



Historical map (Zieuwent)



LF's digitized



LF's present time

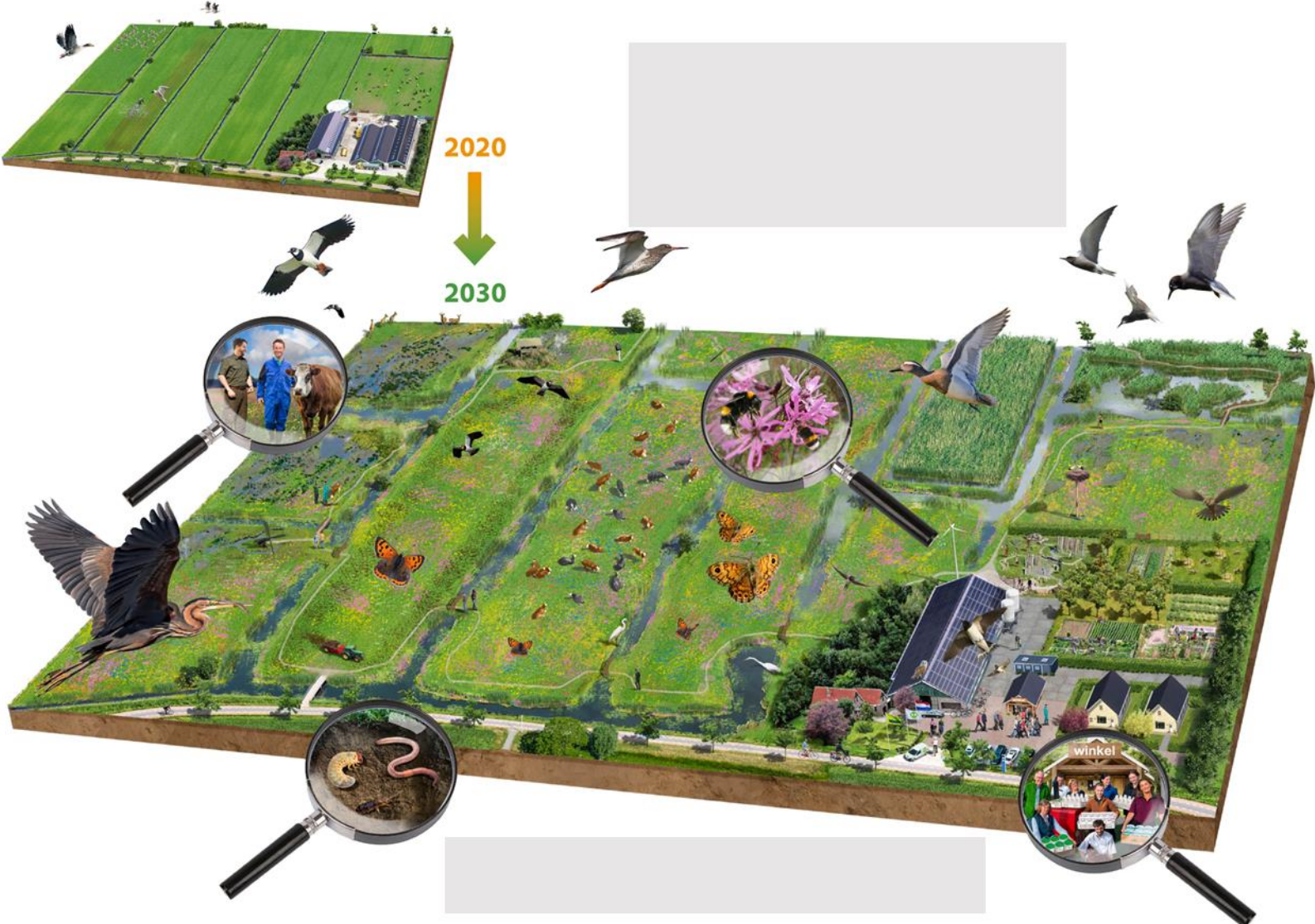


What is lost in red

Present day

- Around 3 mln landscape features are captured in a special layer.
- Farmers can use these LF's to accrue points (ECO-scheme) or use them to get area related payments.

Transition towards a more nature inclusive agriculture



Open Invitation to Open Innovation

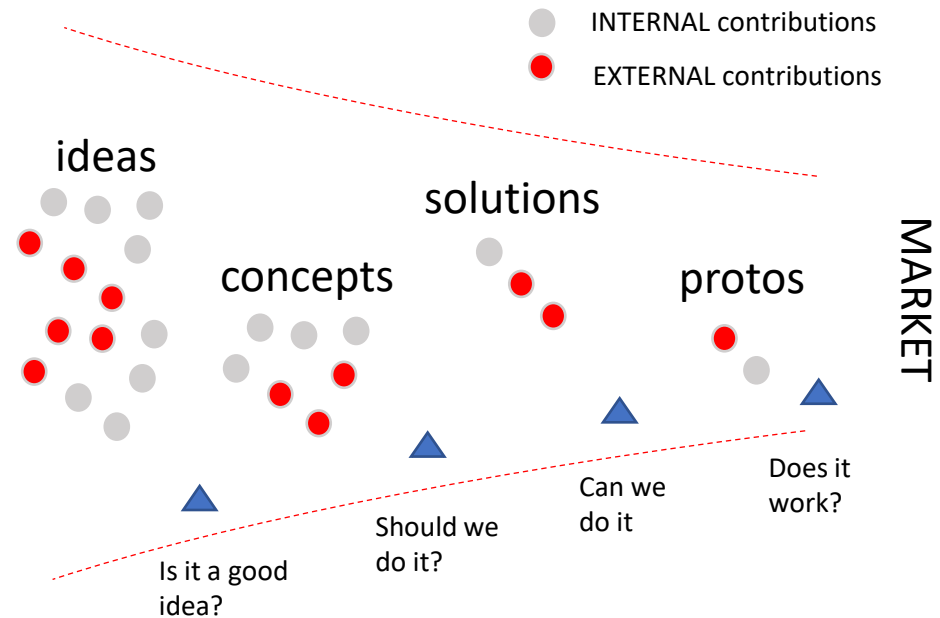
Challenges ahead and at hand require a holistic approach

- Where Policy, Science, Business and Administration come together

Ideas/contributions are very much welcomed

We can provide you with data and infrastructure

In Summer 2023 we will conceptualise an Innovation Agenda



Some examples

- Pan-European database with geotagged photos and spectral signatures.
- Grassland roughness and neglect
- Detection of landscape features

