

Possible proposal topics

Theme	Topic	Short description	Supervisor	Meeting time ¹
				To be discussed bilaterally
Financial management of primary and corporate firms	Dairy farmers' investment behaviour: rational or irrational?	Ex-post, we may precautionary conclude that dairy farmers after the quota abolishment did not sufficiently account for the sector level consequences of the investment behaviour of peers and institutional risks.	Jaap Sok	
	Investment theories for farm management: net present value or real options?	Real option valuation takes account of the uncertainty of predicted cash flows and of the decision maker's opportunities to react to changed circumstances (Hardaker, 2015). Apply this on a farm investment case.	Jaap Sok	
	Financial distress: theory, methods and application	Explore the concept of financial distress from corporate finance, see whether it can be applied in the agricultural sector to family farms.	Jaap Sok	
	Investment Barometer	Using databases from the Farm Accountancy Data Network to construct an indicator that predicts the likelihood of investments	Alfons Oude Lansink	
	Alternative finance opportunities for dairy farms in the Netherlands	Alternative finance solutions, such as through innovation funds, special purpose vehicles, and pension funds, get increasing attention, among others to boost the greening of the sector. What are opportunities, conditions and related costs? (with private sector)	Miranda Meuwissen, Melina Lamkowsky	
	Impact of the corona virus on financial performance in the food supply chain	The corona pandemic has and had different effects on companies in the food supply chain. The aim of this thesis is to contribute to an initial assessment of these effects. Did Corona have a particularly strong influence on certain value chains, different stages of value chains, companies, and countries? If so, how can this be explained?	Julia Höhler	
Economics of sustainability of agriculture and corporate firms	Economic and institutional aspects of 'nature-inclusive' farming	The Dutch government recently adopted the policy concept of 'nature-inclusive' farming. Would this be a viable strategy? Analyse it from the perspective of transaction cost economics.	Jaap Sok	

¹ 1 hour on 25 May in which students can talk to you to get more information abt the topic.

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	How can Dutch agriculture contribute to becoming natural gas-free?	The Dutch government wants to become natural gas-free in 2050. What role could agriculture play in this ambitious plan?	Jaap Sok	
	Greenhouse horticulture and energy management: what is the current situation?	Energy and CO2 are indispensable for greenhouse horticulture production. Can these inputs be supplied in a sustainable matter? What are new developments?	Jaap Sok	
	Environmental productivity growth in the agricultural sector	Using Data Envelopment Analysis or an index number approach, conventional productivity is augmented with environmental factors, to measure the sustainable performance of the agricultural sector.	Frederic Ang	
	Dairy cow replacement management: trade-offs between environmental impacts (GHG, phosphate) and economic performance	Analysing the trade-offs between environmental and economic impacts of dairy cow replacement management options by means of stochastic simulation.	Monique Mourits	
	Sustainability effect of use of insects to produce meat and/or eggs	Insects are currently seen as a novel and sustainable source of high-quality protein to be used as animal feed. Using a value chain approach, the environmental and economic effects of the use of insect-based protein in Dutch animal product value chains will be studied	Henk Hogeveen	
	Economic value of sensor systems in dairy farming	Comparing the economic performances of dairy farms using different or no sensor technologies. Ex-ante analysis or ex-post analysis possible.	Mariska van der Voort	
	The economic value of precision livestock in the food chain	How does precision livestock technology in the food supply chain bring (economic) value and to which actors.	Mariska van der Voort	
	Identifying successful dairy farmer	Which KPI's are indicators of successful dairy farmers. In this thesis you would work with at least milk production recording of CRV and possible other data that is collected by CRV.	Mariska van der Voort	
	Effect of CRV advise on farm performance	How does advise and product sell of CRV (breeding organisation) effect dairy farm performances.	Mariska van der Voort	
	Success factors of Digital Twins and the	Digital Twins is an emerging technology, especially in agriculture and life science. In this study you would	Mariska van der Voort	

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		be looking for ways to measure the effect on business performances.		
	The value of big data for businesses	Literature on big data argues that big data brings value to businesses. Question is how much value does this bring to businesses.	Mariska van der Voort	
	Cost- effectiveness of blockchain technology	Exploring blockchain business cases in Dutch fisheries The application of blockchain as a transparency system could possibly help to overcome potential shortcomings in Dutch fisheries. Blockchains can be used to keep track of transactions within a network of participants and therefore increase transparency, trust, and possibly add value to the fish products. However, introducing a blockchain system in Dutch fisheries might involve a significant investment. This raises the question if and where the introduction of blockchain can be cost-effective in the Dutch fisheries.	Mariska van der Voort	
	Cost price analysis of alternative feed crops for dairy farming	Define schemes with crop operations, develop a calculation module based on Activity Based Costing (ABC) and perform an analysis to assess the potential of crops like field beans and fodder beets for dairy farming.	Helmut Saatkamp Maarten Kik	
	Economic valuation of soil quality parameters		Helmut Saatkamp Maarten Kik	
	Economic value of externalities	Animal production, particularly intensive animal production, aims at producing goods (e.g. meat, eggs) at highest efficiency, i.e. at lowest costs in monetary terms. However, part of the total costs have been externalized and are a burden for society, e.g. pollution, emissions, decreased animal welfare. At this moment, insight is scarce on the economic value of these externalities, as well as the value of reducing these societal problems. Moreover, these externalities and associated costs differ per species and per country. Hence, policy measures might work-out differently for other species or countries respectively. The aim of this thesis research is to (1) make an inventory of externalities for different	Helmut Saatkamp	

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		species (i.e. poultry and pigs), (2) perform a first indicative quantification of their economic value.		
	Corporate sustainability of cooperatives vs. privately owned firms in the food supply chain	Cooperative values could lead to the assumption that cooperatives are particularly sustainable. At the same time, it is claimed that cooperatives have less strong brands and tend to produce undifferentiated mass products. A credible communication of sustainability could be a way for cooperatives to differentiate themselves from competitors. Analyse and compare corporate sustainability between cooperatives and privately owned firms. Can and should cooperatives claim to be more sustainable?	Julia Höhler	
	What is the value of progesteron measurement on farms	Together with Lely Industries, you are going to look at the value of measure progesteron (a reproduction hormone) in milk. Existing simulation models will be used to estimate the value of more precise information	Henk Hogeveen	
Risk analysis and risk management in food supply chains	Leverage effects of financial risks in case of business interruption due to animal health/food safety issues	Large livestock farms are heavily financed and highly specialised, making them more vulnerable to disruptions in production (dioxin detection/ contagious animal disease control). How vulnerable?	Monique Mourits	
	Impact of farm exits on insect supply chains	Recently, many insect farms have started up, but, at the same time, many farmers quit. What is their story? What is the impact on the value chain?	Miranda Meuwissen, Hilde Niyonsaba	
	Characterising and categorising risk in agriculture	The well-cited book by Hardaker et al identifies five categories of risk in agriculture: price, production, financial, personal and institutional. Agriculture has changed, however, and hence this classification is up for revision (e.g. "data" or IT risk is a novel type). Using a combination of empirically reported survey data and a literature review, this study will attempt to update the classification of risk in agriculture from a 2020 perspective.	Yann de Mey	
	Drivers of EU farmers' risk management tools portfolios	This thesis will econometrically explore the driving factors behind how EU farmers select various risk management instrument. Particular attention will be	Yann de Mey	

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		given the diversity in tools (e.g. insurance versus diversification) and their interaction.		To be discussed bilaterally
	An econometric analysis of risk in EU agriculture	Based on the European FADN dataset, this thesis will explore risk in EU agriculture using panel data econometric models.	Yann de Mey	
	Weather Risks Assessment for Crop Insurance in Germany	Heat and drought extremes put the quantity and quality of food products at risk and agricultural insurance is among others a risk management tool to reduce the financial exposure to these risks. The increasing amount of open access big data on environmental conditions and crop growth enable new insurance markets to be developed. Here, a precise understanding of the spatial and temporal distribution of weather risks is required. In this thesis, student will match crop growth and weather data to map spatial and temporal patterns of extreme heat and drought conditions during the most vulnerable crop growth phases. Copula analysis will be used to analyse tail risks in crop production.	Tobias Dalhaus	
	The impact of weather extremes on the meat processing sector	Extreme weather impacts both crop and livestock production causing profit shock at the farm level. These income shocks can potentially be translated along the food value chain. For instance, livestock farmers adjust their herd size by selling less productive animals. Thus, weather extremes potentially impact the profits of actors in the meat processing industry. In this master thesis ORBIS balance sheet data on firm profits in the meat processing industry will be matched with data on extreme weather. Fixed effects panel regression will be used to quantify the impact of weather extremes on profits. The results can serve as decision support in this industry.	Tobias Dalhaus	
Resilience	Trends in the resilience of agricultural systems	Resilience is a broad concept that needs understanding of multiple dimensions, such as income and environmental performance, but also gender balance, # forced farm exits, data on infrastructure, # tourists in a region, migration, # GP-visits related	Miranda Meuwissen/Thomas Slijper	

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		to psychological health. Do you like to work with data at various levels (micro, regional, national)? Then this is the right topic for you!		
	Impact of mixed farming systems on value chain organisation and performance	From a resilience perspective there is increasing interest in developing mixed farming systems (in contrast to specialised systems). This has implications for value chains. What are expected costs, benefit and risk implications for e.g. dairy chains?	Miranda Meuwissen, Guy Low	
Analysing efficiency of farms and firms	Efficiency analysis of corporate firms	Benchmarking the performance of corporate firms using Data Envelopment Analysis. Particular interest in international airlines, banks, agribusiness firms	Alfons Oude Lansink / Frederic Ang	
	Profits and productivity in the agricultural sector	Using Data Envelopment Analysis and index numbers, profits and productivity are monitored in the agricultural sector	Frederic Ang	
	The effect of dairy cow longevity on farm efficiency (II)	Determine the effect of increased longevity on farm efficiency using data envelopment analysis. Dairy farm accountancy data over several years will be available.	Monique Mourits & Ruozhu Han	
	Generic associations of herd characteristics and management with cattle longevity	Analysing generic associations between herd characteristics and management related to dairy cow longevity by the use of a factor analysis, using the registered herd data.	Monique Mourits & Ruozhu Han	
	To what extent differ organic dairy farms in their efficiency to conventional farms?	Determine the effect of organic farming on farm efficiency using data envelopment analysis. Dairy farm accountancy data over several years will be available.	Monique Mourits & Ruozhu Han	
	Heifer rearing management in relation to overall economic performance	Heifer rearing is often considered as a kind of risk management tool in dairy farming; by raising more replacements than needed, farmers are able to replace a dairy cow rather quickly, if needed; what is the impact of this "excessive rearing" on the overall economic performance? Data analysis or stochastic simulation	Monique Mourits & Ruozhu Han	
	The effect of dairy cow longevity on farm efficiency	Determine the effect of increased longevity on farm efficiency using stochastic frontier analysis. Dairy farm accountancy data over several years will be available.	Mariska van der Voort	

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	Identify peer dairy farmers	Studying successful farmers based on milk production recordings and identify realistic peers	Mariska van der Voort	
	Market potential for European companies to produce and market insects in feed and food	The use of insects in feed and food is of increasing interest in Europe. However, currently there is a gap between demand and supply. How to overcome this hurdle, and what are market potentials is the topic of this study	Ine van der Fels-Klerx	
	Effect of microbial applications on potato farm efficiency and sustainability	<p>Eco-efficiency analysis: Comparing a baseline scenario of production with an innovation production scenario. In specific, the baseline scenario is conventional potato production and in the innovation scenario microbial applications (Micosat) are used. The case studies will be approached by: (i) Interviews with potato farmers and other relevant stakeholders, (ii) collaborative data collection/retrieval, (iii) Quantitative data analyses, e.g. LCA analysis in combination with DEA or other eco-efficiency DEA</p> <p>The aim of the analysis is to quantify the eco-efficiency changes of farms using microbial applications. Steps that need to be taken are:</p> <ul style="list-style-type: none"> - Getting familiar with case study (https://www.micosat.nl/en/home-2/); - Description of the case study; - Identification of sustainability indicators; - Collecting data on the indicators and farm efficiency - DEA in R: Compare situation in the baseline and with the use of Micosat microbiome applications. 	Frederic Ang	
	The use of big (farm) data to benchmark farms		Henk Hogeveen	
Behavioural economics	Too good to be true: How could the Fipronil crisis happen?	Could we explain by behavioural economic concepts how the Fipronil crisis became so large?	Jaap Sok	
	Behavioural drivers of innovative potato farmers	How do potato farmers that apply Micosat (and are therefore considered to be innovative) differ from conservative potato farmers? The case studies will be approached by: (i) Interviews with potato farmers,	Frederic Ang	

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		<p>data collection/retrieval, and (ii) Quantitative data analyses: e.g. DEA, regression analysis. The aim of the analysis is to identify the behavioural drivers and farm characteristics (including efficiency) that distinguish innovators early adopters from laggards. Steps that need to be taken are:</p> <ul style="list-style-type: none"> - Getting familiar with case study (https://www.micosat.nl/en/home-2/); - Identification of behavioural drivers; - Collecting data on farmers' drivers and efficiency - Analysing data in R. 		To be discussed bilaterally
	Incentive mechanisms to stimulate mycotoxin management	Evaluation of current intention of Dutch wheat farmers to change their agronomic management for prevention and control of FHB and related mycotoxins under different incentive mechanisms, and their related farm(er) characteristics. Data has already been collected; focus will be on the analyses of 8 different incentive mechanisms and their impact on intention and hence expected "success rate".	Monique Mourits	
	Intention to increase dairy longevity	What drives/motivates dairy farmers to increase their dairy longevity?	Monique Mourits	
	Co-designing an economic experiment with farmers	A better understanding of behavioural mechanisms of decision-making can increase the effectiveness of various agricultural policies. Despite the success of experimental approaches for policy advice in public economics, their mobilisation in agricultural policy design and evaluation has remained limited. The aim of this thesis is to co-design an experiment that helps our understanding of farmers' decision-making behaviour. Examples: role of social norms in decision-making (e.g., fairness), heuristics or cognitive biases (e.g., hyperbolic discounting, ambiguity, decoy effect).	Julia Höhler	

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	Risk preferences and innovation in Dutch arable farming	Survey data will be used to analyse the impact of different risk attitudes on innovation in the Dutch arable farming sector.	Julia Höhler	
Economics of animal welfare and animal health	Extending conventional efficiency measures with animal welfare	Animal welfare has a private and public value that is non-marketed. Using Data Envelopment Analysis, conventional efficiency measures are extended with proxies of animal welfare, to compute a holistic performance measure.	Frederic Ang	
	Economic impact of African Swine Fever in The Netherlands	Keywords: collaboration with the pig sector, estimation of economic impact (on trade and prices) for the entire pig value chain in The Netherlands, Dutch language	Helmut Saatkamp	
	The economics of Animal Welfare in Dutch poultry production	Keywords: estimation of improvement of Animal Welfare on prices, consumer welfare/budget	Helmut Saatkamp	
	Value of real-time animal welfare information in the dairy value chain	Currently there are many options to measure animal welfare at dairy farms. This information does have value for stakeholders in the value chain, for instance by having more (real-time) insight in animal welfare. What is the value for dairy processors and retail organization for such features	Henk Hogeveen	
	Mycoplasma bovis	Estimation of the economic impact of Mycoplasma bovis, an emerging pathogen in European dairy herds.	Bart van den Borne	
	Multi-criteria decision analysis of dry-off strategies in dairy cows	In the past, drying-off dairy cows has commonly been done using long-lasting antimicrobials. The debate on prudent antimicrobial usage necessitates the application of alternative non-antimicrobial strategies to dry off dairy cows at the end of the lactation. However, those may come with reduced udder health and animal welfare in the next lactation. This project will evaluate all the aspects related to drying-off dairy cows using a multi-criteria decision analysis and provide a ranking of preferred dry-off strategies	Bart van den Borne	
	Economic impact of zoonoses in developing countries	Zoonotic diseases impact the productivity of both animals and humans, especially in developing countries where the income of small animal holders	Bart van den Borne	

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		heavily depends on the productivity of their animals. This study will determine the economic impact of zoonotic diseases at country level.		
	Disease burden of Livestock-associated MRSA	Livestock-associated MRSA can cause diseases in humans. This project will assess the disease burden of the pathogen for the Netherlands	Bart van den Borne	
	Cost-utility analysis of an intervention to a zoonotic disease	Modelling the cost-effectiveness of an intervention to mitigate the public health burden of a zoonotic disease (disease can be chosen by the student).	Bart van den Borne	
	Farm-economic animal welfare traits of broiler production and their consumer valuation	Keywords: not all production traits have the same impact on improvement of animal welfare and/or production costs; aim: identification of the 'optimal' set of these traits	Helmut Saatkamp	
	Economic impact of production disease in dairy cattle	Modelling the economic impact of production diseases in dairy farms taking into account the interaction between production diseases.	Mariska van der Voort	
	Economic impact of BVD on Dutch dairy farms	Estimating the economic impact of BVD on Dutch dairy farms. Dataset over the last 10 years comes available of dairy farms participating the BVD program in the Netherlands	Mariska van der Voort	
	Economic optimal feed efficiency	Determine the economic optimal feed efficiency based on the simplified definition of feed efficiency (i.e. kilograms of daily milk produced in relation to the minutes of eating time). The aim is to validate the estimate of feed efficiency based on sensor data and estimate the value of a feed efficiency ranking for farm management.	Mariska van der Voort	
	Consumers' willingness to pay for precision livestock farming	In this study you will explore the economic value of potential farm animal welfare improvements due to Precision Livestock Farming. This will be achieved by investigating the willingness to pay (WTP) of Dutch consumers for potential increases in FAW levels due to PLF associated with dairy products. The FAW aspect will be limited to one of the most important FAW issues in dairy production: sub-optimal mobility, commonly referred to as "lameness".	Mariska van der Voort	

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	Inventory, quantification and analysis of trade flows of animals and livestock products within the EU	Keywords: im/export of livestock commodities imply potential cross-border and spread risks of animal diseases, anti-microbial resistance, etc.	Helmut Saatkamp	
	Economic aspects of Prudent use of antihelminths in tropical agricultural systems		Henk Hogeveen	
	Costs and health burden of the rabies outbreak in Indonesia of 2019		Henk Hogeveen	
	Development of sensor-based KPIs to monitor animal disease on dairy farms		Henk Hogeveen	
	Economics of early detection of lameness in dairy cattle		Henk Hogeveen	
Economics of plant health	Econometrics of damage control productivity: the case of multiple pests	Based on production economic theory, damage abatement models are aimed at modelling the damage controlling aspects of pesticides properly. The existing literature, however, has not explored the potential interaction between different damaging agents and the respective pesticides used.	Yann de Mey	
	Assessing costs and benefits of risk mitigation options across EU with respect to regulated plant pests or diseases	Related to the control of regulated plant pests or diseases as Candidatus Liberibacter solanacearum (affecting a.o. tomato, potato, carrots) Xylella fastidiosa (affecting a.o. grapevines and olive trees), Brown Marmot Stink Bug (fruit trees), Pine Wood Nematode (forests).	Monique Mourits	
	When is the control of a plant pest as Pine Wood Nematode effective?	Evaluating the cost and benefit / effectiveness of various control options: the case of Aquitaine (France). Model study	Monique Mourits	
	Risk assessment of emerging non-native pests and diseases threatening European forests	Evaluation of the socio-economic impacts in case of an emerging non-native pest invasion.	Monique Mourits	
Economics of food safety	Financial impact of food safety incidents or crisis	To estimate the financial impacts from a food safety crisis that happened in the past, eg E colie, horse meat fraud. Case to be selected by the student	Ine van der Fels-Klerx	

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	Multi-criteria decision analysis (MCDA) in food safety risk management	Assessing the suitability of MCDA for food safety risk management during crisis and/or for strategic interventions by applying it to a historic food safety crisis case (such as, for example, the fipronil crisis in the Netherlands but another topic may also be chosen).	Ine van der Fels-Klerx or Bart van den Borne	To be discussed bilaterally
	Optimizing monitoring and analyses of food safety hazards in the chain	To optimize (linear programming) the cost-effectiveness of monitoring food safety agents in the food chain.	Ine van der Fels-Klerx	
	The use of automatically generated data to audit farms	Look at the current farm auditing schemes that are used and study the costs of an auditing system. Look at the potential to use automatically generated farm big data (e.g., based upon sensor systems) to carry out (part) of the certification process and calculate the change in costs of the certification system	Henk Hogeveen	
Own research idea			Miranda Meuwissen or Monique Mourits	