LAMASUS
Land Management for Sustainability



Report on the Dutch Roadshow

Future-proof extensive agriculture in peatlands

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1. Introduction

The LAMASUS (Land Use and Management Modelling for Sustainable Governance) project aims to develop methods and approaches to support better decision-making in land-use-related policies. Apart from scientific rigour and excellence, the project team aims to make research relevant for people and policymakers. The instruments to achieve this are a stakeholder board that is informed about findings regularly and whose members contribute to the development of scenarios that are analysed in a quantitative manner. A second instrument is a series of 'roadshows' that are organised to discuss the results of findings on case studies in various countries across Europe to obtain feedback from those who are likely to be affected by changes in land-use policies.

On April 10, 2026, stakeholders from across the agricultural and policy landscape gathered in Breukelen, the Netherlands, for a LAMASUS roadshow focused on the future of farming in peatland areas. Bringing together researchers, policymakers, and practitioners, the event explored a central question: how can agriculture on low-productivity soils remain economically viable while contributing to climate and environmental goals? Peatlands play a crucial role in carbon storage, but when drained for agriculture, they become a major source of greenhouse gas emissions. At the same time, they are deeply embedded in food production systems. In the Netherlands, for example, around 20% of intensive dairy farming takes place on peat soils. Balancing these environmental and economic realities is therefore a key challenge.

2. Background

Peatlands are an ecosystem and a soil type with high potential for GHG mitigation and biodiversity conservation (Doelman et al., 2023; Loisel & Gallego-Sala, 2022). This is especially relevant for the Netherlands, where approximately 15% of the intensive dairy livestock sector is produced on peat soils (Heinrich-Böll-Stiftung & Michael Succow Stiftung, 2023) bringing several national policy discussions for partially restoring peat soils.

Since 2024, a Dutch peat-policy[i] is exploring payment options to peat-dairy farmers as a measure to reduce the environmental impact of the livestock activity through partially restoring and rewetting peatland areas. The effectiveness of this measure brings relevant questions from stakeholders who seek to understand the trade-offs between improving several environmental indicators through peatland restoration while ensuring a long-term economically viable low-productive livestock system. The macro-level context for the Dutch

[i] https://www.rvo.nl/subsidies-financiering/samenwerking-veenweide-natura-2000/categorie-2-grondwaterstand

case is provided by the MAGNET projections presented in the following section, rather than in a separate background block as in the Austrian and German deep dives.

3. Case study methods

The Dutch case study investigates how farm groups would be financially impacted by analyzing the farm income beyond the policy payment timeline. In addition, the objective of the Peatland case study is to create a national prototype of the LAMASUS toolbox. It consists of a flow of models` output information relevant to the land-dairy sector across different scales, covering the policy framework of LAMASUS macro scenarios and national policy on peatland subsidies (figure 1 - 4.1.2). This report presents the key results of the national toolbox and the stakeholders' views collected in the national Roadshow.

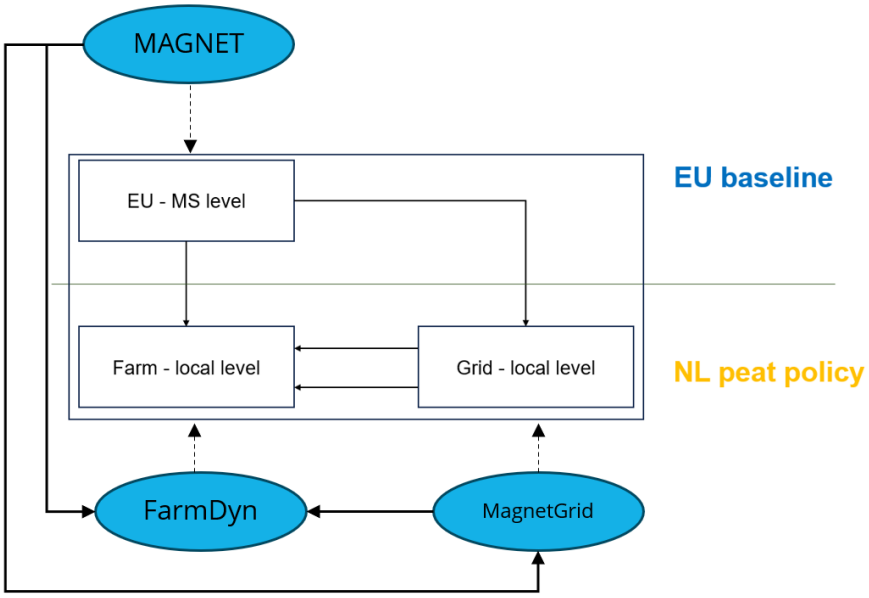


Figure 1 – 4.1.2. Concept of LAMASUS toolbox applied to the Dutch case study. The toolbox exchanges agro-economic related information in different policy scales through three main models: MAGNET at EU level, MAGNETGrid and FarmDyn at national/local levels.

4. Model toolbox Dutch results

The MAGNET model is used to generate EU-level baseline and comprehensive scenario projections towards 2050 on several agro-economic indicators that are relevant for the dairy sector with consequences at farm level (e.g. farming input and output prices: Figure 2 – 4.1.2). Regarding land demand projections, Figure 3 – 4.1.2 shows larger grassland reduction in the Environmental Ambitions scenario due to the several area-based target measures (e.g. afforestation) assumed on that comprehensive macro-scenario. As consequence, strong impact on the land rents price is verified.

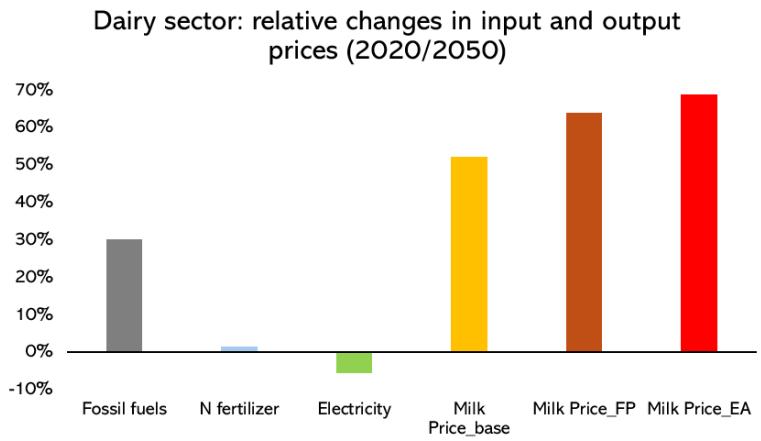


Figure 2 – 4.1.2. Changes in input and output prices relevant to the dairy sector derived from MAGNET. Scenarios have little up to no variations on input prices (fossil fuel, N fertilizer and electricity prices displayed are based on baseline projections), but moderate variations on output milk prices.

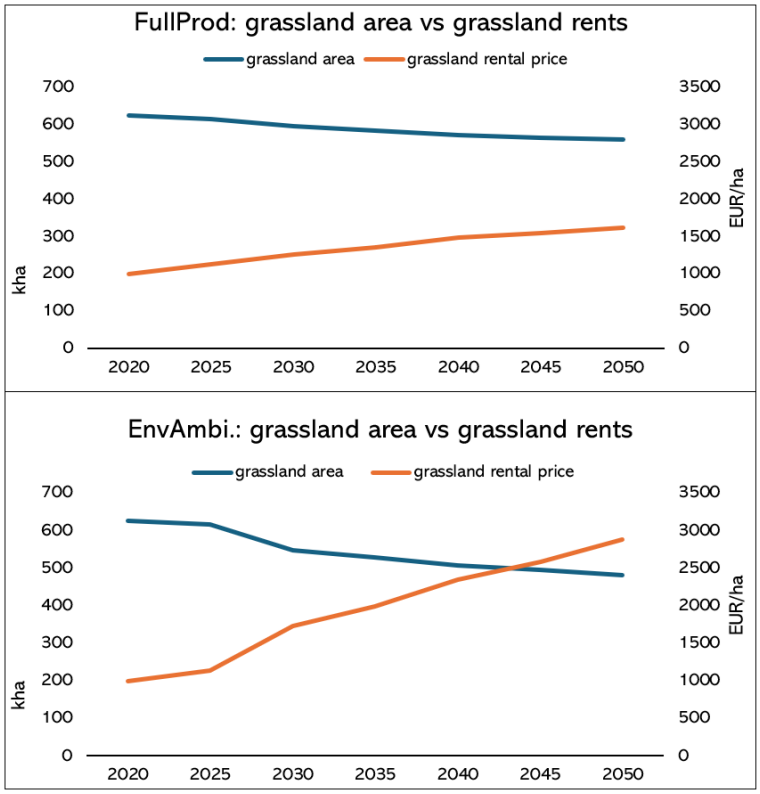


Figure 3 – 4.1.2. Temporal changes in grass area and grassland rental price in the Netherlands. Comparison between Full Productivity and Environmental Ambition scenarios.

From MAGNET land results, the case study assesses future grassland distribution and livestock productivity based on EU LAMASUS baseline and scenario projections (Environmental Ambitions and Full Productivity). The MAGNETGrid downscaling tool (hard linked in MAGNET) is employed (Diogo et al., 2019) to allocate projections on land indicators to the grid level. As a result, the projections show future grassland reduction on peat areas in

all scenarios, with the largest impact coming from the Environmental Ambitions scenario with more than 20% of grassland area reduction (mainly concentrated in Friesland region). In addition, as a post processing, the dynamics of livestock distribution are also mapped (Figure 4 – 4.1.2 – bottom part). All projections show a common increase in livestock total population around 15%, with a small decrease in areas of very high stocking density areas (> 1.8 head/ha) but with a higher increase in areas with moderate-low stocking density areas (0.5 – 0.75 head/ha).

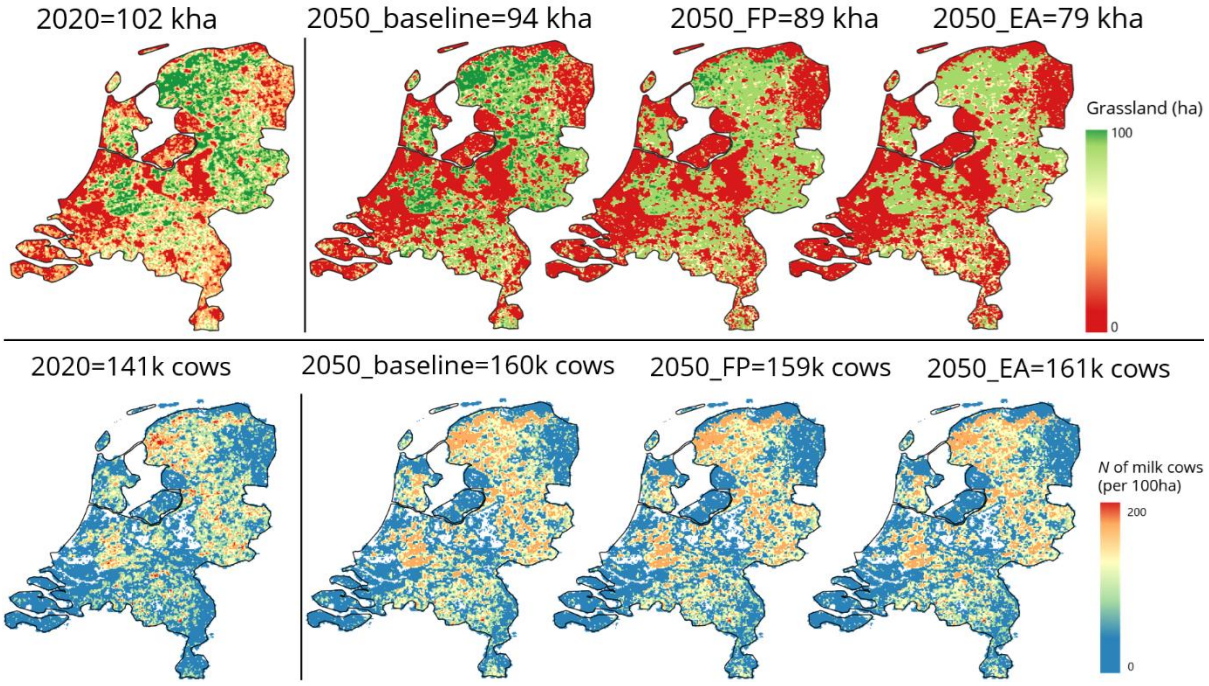
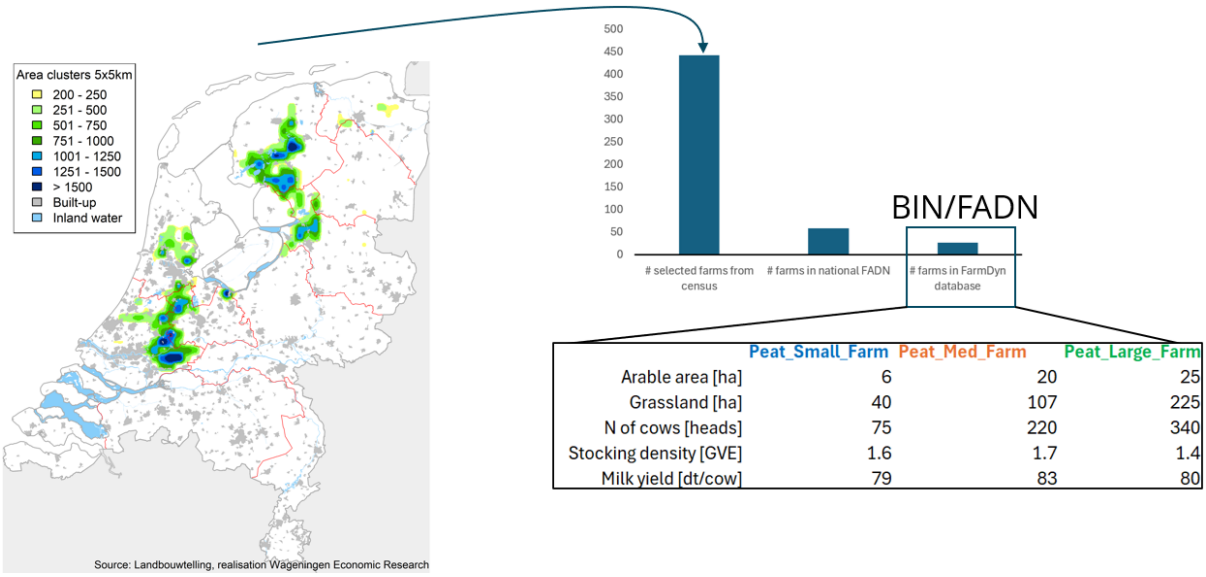


Figure 4 – 4.1.2. Upper part: spatio-temporal distribution of grass area in the Netherlands. Lower part: spatio-temporal distribution of livestock density in the Netherlands. The numbers on grass area and cattle population refers only to livestock activity on peat soils.

From grid data to farm level analysis, the case study identifies through spatial modeling of ex-post national Census data (CBS, 2024), the current regions and farms that are potentially eligible for applying to peatland payment policies (Figure 5: 4.1.2 - left-hand). Following the peat-policy criteria, the farm selection must be partnerships (groups of individual farms) of more than 200ha of grassland of which at least half of their land must be located on peat soils. From all identified farms, information is collected on key techno-economic indicators from a sub-sample (~10%) of the total eligible farms (Figure 5 – 4.1.2 – right-hand bar graph), which are matching with the BIN (*Bedrijveninformatienet*) data, i.e. Dutch FADN data [ii]. Hence, information on actual farm level livestock density, farm income, among others is summarized (Figure 5 – 4.1.2 – right-hand), which allows the creation of a simple farm typology: small,

[ii] https://www.wur.nl/nl/over-wur/ons-onderzoek/wageningen-social-economic-research/bedrijveninformatienet

medium and large farms. This classification is relevant for assessing the economic performance of different farm groups when receiving the peat-policy payment.



	Peat_Small_Farm	Peat_Med_Farm	Peat_Large_Farm
Arable area [ha]	6	20	25
Grassland [ha]	40	107	225
N of cows [heads]	75	220	340
Stocking density [GVE]	1.6	1.7	1.4
Milk yield [dt/cow]	79	83	80

Figure 5 – 4.1.2. Lef-hand map shows the spatial distribution of the number of individual farm clusters located on peat soils. On the right-hand, the number of actual farm-partnerships eligible for receiving the subsidies and their main indicators characteristics represented by a sub-sample of the Dutch FADN.

FarmDyn farm-economic model simulates farm level responses in the current (base year) and future condition (indicators derived from MAGNET 2050 baseline simulation) in different options of peatland restoration and extensification. Although there are different rewetting targets and payment options, this report shows results of payments given to farms rewetting their soils up to 20cm to the soil surface. This is the highest target proposed by the peat-policy with strong effects on grassland productivity (reduction up to 40%). The payment for this rewetting target is three years of an annual compensation of 1355 EUR/ha.

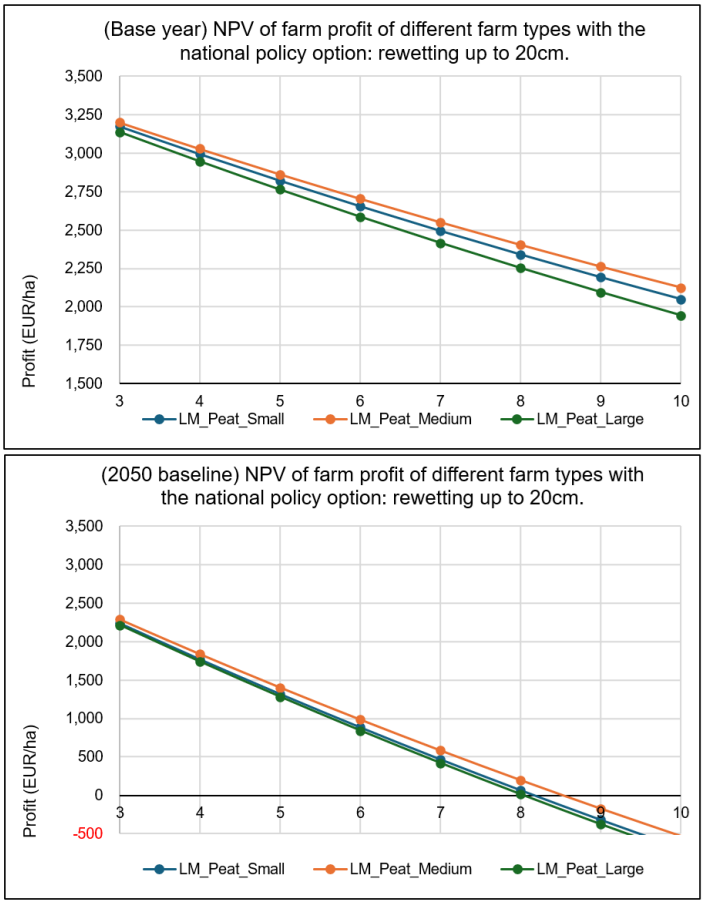


Figure 6 – 4.1.2. Base year and 2050 baseline comparison of the discounted farm profits in a scenario where farmers apply for national payments of peatland rewetting up to 20cm to soil surface level. The graph starts in year 3 (x axis), which is the last year of subsidy payment, and profit=0 (y axis) represents the base farm income in year 0 (i.e. without the additionality of the subsidy payment). Hence, if the graph lines cross the x axis to negative that represents farm income lower than the original income in year 0.

Figure 6 – 4.1.2 shows that all the farm groups have similar economic performance, with medium farms presenting slightly better economic results. In the base year condition, the adoption of the peatland subsidies for restoring the water levels up to 20cm remains economically attractive (i.e. higher present value profit than no adoption) beyond 10 years after the implementation. Differently, the 2050 baseline, farm income drops sharper than the base year condition, becoming economically unattractive from year 8 onwards. This is explained by the higher overall input costs in 2050, which reduces the income from dairy despite the higher revenues caused by the higher milk prices (+51%). Therefore, farm-level economic viability of peatland rewetting policy is highly dependent on the macro-economic conditions expressed in the comprehensive scenarios.

The results from FarmDyn show that national policy makers, when designing agri-environmental schemes for farmers, must account for short to medium-term European and International market context impacting national input and output agricultural prices (e.g. fertilizer and milk prices). In that sense, LAMASUS toolbox works as a potential platform where land-based measures at Member State level could be assessed in terms of viability of implementation.

5. Presenting the farm level results in the Dutch Roadshow

The peatland case study was presented to 11 Dutch stakeholders, composed by organic and conventional dairy farmers operating on peat soils, farmers advisors, accountants and policy advisors. The event addressed specific national topics on farm management, institutional support, subsidy structure and market conditions.

Stakeholder provided feedback to improve the reliability of the Model Toolbox modelling, including using temporal dynamic farm income modelling to generate more reliable assessment of the subsidies effectiveness. The farmers suggested that keeping low productive grassland system (after rewetting) in the original farming technical structure (before rewetting) represents a relevant income loss that is economically unviable. Therefore, farmers will likely either change their farm structure (e.g. land acquisition, increase feed imports) to keep their standard income levels or request longer term annual payments to maintain a low productive grassland system.

Farmers also expressed concerns with the compensation for restoring peatland, which is sometimes inadequate and non-indexed with fluctuating milk prices. When it comes to changes in their farm management, farmers highlighted the difficulty of reaching optimistic rewetting targets (e.g. up to 20cm to the soil surface level), whereas targets reaching up to 40cm are easier to achieve without compromising the land productivity. Participants also stressed the need for long term reliable policy support to assure finance in restoration/rewetting projects. Finally, they also claim that compensation schemes in general must be simple with a clear compensation for environmental targets, e.g. to support the protection of meadow birds.

6. Contrast with the EU-level results

The Dutch case study is already anchored in the EU-wide scenarios: the MAGNET projections in Figures 2 and 3 set the price and land-demand context, and the grassland reduction of more than 20% under Environmental Ambitions, concentrated in Friesland, is the EU-level signal to which the farm analysis responds. What MAGNET does not report is the rewetted area itself. Using GLOBIOM, the EU27 area rewetted by 2050 reaches 1.5 million hectares under Environmental Ambitions, against 753 thousand under Current Policy and 432 thousand under Full Productivity; in CAPRI the Dutch share is 149, 48 and 24 thousand hectares respectively. Because the lever is imposed as a target, these areas are set by the scenario definition rather than chosen by the models: what the macro-level analysis determines is the cost of rewetting, not whether it takes place.