



Multidisciplinary Approach to
Practical and Acceptable Precision
Livestock Farming for SMEs in
Europe and world-wide

www.brightanimal.eu

The situation of PLF

- **IDEA:**

By application of precision methods,

- reduce resource needs and
- improve the efficiencies of livestock farming,
- improve animal health and welfare
- reduce the gap between producers and consumers.
- Contribute to more sustainable animal production systems

- **REALITY**

“PLF is a collection of attempts to optimize the systems of today on specific one dimensional aspects, without reflecting on their possible structural limitations or failures”

Peter Groot Koerkamp, PLF '07 keynote speech

Identification of a new direction



- Precision Livestock Farming needs to be practical
- Precision Livestock Farming needs to be acceptable



Identification of a new direction

BrightAnimal is a 2 year coordination and support action.

We want to:

Produce a framework for European and non-European small and medium enterprises on effective and acceptable precision livestock farming and to create an international, interdisciplinary network for further development and dissemination.

- **Strategic Objective 1:**
To evaluate, assess and coordinate existing research and to extract from this a framework for PLF in Europe and beyond, with special focus on SMEs.
- **Strategic Objective 2:**
To provide practical guidance to those most directly involved in PLF (mainly farmers) where the *practicality* and the *acceptability* of the proposed PLF measures for SMEs can be explicitly taken into account.
- **Strategic Objective 3:**
To create an international network of experts in the different areas of PLF to interact in a cross-disciplinary manner and further develop the framework.

BrightAnimal's outputs

- Book: Effective Precision Livestock Farming in Europe and world-wide with special consideration of small and medium enterprises
 - Description of current and near-future techniques in PLF for SMEs
 - Sets the scene for future developments
 - Includes business cases for PLF for SMEs
 - Include analysis of societal, environmental and animal welfare aspects of PLF
- Good precision livestock farming practices (BPLFP)
 - 4 guides for aquaculture fish, dairy cattle, pigs and layer hens
 - Practical guides for farmers and farm service industry
 - Be released to the public domain in the form of booklets/online resource
- Demonstrator to showcase our recommendations practically

A few first results



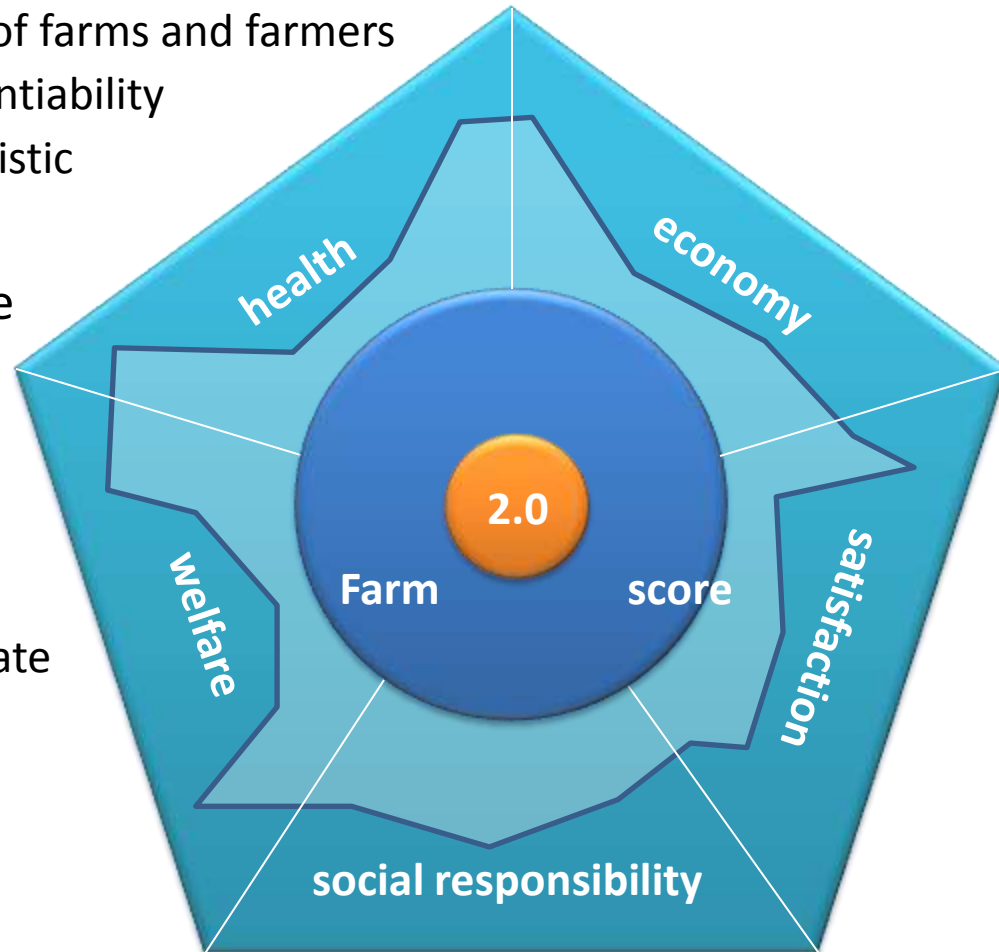
We have given up on PLF!

- Unassisted technology installed on farms will not work
- Instead, there is a need for a service industry that provides a 360° service to farmers on a subscription basis
 - No heavy investment into technology with uncertain results
 - Automation in the interest of service industry not farmers
- Service industry will have three basic functions
 - Maintain equipment on farm
 - Analyse on-farm recordings
 - Provide advice to farmers
- However, how to build a competitive service industry now?



Farmscore

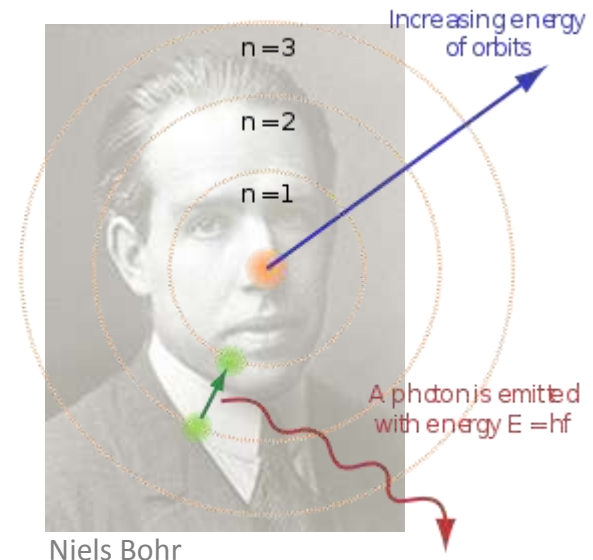
- We need a framework to guide farmers and consumer (representatives)
 - that accepts the complexity of farms and farmers
 - maintains the market differentiability
 - be integrative, non-monopolistic
 - adoptable to new evidence
- Scoring system should be base for farm modelling
 - mobile phone as farm management tool
 - a software/service is needed to assist farmers in decisions
 - needs to be fed with up to date data on feed prices etc
- Scoring system could be base for farm subsidies



Critical point approach to PLF

- Animals are **C**omplex **I**ndividual **T**ime-Varying **D**ynamic systems (Berckmans et al)
- However, by defining relevant groups and their averages, we can find a meaningful approach *towards* full complexity
- In other words, farm success can be mapped unto a finite number of essential operations and their parameters
- => Critical point approach to farming by John L Black
- A critical point analysis should be the base for Precision Livestock Farming
- Research is needed to map production systems

$$\frac{\partial \psi}{\partial t} = -\frac{2\pi i}{h} H(\mathbf{x}, t)\psi$$



Niels Bohr

“Killer” applications in PLF

Dairy cows

- Oestrus detection
- Feed control (group or individual)
- Worker control
- Lameness prevention and detection
- Climate control
- Pedigree determination

Pigs

- Feed control in performance groups
- Non-intrusive weight determination
- Heat detection
- Non-mechanical directing systems

Farm advisory systems
(e.g. Feeding instructions based of
feed, welfare and animal product price)

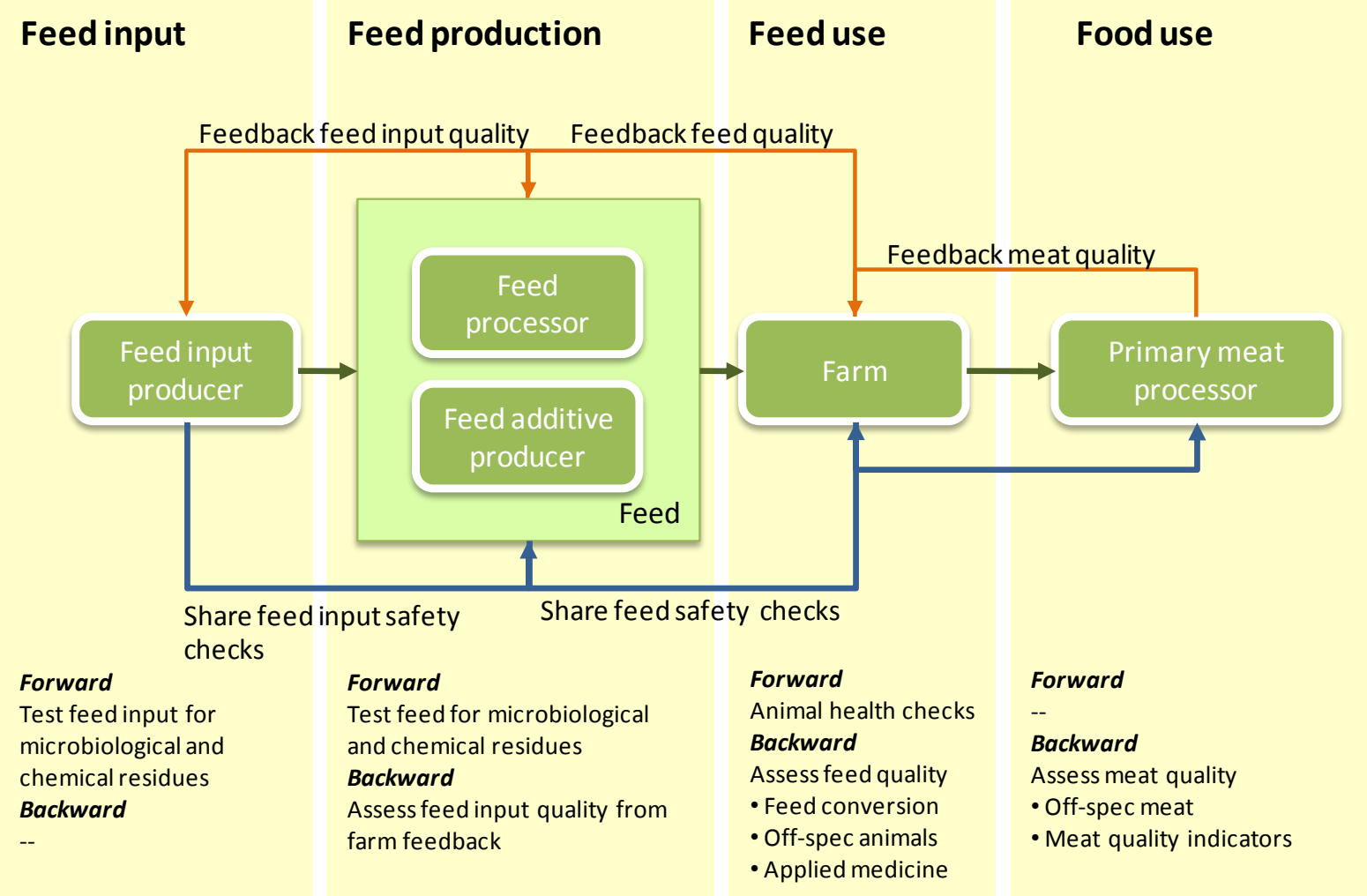
Layer hens

- Egg hatching monitor
- Sex determination
- Automated welfare analysis

Aquaculture

- Early disease detection

Feed(back): exchange of information



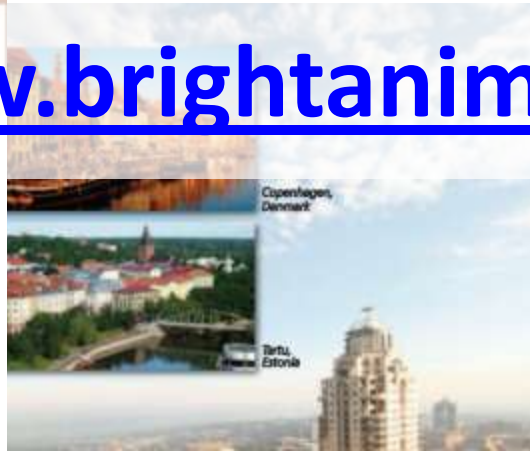
2010 activities

- We have celebrated 2 workshops
 - May 12th-14th, Tartu (Estonia)
 - May 27th-28th, Copenhagen (Denmark)
- This is our last workshop
 - September 8th-9th, Johannesburg (South Africa)
- In early March 2011, we will hold our final conference
- BrightAnimal newsletters and reports available on website

www.brightanimal.eu



(c) FoodReg Technology SL





THANK YOU FOR YOUR ATTENTION

FoodReg 

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