Jana Schulz[1], Lisa Rogoll[1], Carola Sauter-Louis[1], Katja Schulz[1]

[1]Friedrich-Loeffler-Institut, Institute of Epidemiology, Greifswald / Insel Riems, Germany

FRIEDRICH-LOEFFLER-INSTITUT

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Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health

Participatory Modelling meets African Swine Fever
- Systems Thinking in Action -

Methodology.

Participatory modelling process.

- Identify project goals.
- Identify and invite stakeholders.
- Discuss challenges in ASF control.
- Identify key variables to measure success of ASF control.
- Build conceptual model.
- Discuss potential solutions.
- **Future:** Present results to other stakeholders and decision makers.

Background and objectives.

African swine fever (ASF) is a viral disease that impacts a range of suid species, including domestic pigs and Eurasian wild boar. Despite extensive efforts by various stakeholders, ASF has significantly spread across Europe in the past decade. Controlling ASF in wild boar populations presents a complex challenge, necessitating an interdisciplinary approach to fully grasp the situation and enhance communication among stakeholders. To address this, a series of participatory modelling workshops took place in both an ASF-affected and non-affected region of Germany. These workshops brought together stakeholders from public institutions, forestry, nature and animal conservation, the food industry, and agriculture to collaborate on identifying potential solutions for optimizing ASF prevention and control.

Results.

Communication | Resources | Effectiveness of control strategies | Legal framework | Awareness | Existential fears | Preparation and prevention
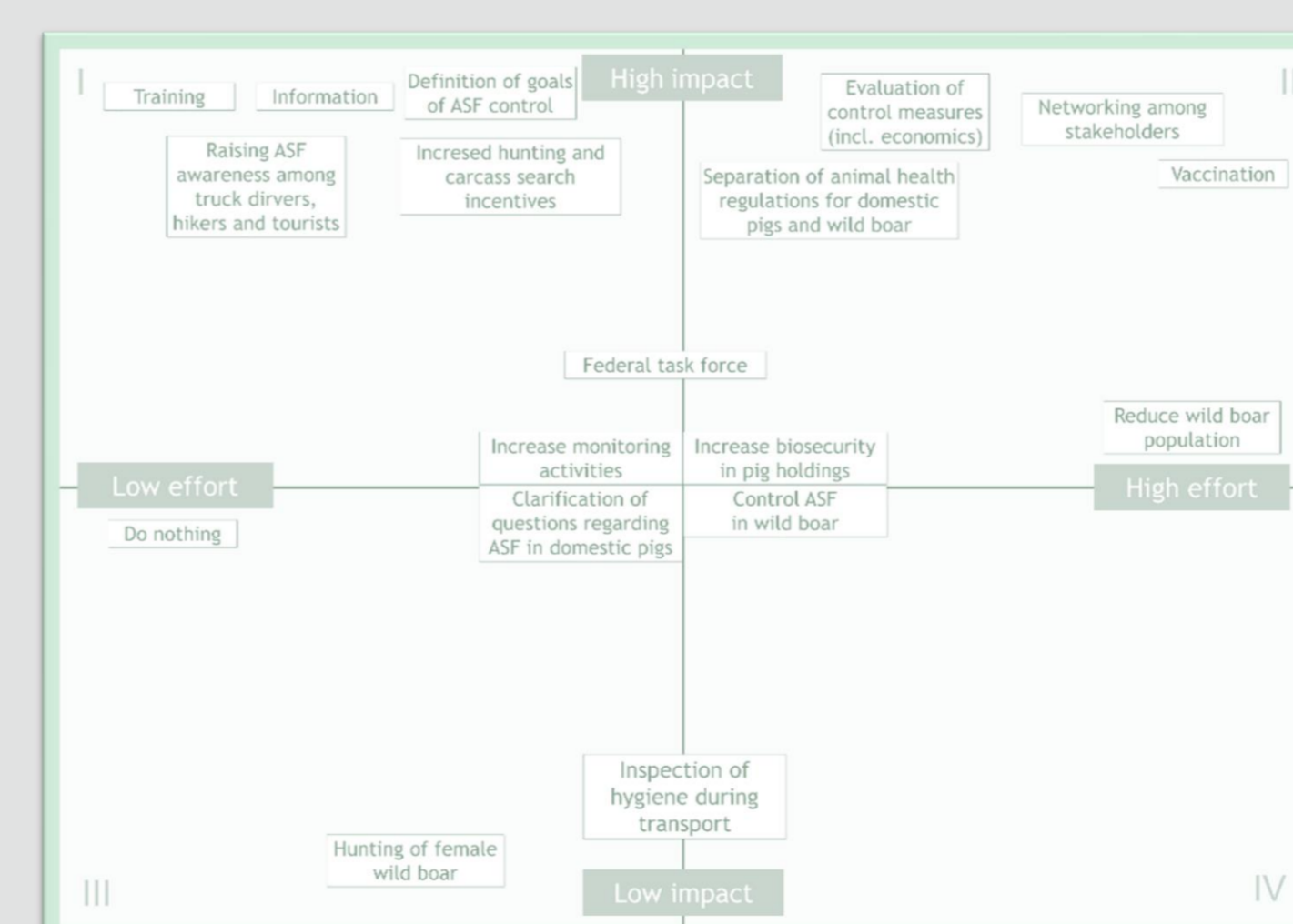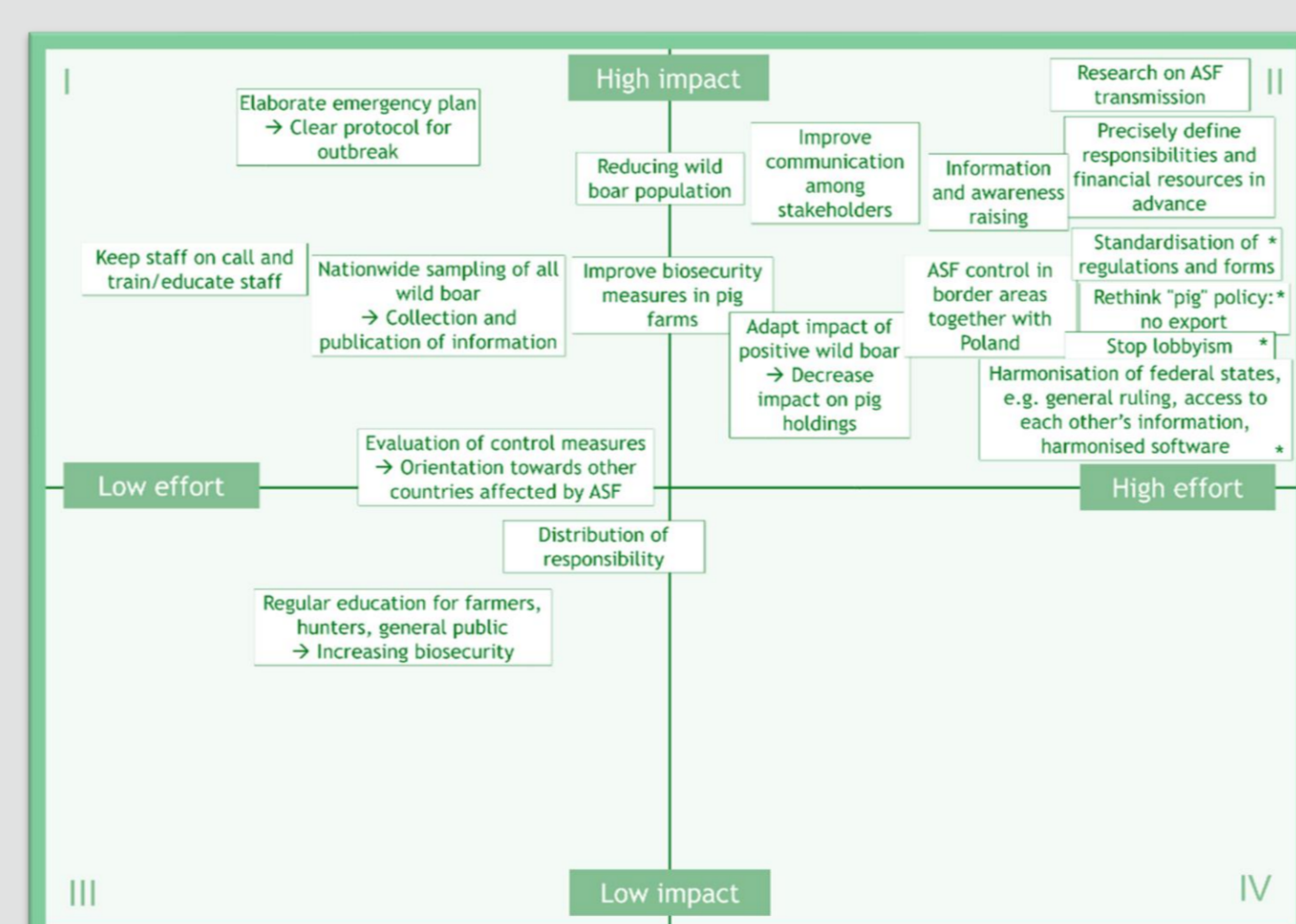
Challenges in ASF control discussed by the workshop participants in an ASF affected (dark green) and non-affected (dark and light green) area of Germany.

Amount of funding in vaccine research | Number of ASFV positive wild boar | Number of operational and administrative staff | Level of biosecurity | Number of ASFV positive cases in domestic pigs | Number of ASFV positive cases in wild boar

Identified **key variables** to measure success of ASF control as basis for the development of three individual Causal Loop Diagrams (CLDs) (dark green – ASF affected area, light green – non-affected area) to measure success of ASF control.
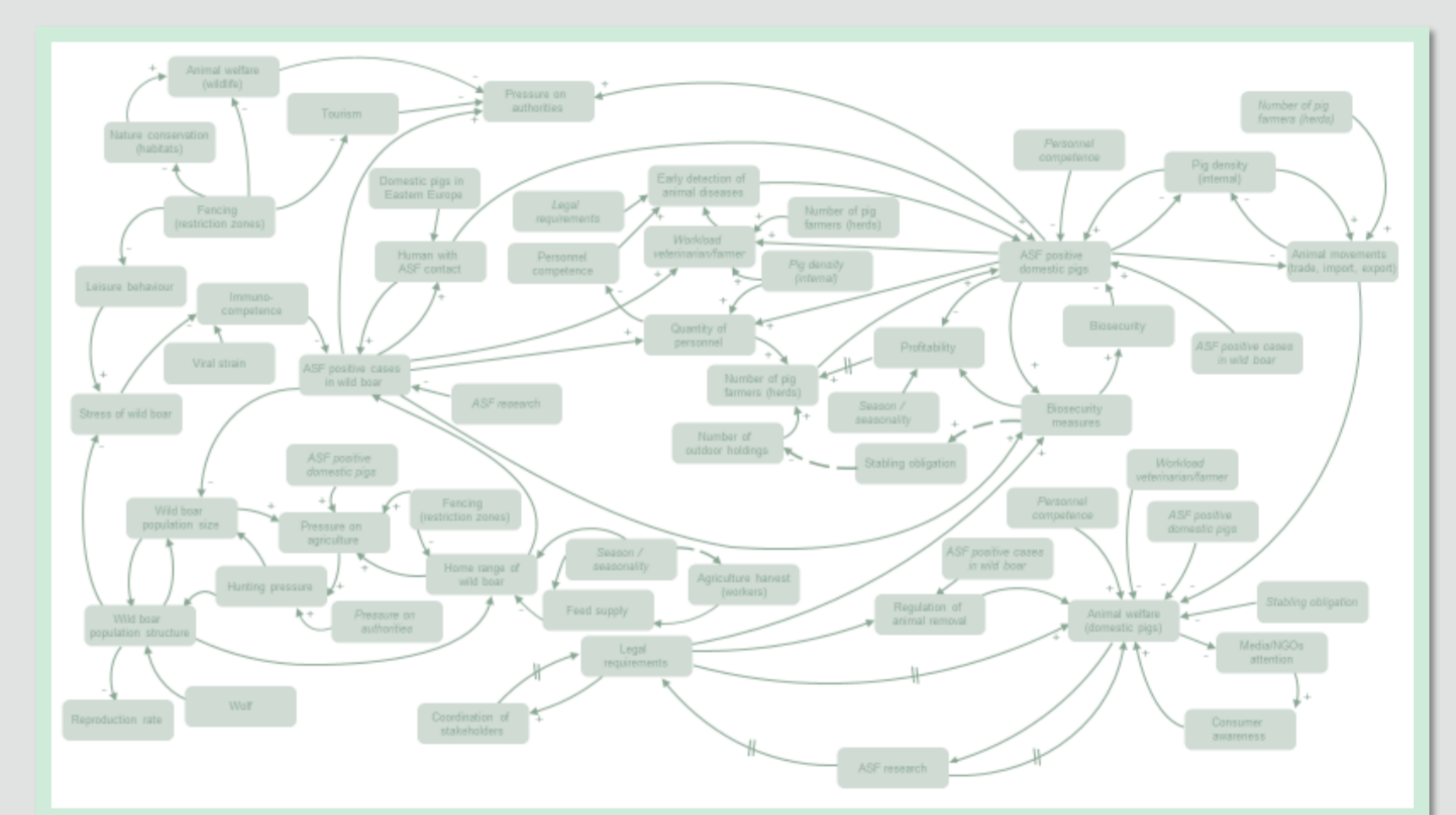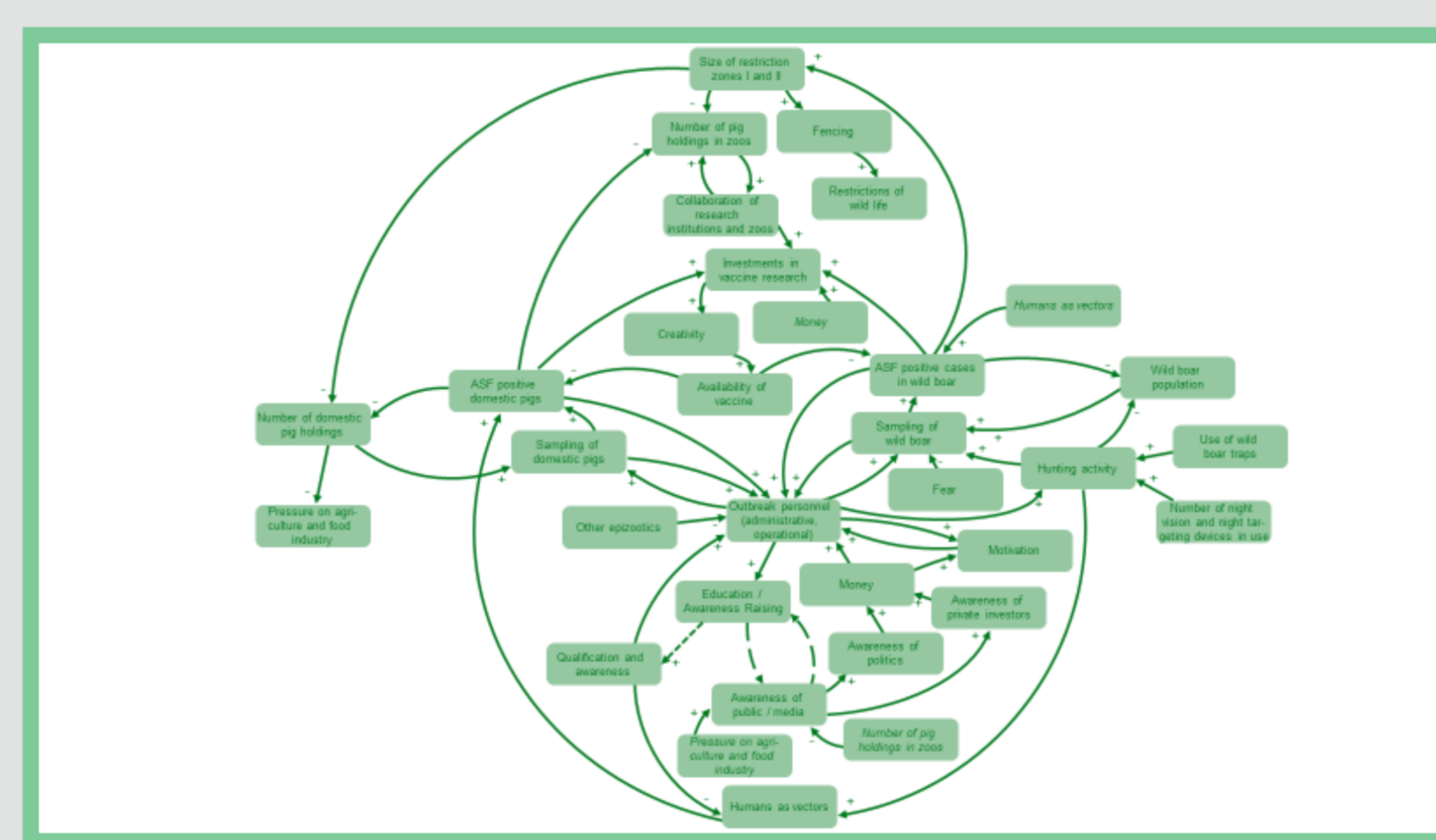
Combined CLDs of ASF control as conceptual model developed based on identified **key variables** (dark green – ASF affected area, light green – non-affected area) to measure success of ASF control.

Potential solutions to enhance ASF control discussed by the participants using an impact-effort diagram (dark green – ASF affected area, light green – non-affected area).

Conclusions and outlook.

The workshops have emphasized the significant role of transparent and rapid communication among all stakeholders in effectively responding to ASF. The qualitative models present an opportunity to enhance communication and collaboration among stakeholders, but also with scientists and policy makers. By providing a structured and data-driven framework, these models facilitate a more effective exchange of information among stakeholders, scientists and policy makers. Thus, the approach enables the development of innovative, comprehensive, and adaptive solutions, also in regions/countries that have not yet experienced ASF by enabling them to better prepare for potential outbreaks.

Jana Schulz, PhD

jana.schulz@fli.de