

Sustainable livestock production: assessment of farmers initiatives

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Introduction

Dutch livestock production has become highly efficient in terms of output per unit input, but is also heavily criticized on sustainability issues including deprived animal welfare, environmental burdening and outbreaks of contagious diseases. As a response, in 2007 the Dutch government set policy targets of 5% and 100% sustainable livestock production at the farm level for 2011 and 2023, respectively. These goals represent major challenges in defining what sustainable farming is and in developing effective policy measures to support the required transition (Rotmans, 2003) towards sustainable livestock production. Setting a specific target of 5% for 2011 assumes that sustainability can be defined at the farm level and that by choosing proper criteria the number of farms that satisfy the definition can be assessed. A farm, however, is embedded in a wider socio-technical system and sustainable development requires changes on a variety of dimensions to lead to a transition. Various new approaches will have to be tested and learned about in practice to be able to assess what may work in practice. In this perspective change initiatives at the farm level (called “farmers initiatives” in this paper) should not just be ‘counted’ to establish their contribution to the short-term policy goal but be assessed as part of a learning process towards a broader sustainable livestock production system (the long-term policy goal).

Methods

To monitor achievement of the short-term policy goal, criteria were developed to assess the number of sustainable farms. These criteria emphasized improved animal welfare while environmental issues should at least comply with present legislation. This was put into practice by using existing certification schemes for organic agriculture (EKO-label), environmental assurance scheme (*Milieukeur*-label) and compliance with rules for tax reduction, including green financing. These criteria should allow the ‘counting’ of the progress in the number of “sustainable” livestock farms in the years up to 2011.

Such a method of counting, however, does not provide a proper assessment tool for a transition towards a sustainable system. Theories on system innovation and transition management emphasize development of innovation pathways in a multi-actor and multilevel learning process to result eventually in a shift to a socio-technical regime of the livestock production sector. To assess the progress of such developments we need interactive forms of assessment, which, as Van der Sluijs (2002) wrote, are at the core of integrated assessment. Such an assessment method should focus on the potential for learning about sustainability.

From this perspective farmers initiatives should be assessed for their potential to contribute to learning about the (in-)possibilities of such multidimensional change processes. In such an approach sustainability is also understood as a multidimensional and dynamic phenomenon. This adds a considerable complexity to the process which requires learning, on the one hand because of uncertainty on which of the present initiatives may contribute to sustainable development in the broader sense and on the other hand because unforeseen trade-offs may emerge.

To assess the potential of farmers initiatives to contribute to sustainable development we use four major criteria:

1. Presence of a strong vision. Visions, e.g. of an integral design of a sustainable farming system, (Groot Koerkamp & Bos, 2008) can play an important role in systems innovation. They make sustainability operational, give direction to development and can mobilise stakeholders from various domains.
2. Institutional change. As Roep et al. (2003) argued, technical innovation in farming should be accompanied by institutional innovation to achieve “effective reformism”.
3. Potential business model. Three earning models for an integral form of sustainable farming 1). The costs of livestock produce is cost effective and gives a competitive advantage in the market. 2) The costs of livestock produce are higher but the additional costs can be earned in the market e.g. by sustainability-certified supply chains. 3) Costs of livestock produce are higher, but as part of sustainable farming additional functions providing new sources of income are added (e.g. energy and fertiliser production).
4. Possibility to mitigate excess entrepreneurial risks. Farmer’s initiatives with a potential to contribute to sustainable development are accompanied by uncertainties and costs which could jeopardise continuity of the farm (Meijer, 2008).

Results and discussion

Our main argument is that, whereas the assessment of sustainable livestock farming systems is presently based on quality assurance schemes, it should be based on an assessment of the potential of farmer’s initiatives to contribute to a sustainable development path. This implies seeing these initiatives as part of a learning and experimentation strategy to achieve sustainable development in the broader sense and should be based on insights from systems innovation analysis. The approach of ‘Strategic Niche Management’ offers a good starting point to carry out such an assessment. (e.g. Schot & Geels, 2008). Preliminary experiences based on ideas of strategic niche management with smart experimentation with dairy farmers initiatives (Roep et al., 2007) were used to corroborate and refine our approach. As a next step will apply the method by selecting a number of dairy farmers initiatives to obtain a coherent portfolio allowing learning for sustainable dairy farming including aspects as welfare, green house gases, energy use, economy and labour conditions.

Thus, the approach not only looks at the potential of single initiatives to asses their potential to contribute to sustainable development but also analyses the cohesion between initiatives to obtain synergy in learning and also compares the learning achieved in these initiatives with future visions and explicit demands of various relevant actors.

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