

A 4P-approach in design of pig friendly production systems

Knowing Animals Congress
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Content

- Introduction
- A Pig and a 4P approach towards design for welfare
- Reasons for radical redesign
- Some results of two approaches
- Conclusions



Introduction (1); society

- Societal call for animal welfare
- Animal welfare = important part of sustainability
- Policy goals (NL) in livestock production
 - 5% sustainable stables 2011
 - 100% Group housing of sows 2013 (EU)
 - 100% sustainable production 2023



Introduction 2; Pig production system

- Highly efficient
- Extremely optimized
- Sharp targets

- Sustainability
 - Optimizing on profit and production
 - Other demands (welfare and environment) are add-ons



Our key questions

- How can our research contribute to this social ambition?
- How can we create change in practice?
 - Using a Pig approach
 - Using a 4P approach
 - And what are the differences in effect?



The Pig Approach

- Pig needs
- Brief of requirements of the Pig
- Animal focused solutions
- With subsequent optimization of
 - Environment
 - Workability
 - Economics
- Example:
 - Which solution can offer thermal comfort, exploration material and satiety.

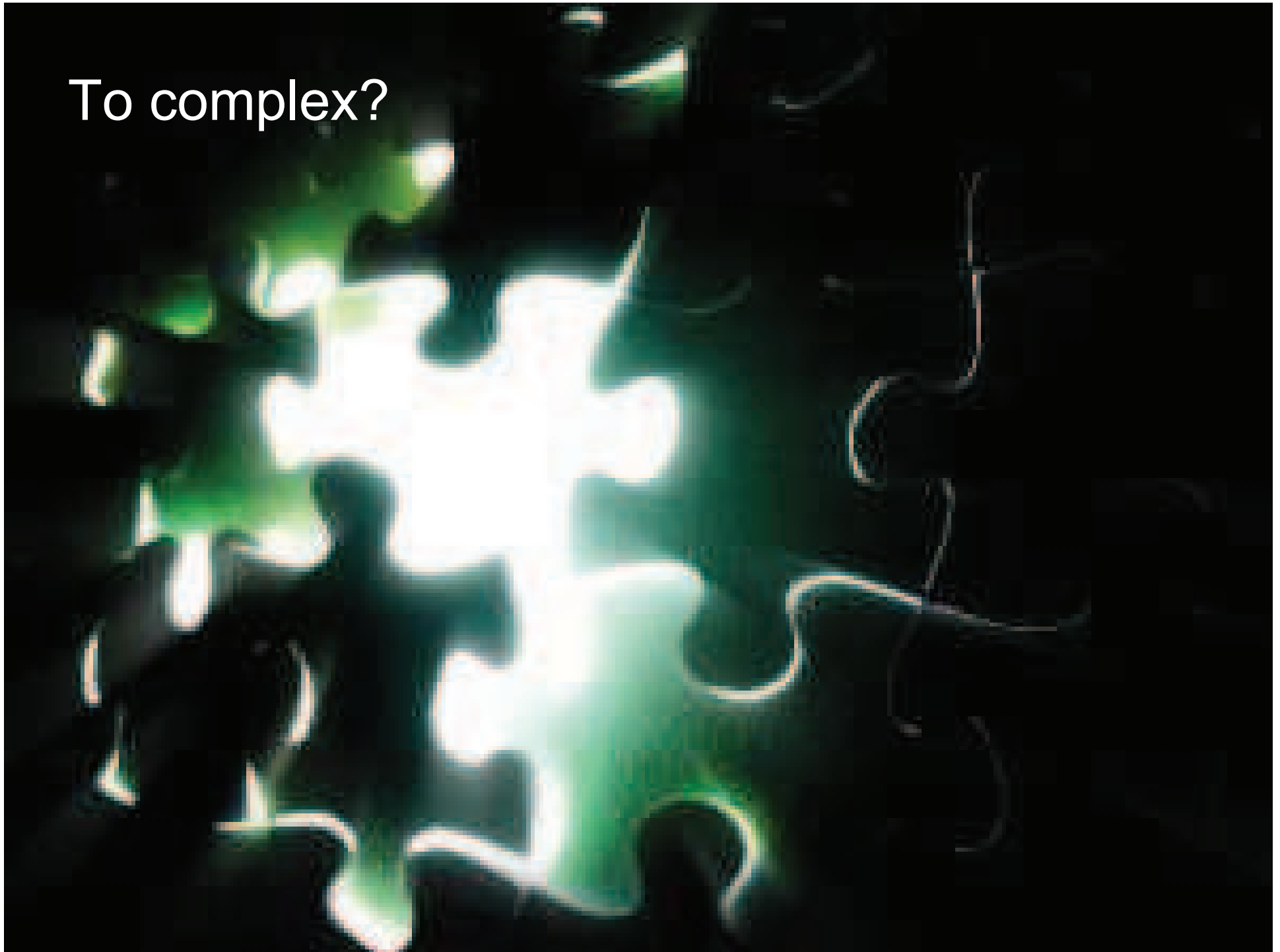


4P Approach

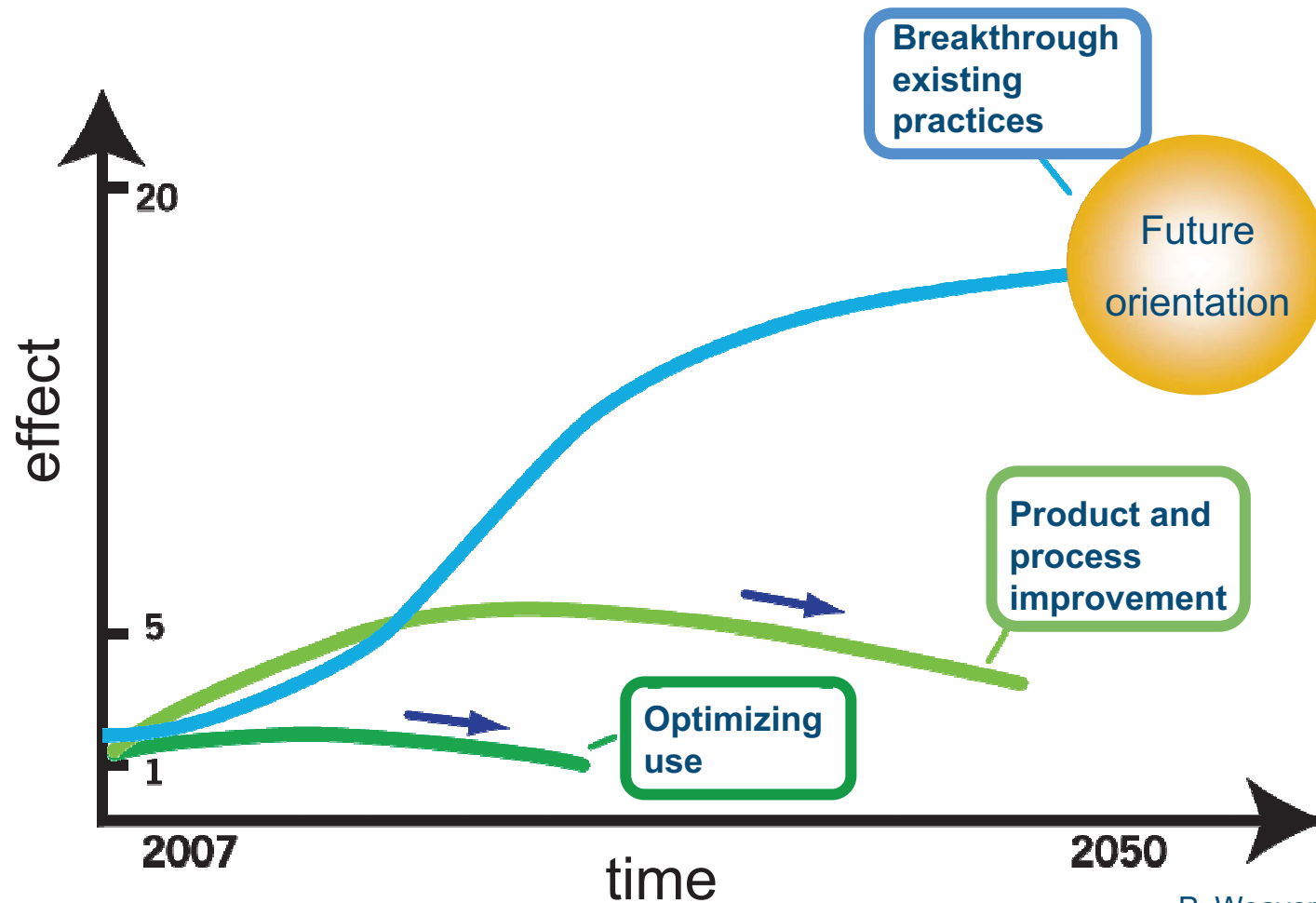
- Needs of **P**ig, **P**eople, **P**lanet and **P**rofit
- Briefs of requirements (on 4 P's)
- Radical re-design
- Looking for multi-actor solutions
- Win-win-win-win
- Example:
 - Which solutions can reduce ammonia emission, improve pig health, stimulate natural behaviour and reduce labour and costs?



To complex?



Sustainable Technology Development



P. Weaver et al, 2000



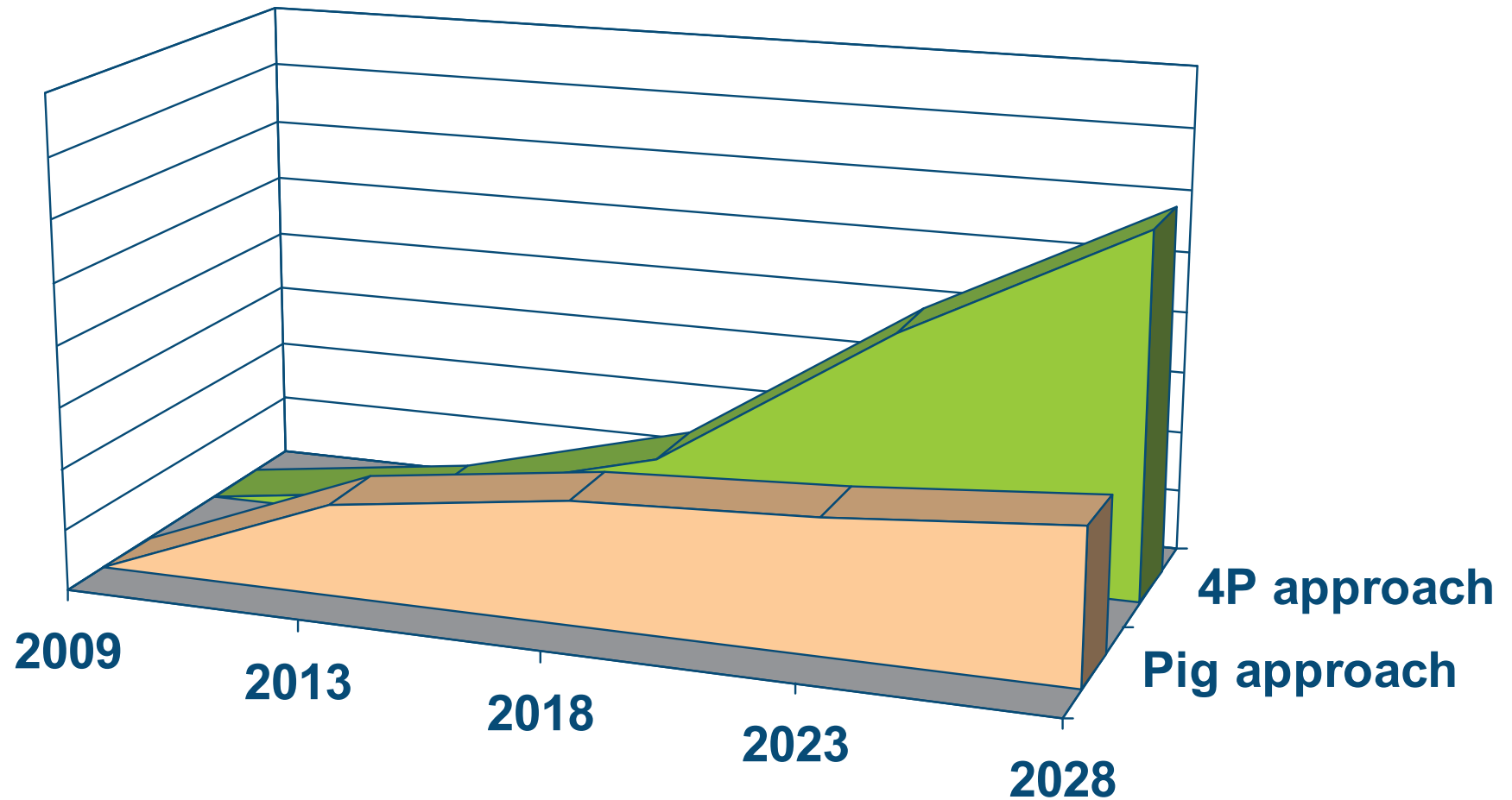
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Designing for system innovation

- We need breakthroughs
- Radical re-design offers long term solutions



Roads towards animal welfare



Designing for system innovation

- We need breakthroughs
- Search for long term solutions
- Create multiple attachment points /triggers for
 - farmers
 - consumers/market



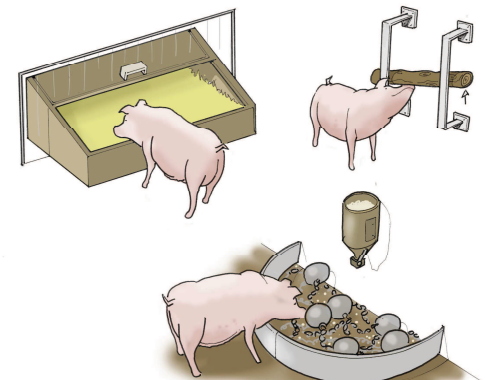
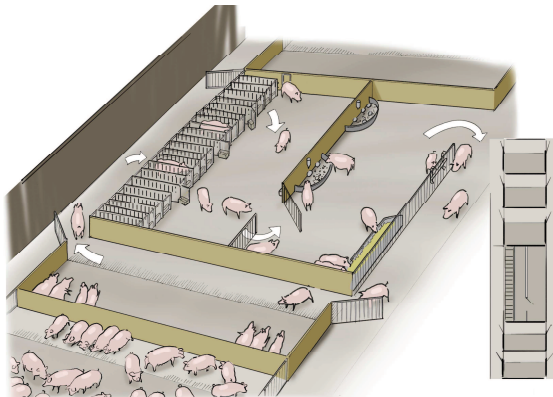
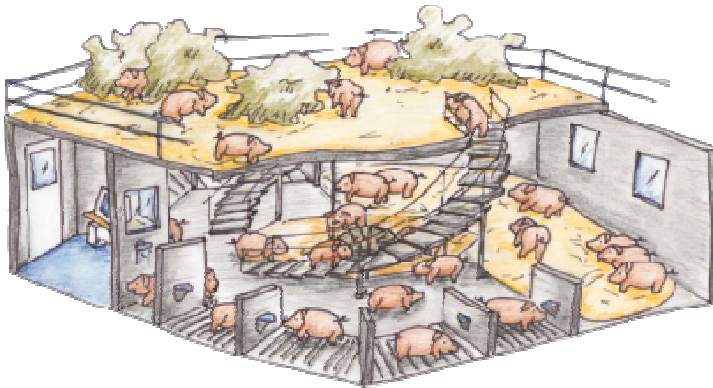
Preliminary Results



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Pig approach design



Comfort class; test facility



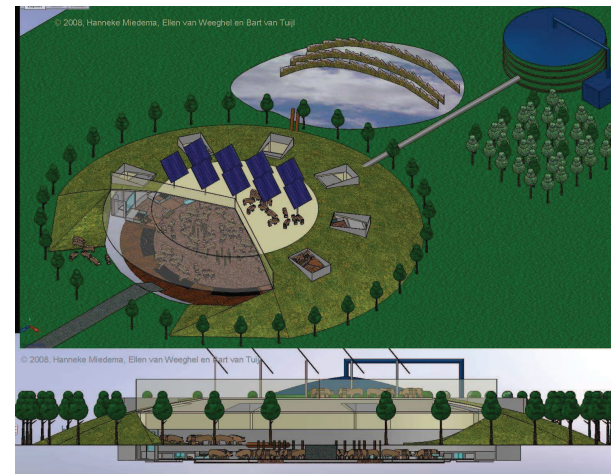
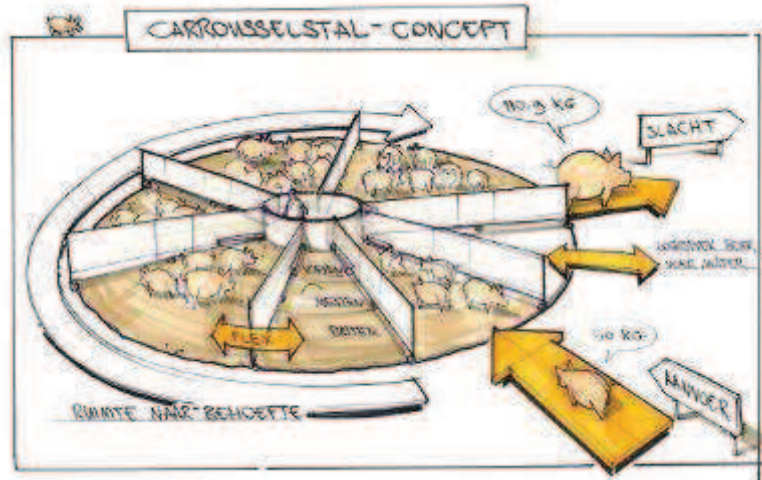
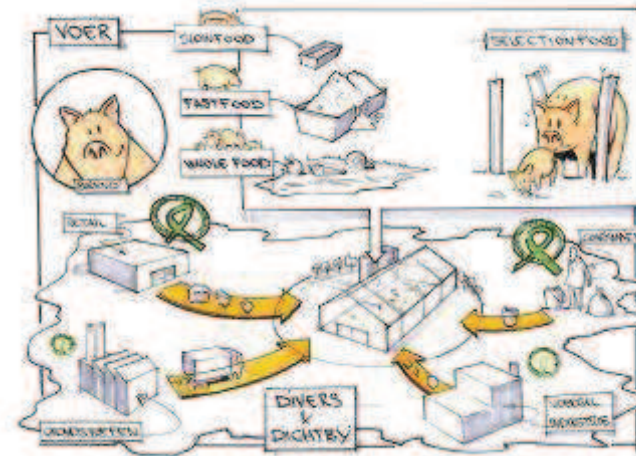
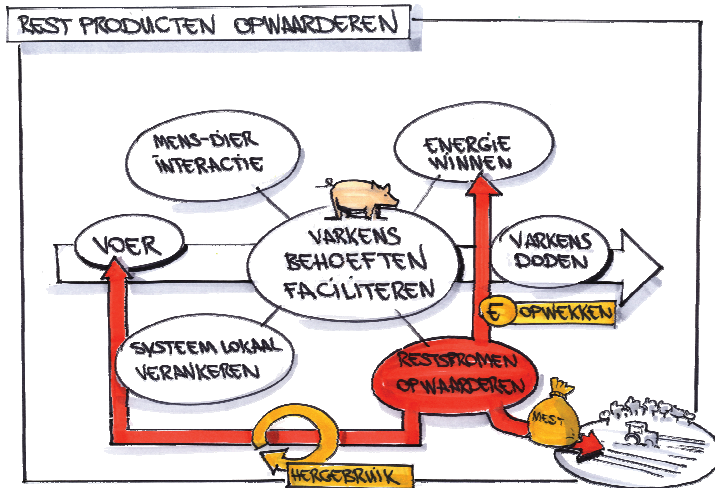
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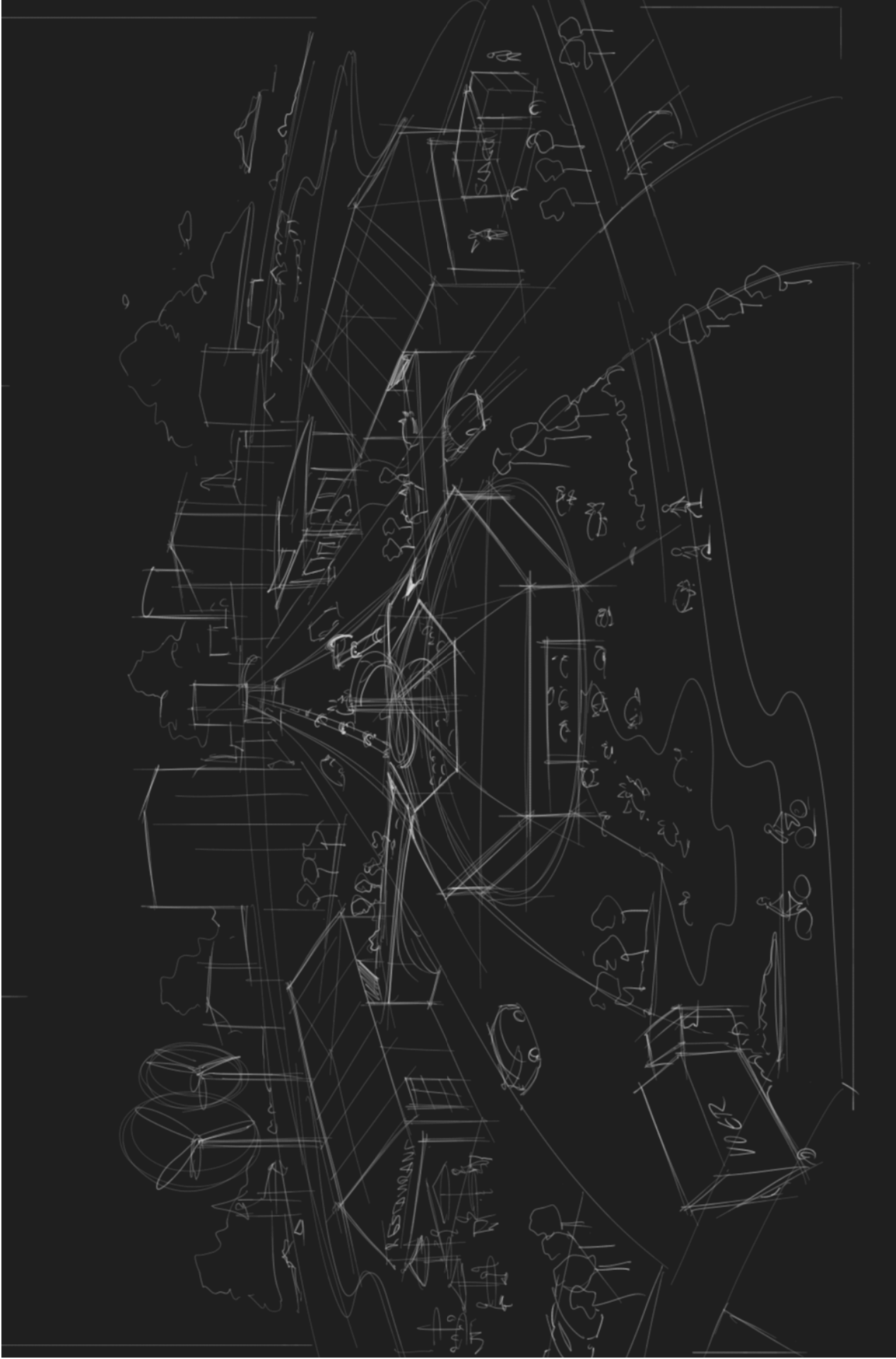
Results; Pig Approach

- 😊 Coherent view on animal needs
- 😊 Practical welfare modules
- 😊 Test & demo facility
Comfort class
- 😊 Group of farmers adapting elements in practice
- 😞 Limited niche market
- 😞 Limited group of interested farmers / consumers
- 😞 Conflicting solutions (environment-welfare)



4P approach design







Preliminary results; 4P Approach

😊 Multi problem solutions

😊 Pig toilet

😊 Diverse feed

😊 Coherent needs v.s
conflicting solutions

😊 Broad scope

😊 Total system optimisation

😊 New paradigms

😞 Long term applicability

😞 Missing technology

😞 Integral competences and
knowledge

😞

😞



Discussion and conclusions

- Both the Pig and 4 P approaches are useful in designing for welfare
 - P: new insights, new add-ons and welfare focused systems
 - 4P: more complex, multiple triggers, broad long term potential
- *Knowing animals* is 1 of 4 keys for improving welfare in practice



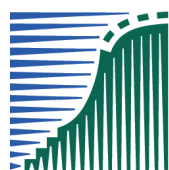
Thank you for your attention



**Wageningen UR
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