



Preparation for the Control of African Swine Fever in Wild Boar through Participatory Modelling

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Key words

ASF, Wild Boar, Stakeholder Analysis, Participatory Research, Veterinary Public Health, Wildlife Disease Control, Crisis Management

Aim of the study

African swine fever (ASF) remains a pressing threat to Switzerland's domestic pig and wild boar populations. Effective control of ASF in wild boar is particularly complex due to ecological, structural, and societal factors, and the involvement of diverse stakeholders with varying interests. The aim of this project was to improve preparedness for a potential ASF incursion by identifying and analyzing relevant stakeholders and co-developing context-specific intervention strategies using participatory approaches. Through stakeholder mapping and participatory modelling, the project sought to capture stakeholder perspectives, evaluate implementation challenges, enable mutual sensitization, and create a foundation for robust, socially supported control strategies.

Material and methods

This project employed a two-phase, participatory, and qualitative and semi-quantitative research approach to improve preparedness for ASF control in Switzerland's wild boar population. The study combined stakeholder mapping, expert interviews, focus group discussions, and participatory workshops to identify relevant actors, understand their perspectives, and co-develop and rank strategies for ASF response. In the first phase, we conducted a comprehensive stakeholder analysis using document review, semi-structured expert interviews, and a participatory stakeholder mapping approach. Stakeholders were identified and categorized using the Mendelow Power-Interest Grid and a complementary role-based framework distinguishing between "affecting" and "affected" actors. This informed the second phase, the recruitment of relevant actors through sector-specific focus group discussions and the participatory modelling processes that was conducted in parallel in two geographically distinct regions in Switzerland. Each modelling process consisted of a series of three workshops in which regional stakeholders collaboratively identified, assessed, and prioritized ASF control measures for wild boar, using systems thinking approaches. Workshop outcomes were digitized and analyzed using the iMODELER software, including influence and time dynamics analyses. Finally, a joint cross-regional workshop was held to present and discuss the consolidated results. The process was evaluated by participants using a standardized framework assessing feasibility, value, and potential impact.

Results and significance

The stakeholder analysis identified key actors across federal and cantonal levels, private industry, NGOs, and research. Categorization by power and interest revealed critical players for ASF preparedness, including the Federal Food Safety and Veterinary Office, cantonal veterinary and hunting authorities, the pig sector, and the search dog sector. Major concerns by the stakeholders included unclear legal responsibilities, lack of operational resources (e.g. detection dogs, trained personnel, equipment), and coordination challenges in Switzerland's federal system. Parallel participatory modelling workshops in two regions led to stakeholder-developed system models aiming to re-establish ASF-free status after a hypothetical ASF incursion. Both regions independently added thematic areas not covered by current federal guidelines for ASF control in wild boar: One region focused on

communication and coordination, and the other region focused on operational readiness. Highly influential measures on the aim to re-gain ASF free status across both models included: professional carcass recovery using trained search dog teams, crisis coordination structures, centralized procurement of equipment, and targeted communication strategies. Factors influencing these control measures ranking highest in both regions include coordination by the FSVO and legal clarity.

The participatory approach enabled tailored solutions, strengthened trust, and fostered networks between stakeholders that are critical for outbreak response. The results support integrating stakeholder-informed priorities into national ASF strategies. Long-term preparedness will require institutional commitment, harmonized planning tools, and resource allocation across cantons and sectors.

Publications, posters and presentations

Miesch et al (2025) "Identifying stakeholders and analyzing their concerns about African swine fever control in wild boar". Front. Vet. Sci. 12:1602027. doi: 10.3389/fvets.2025.1602027

Miesch et al. "Prepared Together: Participatory Modelling for ASF Control in Wild Boar"; publication in process

Miesch et al (2024) "Interessen vereinen: Partizipative Modellierung als Werkzeug für eine effektive Vorbereitung auf die Kontrolle der Afrikanischen Schweinepest bei Wildschweinen"; oral presentation at the DACH Epidemiologietagung, 4.- 6. September 2024, Salzburg

Miesch et al (2024) "Uniting Interests: Participatory Modeling as a Tool for Effective Preparation in Controlling African Swine Fever in Wild Boar"; oral presentation at the VPH annual conference, 13. December 2024, Zurich

Miesch, "Identifying stakeholders and analyzing their concerns about African swine fever control in wild boar"; Veterinary doctoral thesis, Vetsuisse Faculty, University of Bern, submitted

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