



Designing for a transition towards sustainable egg production in the Netherlands

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Introduction

Achieving sustainability in modern western animal production is a multi-dimensional challenge. A transition is needed towards an in all aspects sustainable egg production, one that addresses the multiplicity of challenges all at one time (system innovation).

Aim

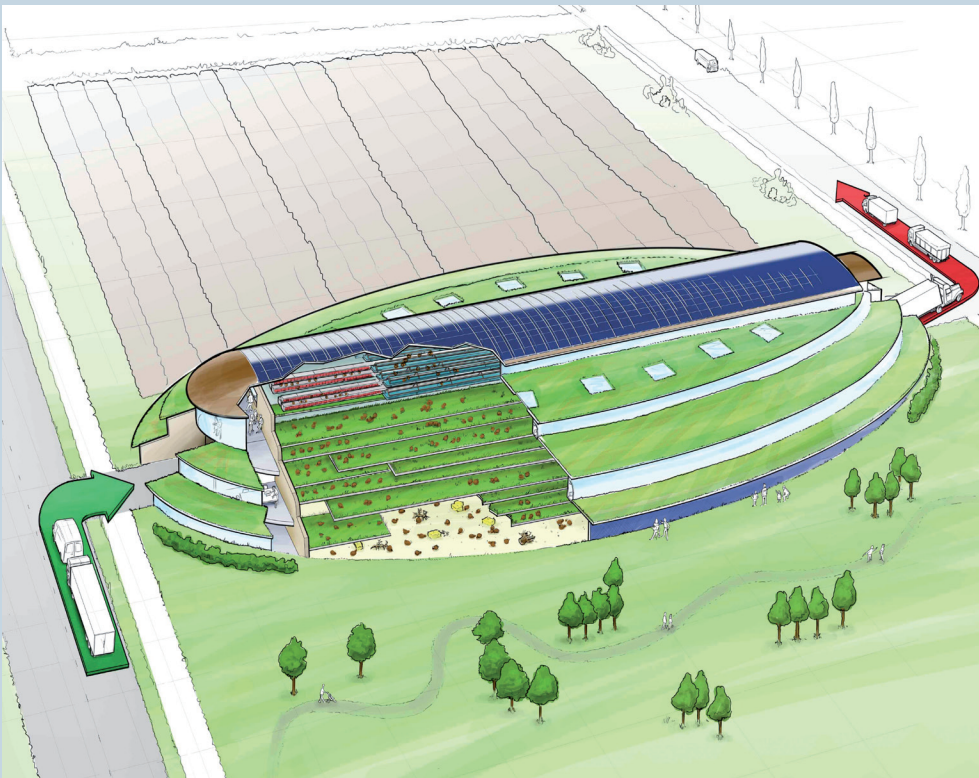
Well-Fair Eggs is a system innovation project in which integral sustainable concepts for the egg production chain are designed. In the participatory design process commitment and ownership among stakeholders is encouraged. They will have an active role in translating (parts of) the design concepts into practice.

Approach

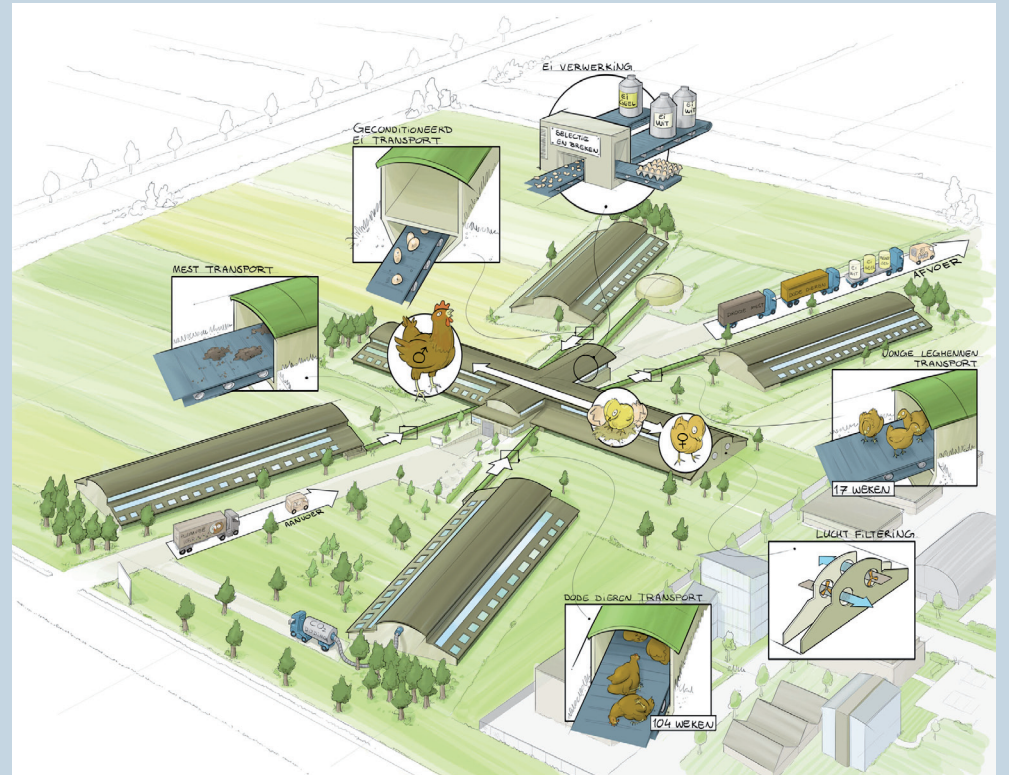
An interactive reflexive design process (RIO)* was followed in which the needs of the laying hen, farmer, consumer-citizen and environment are taken as the starting point, and that scrutinizes the functions of the system.

Results

The RIO approach led to a set of design concepts which address the multiple sustainability challenges, such as animal welfare, environmental footprint, labour conditions and economics, landscape integration, product quality and food safety. Moreover during the project several initiatives of stakeholders were generated.



Design concept 1: a combined rearing and laying husbandry



Design concept 2: a multi-age rearing and laying system

Key design elements on both designs

Innovative integrated solutions that breakthrough trade-offs are:

- 1) Separation of different functional areas for specific hen behaviour;
- 2) Foraging tiers where grain is supplied in long artificial grass, and that prevents dust and ammonia emission;
- 3) Separated dust bath unit to reduce dust generation;
- 4) Rearing of day-old chickens on the layer farm and on-site slaughter;
- 5) On farm egg selection and breaking.

Future prospects

Dutch stakeholders have adopted the design concepts and philosophy. A few examples of follow-up:

- Public-private parties have started joint venture initiatives in small business innovation research (SBIR);
- Exploration of further R&D of the integral design characteristics by knowledge, governmental and business institutes;
- Realization of parts of the design concepts in the Netherlands by sector actors.



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*Groot Koerkamp, P.W.G. and Bos, A.P. (2008) Designing complex and sustainable agricultural production systems; an integrated and reflexive approach for the case of table egg production in the Netherlands. *NJAS*, **55**: 113-138

