

Incentives for Carbon Farming

Results from the project 'Slim Landgebruik'

Carin Rougoor – December 9th 2021

Content of the presentation

1. Definition of incentives – what are we talking about?
2. Development of methodologies for carbon credits for the voluntary market for (a) permanent pasture and (b) arable farming
3. An analysis of experiences in Dutch sustainability initiatives and how they can contribute to carbon farming
 - Strengths and weaknesses of each initiative
 - support among farmers for the initiatives
 - Recommendations: how can these initiatives be improved for carbon farming?

1. Types of incentives for carbon farming

- Law and regulation
- Common Agricultural Policy
- Education
- Financial:
 - Public financial incentives, i.e. subsidies
 - Private financial incentives, i.e.:
 - carbon credits → 'Stichting Nationale Koolstofmarkt'
 - Other private sustainability initiatives



2. Carbon Credits – a Dutch system



- National Carbon Market (“Stichting Nationale Koolstofmarkt”)
 - System for certification of the reduction of CO₂-emission by Dutch projects
 - Voluntary market of carbon credits (unlike mandatory ETS). So, soil carbon remains allocated to agriculture. This is important because of the appointments made within the Dutch Climate Agreement
 - A method document for permanent pasture is approved in the summer of 2021. Different groups of farmers show interest in setting up such a project
 - Method document for arable farming is being worked on

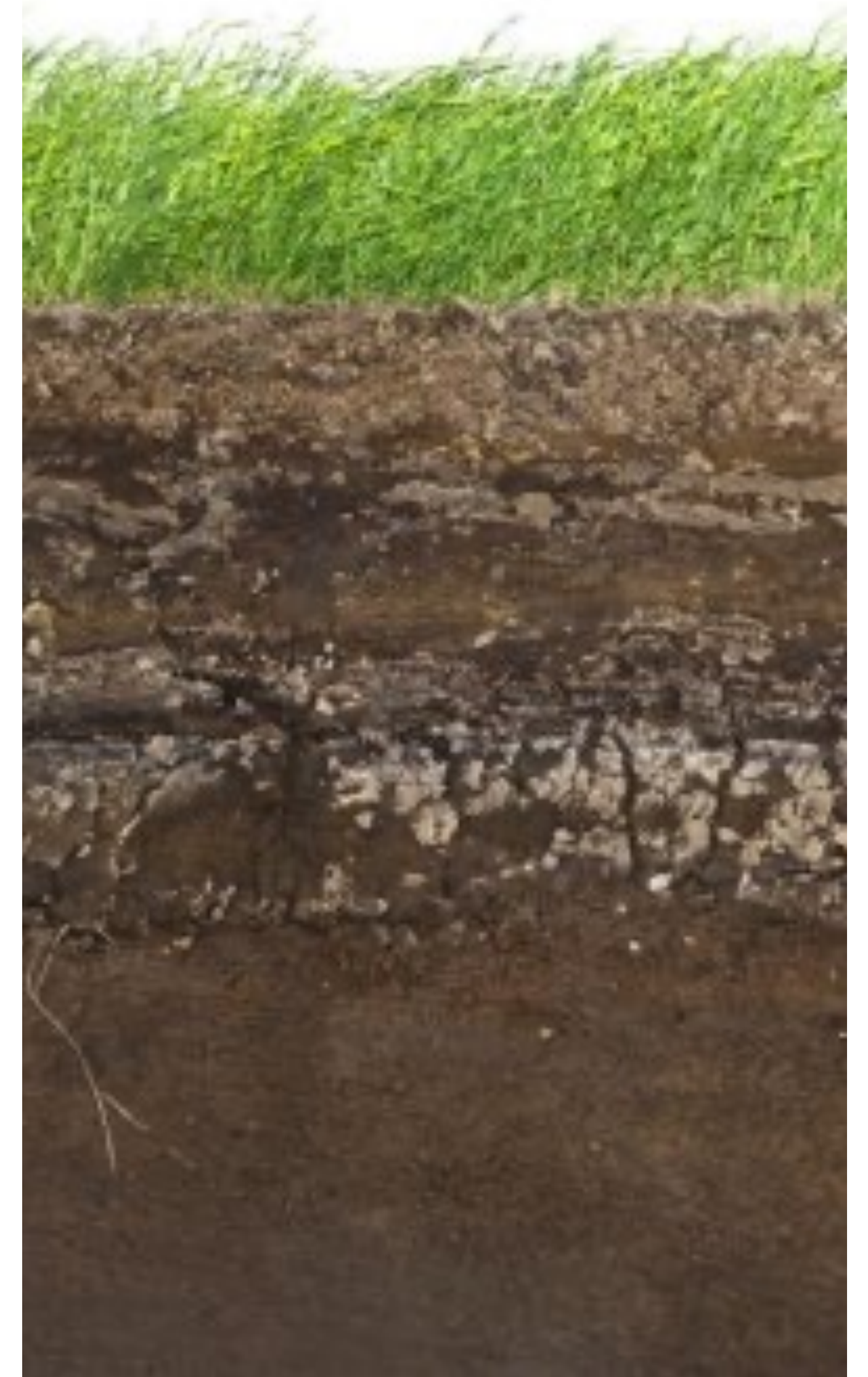
Design methodology permanent pasture

- A method for sand, clay and loess soils
- Definition of permanent pasture: no tillage of pasture for at least 10 years
- Group of dairy farmers start a joint project and make agreements.
- A dairy farm has to participate with at least 50% of the total farm area (to avoid carbon leakage at other parcels)
- Recommendation: include at least 150 parcels in the project. This provides more certainty that (on average) an increase in soil carbon can be measured



A project in practice – Year 0

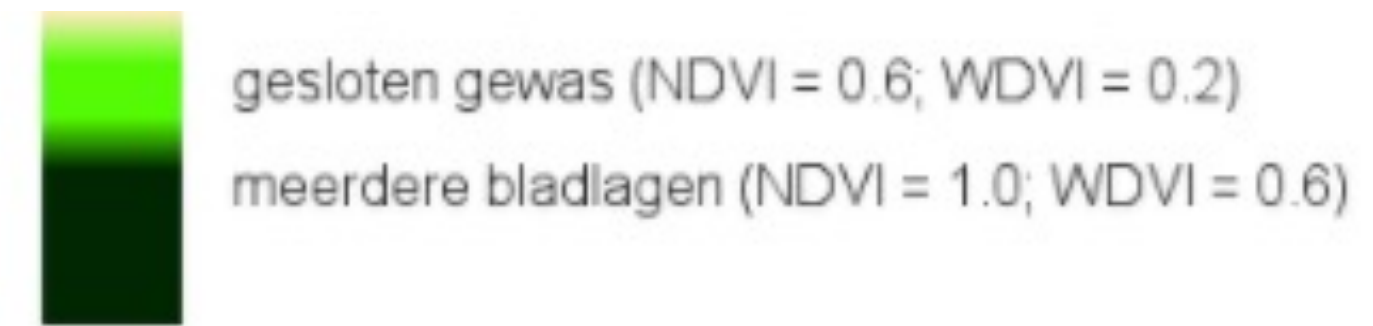
- Registration and validation of project at Stichting Nationale Koolstofmarkt
- Soil samples – baseline year 0: soil-C measurements at each parcel (according to protocol)
- Model calculations (model based on RothC) → calculated increase in year 10.
- Contract: X tons of CO₂ soil-C certificates
- Recommendation: every farmer receives the same number of certificates per hectare



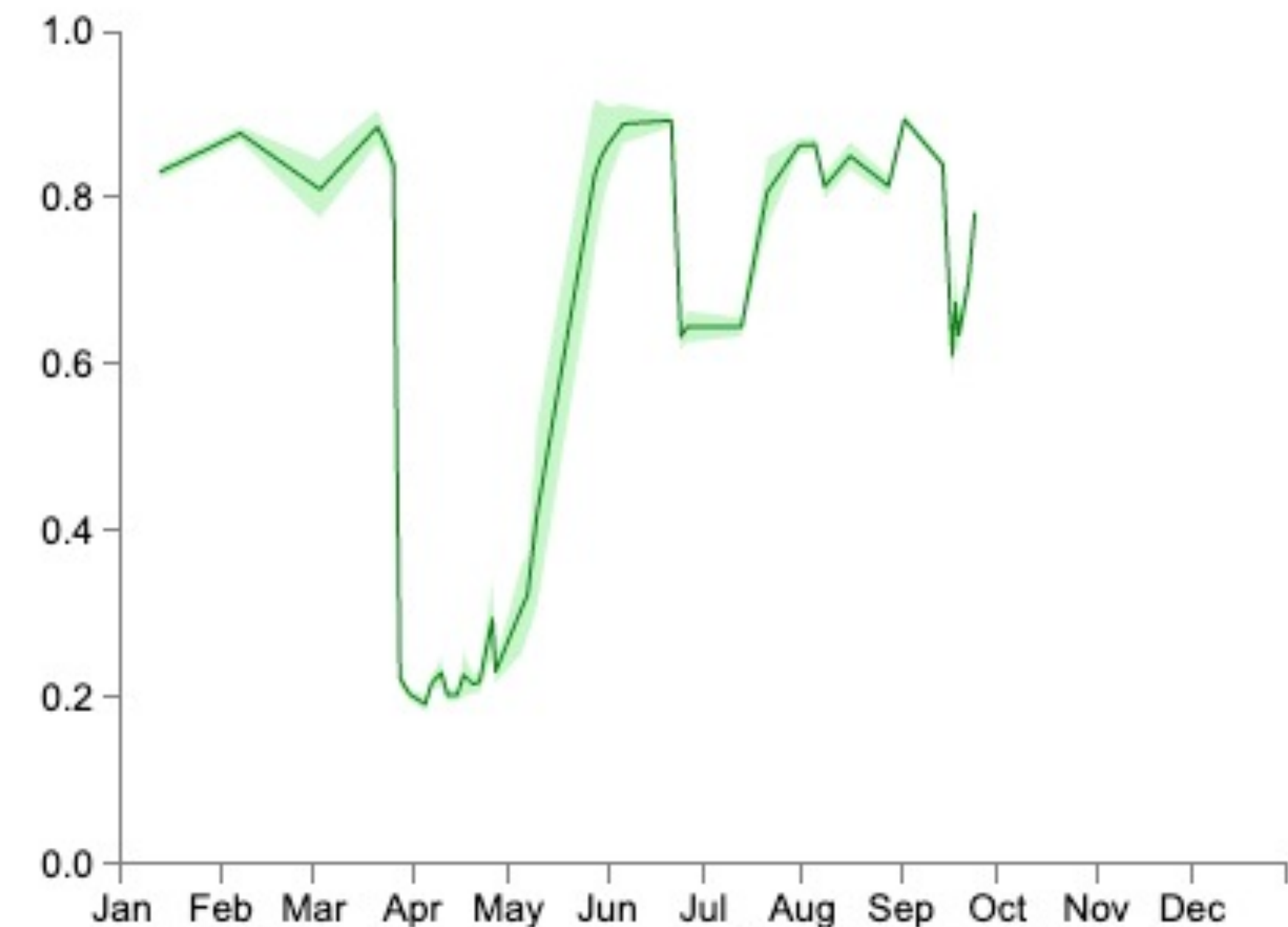
Year 1 to 10

- Monitoring permanent pasture with satellite images of the covering index ('Groenmonitor')
- 5% of the certificates is validated each year
- After 10 years: 50% of the certificates are validated

50% validated, because of 'no tillage'

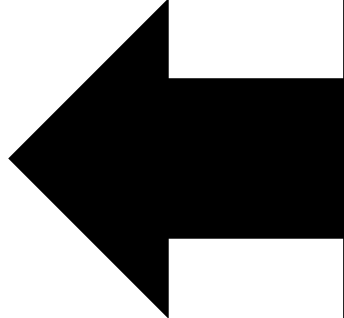


Covering index 2020



Year 10

- Final measurement soil-C in each parcel → increase in soil-C
- Check at project level: measured increase in soil C $>$ 50% of the calculated increase in soil C based on model calculations?
- Yes? → other 50% of certificates are paid out
- No? → other 50% of certificates will expire



**50% for 'no
tillage', 50%
based on soil
sample results**

All certificates are verified. From this moment on, the buyer of the certificates can claim the certificates.

Details described in document:

- Protocol for soil sampling and analysis:
 - sample of 40 stitches with GPS (up to 5 ha)
 - upper 25 cm of the soil
 - Accredited body
 - Different methods of analysis are allowed, provided that the same methodology is used in years 0 and 10
- Method to convert C-percentage in amount of soil C
- More details → see website SNK (in Dutch)



Summary methodology SNK – permanent pasture

- no tillage for at least 10 years
- Farmers can participate with at least 50% of the total farm area
- In year 0 model calculations and soil samples (= baseline measure)
- Each year payment of certificates for ‘no tillage’ (total 50%)
- In year 10 soil samples (= control measure) and payment of second 50%
- So: 50% reward for ‘no tillage’/ 50% for effect on soil carbon

→ 'Permanent pasture' projects are likely to start soon

Method document arable farming

Work in progress

Broadly speaking, the same method is used as for permanent pasture



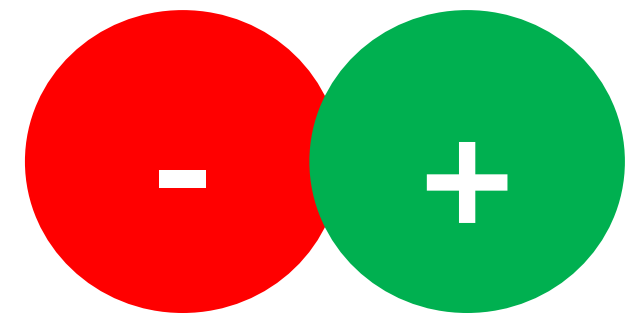
3. Experiences in private sustainability initiatives

- Sustainability initiatives often focus on other goals such as biodiversity. Soil carbon is less cuddly
- Carbon farming as a revenue model is still hard to put into practice
- The way in which farm practices are implemented does not always contribute optimally to the sequestration of soil carbon. Example: the EU-definition of permanent pasture allows ploughing
- Long-term commitment is often not guaranteed, but important from the point of sequestration

Support among farmers for sequestration initiatives

- + **Contribute** to problem solving
 - + **Gain knowledge**, work on soil quality
- Additionality** = the scheme produces desirable results that would not have happened without it.
- problem for 'frontrunners' (farmers that don't have to change farming practices)?
 - + Solution: pay farmers for average result of a group, or pay for 'carbon stock' as well

Support among farmers for sequestration initiatives



Time period: at least 10 years.

Willingness to commit themselves for 10 years differs between farmers.

Depends upon their own specific situation and the situation for the sector as a whole.

2021



2031

Support among farmers for carbon credits

- **Finance:** start-up costs are rather high

Uncertainties

- Increase in organic matter only can be measured after a relatively long period of time.
- + solution: model calculations
- Market for carbon credits still in development

Recommendations

- Use model calculations as the basis for carbon credits (possibly combined with soil sampling)
- Stimulate start up of initiatives (subsidy for start-up costs?)
- Pay attention to soil quality, sharing knowledge between farmers
- Methods to reward ‘frontrunners’:
 - Pay for carbon stock as well
 - Or pay farmers for average results of the group

Thanks for your attention! Questions?

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