Designing for a transition towards sustainable egg production

H.J.E. van Weeghel¹, P.W.G. Groot Koerkamp¹², A.P. Bos¹, A.P.H.M. Janssen¹

¹Wageningen UR Livestock Research, Lelystad, The Netherlands
²Farm Technology Group, Wageningen University, The Netherlands

ellen.vanweeghel@wur.nl

The current Post-Industrial age confronts society with a complex challenge to transform to a more sustainable animal-based food production. The single focus on efficient production (low input, high output) since World War 2 has yielded undesirable side-effects on environmental, social as well as economical sustainability values. In the Dutch modern poultry sector there are concerns, amongst others, about ammonia, odour and dust emissions, animal welfare, human and animal health, husbandry scale and the continuity of the farmers business. ‘Well-Fair Eggs’ is a project on system innovation that works on designs for integral sustainable egg production. Applying a reflexive interactive design process 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. Key-stakeholders within and effected by the egg production chain were actively involved through a participatory design process. Not only did these stakeholders contribute to the integral nature of the designs, participation also increased ownership of and commitment to the results, and the promises therein. We present the results of the system analysis, the participatory design methodology and the final designs of integral sustainable laying hen husbandry. Results show that high level of animal welfare can be combined with a low environmental footprint and a very high product quality standard. Innovative integrated solutions that circumvent trade-offs were identified and are, amongst others, 1) the separation of different functional areas (a dust bath unit that separates dust bathing from foraging behaviour), 2) the rearing of day-old chickens on the layer farm (eliminating transport stress and minimizing healthcare costs), and 3) inclusion of egg processing on the layer farm (farmer is flexible to produce for either the table egg market or the egg product market, in this way still productive laying hens can be kept longer).