



GEORG-AUGUST-UNIVERSITÄT
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Development and implementation of a simulation game for the introduction of a revised Fertilizer Ordinance in Germany

Innovative Solutions for Sustainable Nitrogen Management

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Motivation

Initial situation

- Implementation of Nitrates Directive in Germany has been currently revised (→ Fertilizer Ordinance)
- Farmers face considerable tightening of regulations, leading amongst others to
 - increased need to export excess manure for livestock producers
 - higher technical requirements
 - stricter enforcement
- Instruments needed to moderate and communicate changes to relevant stakeholders



Simulation Game

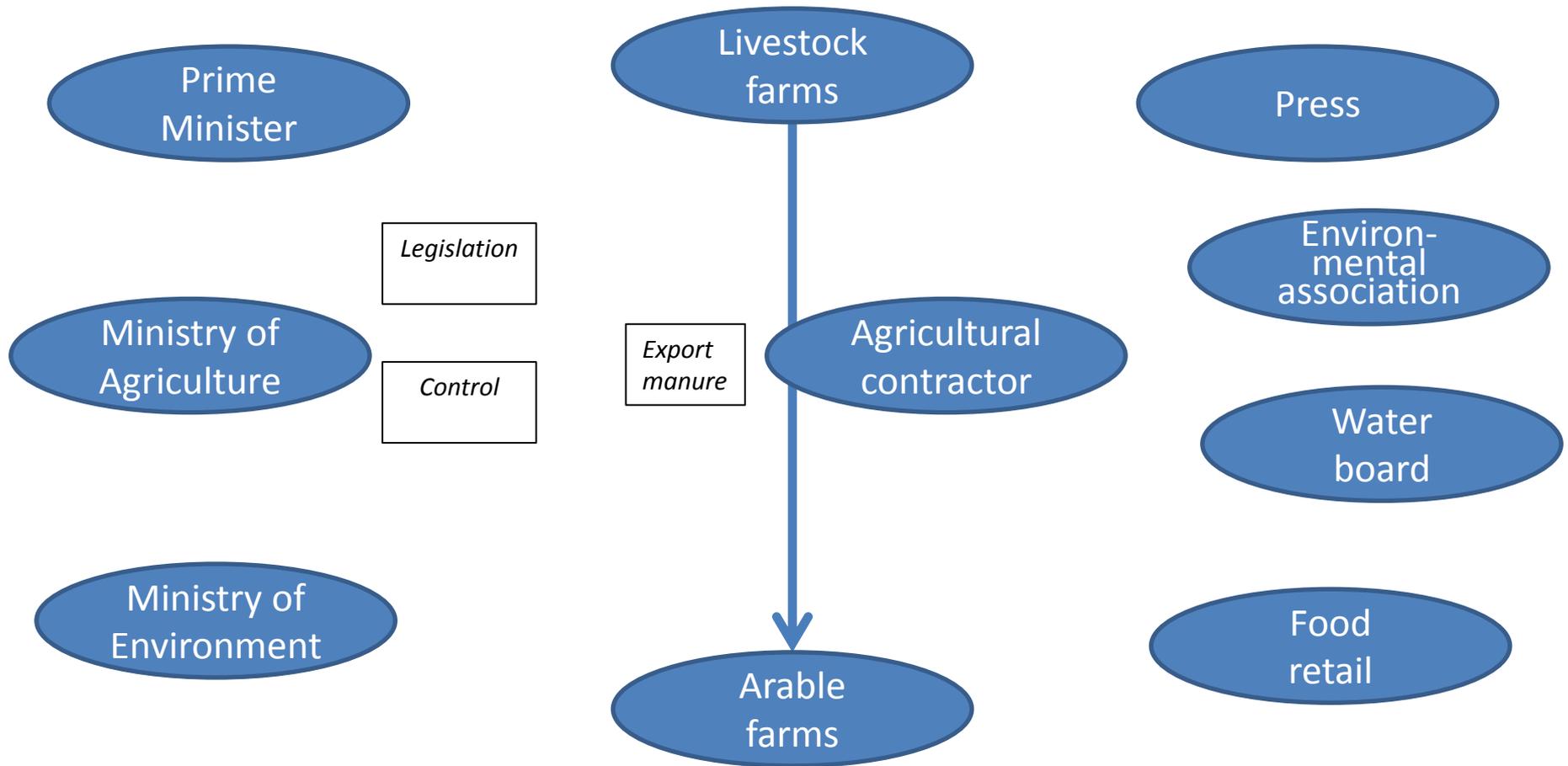
Introduction

- Tool to simulate the reality
- Different players interact in a fictitious but realistically simulated environment
- Participants
 - ...can test different strategies without risk .
 - ...gain insights into the motives and strategies of other stakeholders.
 - ... (may) learn to better cope with real life problems.
 - ...(may) reconsider their attitudes and behaviour.



A Simulation Game on the Fertilizer Ordinance

Simplified overview of players and interactions



Simulation Game

Questions

- Can farmers cope with the requirements of the new fertiliser ordinance?
- How can communication between different stakeholders be improved?
- How do the up- and downstream sectors react?



Simulation Game

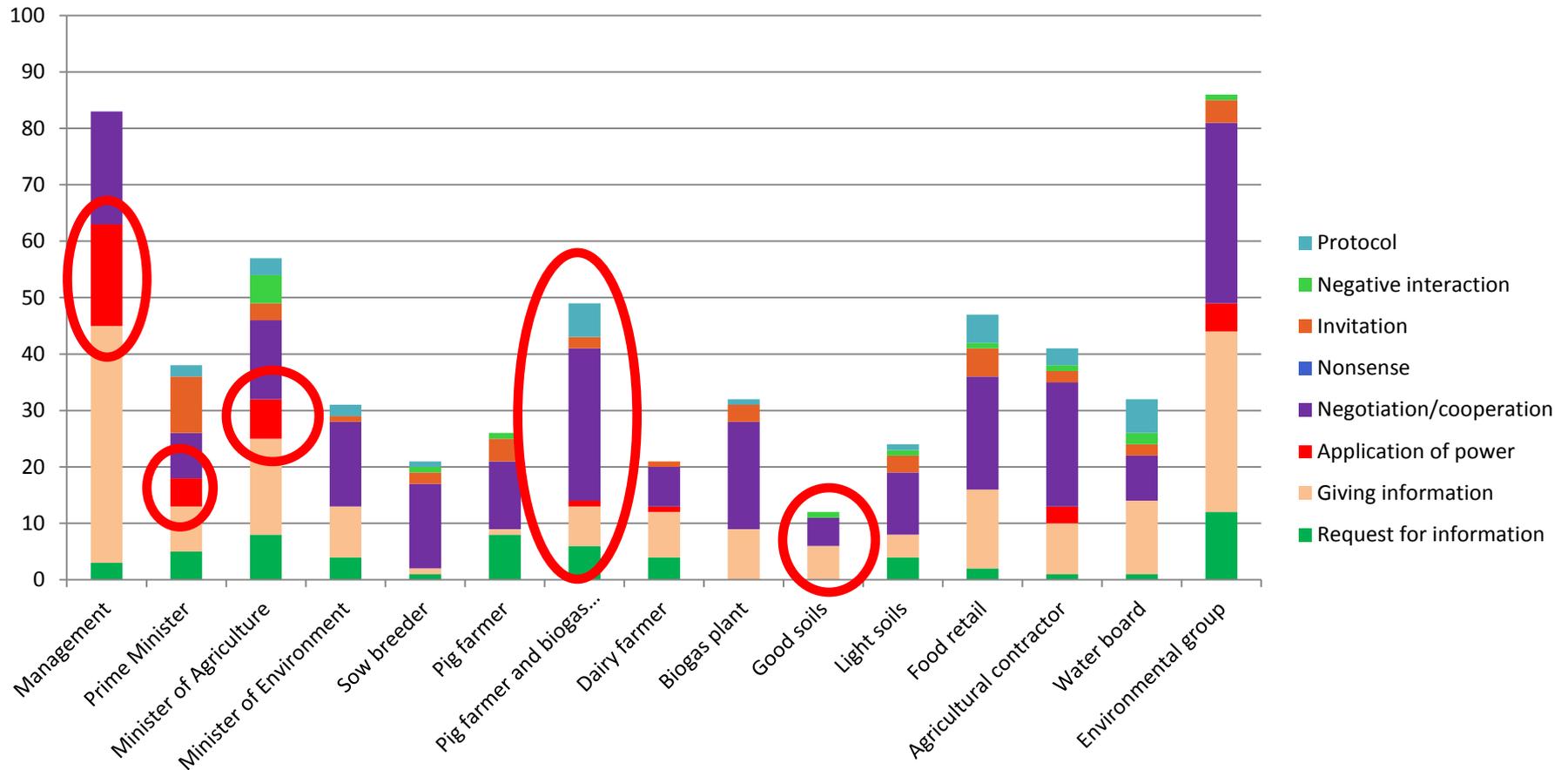
First application

- 45 agriculture students
- 13 different actors
- Management team of experts
- Starting situation - old Fertilizer Ordinance was in place, later new directive was introduced
- Interviews with participants after the game



Quantitative results

Classification of the messages sent to other groups



Actual number of messages per class



First results

What did it achieve?

limited willingness for long-term cooperation to import manure on arable farms was evident

the participants had not been familiar with the expected changes in the Fertilizer Ordinance

the simulation game increased knowledge about the new directive and the need to reduce emissions

no understanding of and even anger in regard to the agricultural policy

a change of roles enabled an understanding of the different positions and views



Conclusion and outlook

- Efficient implementation of the Fertilizer Ordinance is required
- Simulation game is a suitable tool to moderate the changes due to revised implementation of the Nitrates Directive.
- In the future, simulation games shall be carried out with affected stakeholders



Simulation Game



Thank you for your attention!



Simulation game

Actions

- The dubious dumping offer of a manure transport company was seriously considered.
- The water board could not conclude an agreement with the farmers, but had to build a pipeline from another drinking water fountain.
- On the first weekend, when the amendment to the Fertilizer Ordinance was still being politically discussed, farmers were less likely to make changes to the legislative proposals but, like all other actors, demanded financial support.



Quotations from the interviews

“I had not even take any notice of the water company before.
I only became aware of the problems of the water company in the
simulation game and I am now thinking a bit differently about its situation.”
(Minister of the environment)



Quotations from the interviews

“Lessons learned? You have to go to the farmers and help them. You should definitely be cooperative, try to keep your customers [...] making fair prices. It is important to response to the need of the individual farmers especially in our difficult times when we are e.g. facing the milk crisis ...”

Agricultural contractor



Quotations from the interviews

“Really, I should represent the Ministry of the Environment? No please! At home, there was a lot of laughter [...] let’s say due to the new legal requirements, we are not currently very positive about the Ministry of Environment or the Ministry of Agriculture in Lower Saxony [...]. However, the structure of thoughts has already changed. The aims and mission of the Ministry of Environment became clear and are now more reasonable for me. For the public, the Ministry’s actions are also very important. This however is often not seen by the people[...] This was also a development for me“

Minister of the Environment



Quotations from the interviews

“Only few farmers consider these aspects. The participation in the simulation game was a very strong experience because you really get into the situation of the Ministry and you can see and understand all aspects of the problems that may arise from a change in law. I was really shocked.

There are huge problems.“

Minister of the Environment

