Outcome-oriented approaches for regulating animal welfare in organic farming

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Abstract

A comparative analysis of animal welfare standards in the EconWelfare research project shows that, although animal welfare in organic agriculture already exceeds requirements of EU legislation, some improvements are still possible and necessary. This manifests itself as more detailed rules in EU regulation for organic production and/or in private organic standards. However, there is some resistance from the producer side. There is an interest in alternative approaches to achieve better animal welfare. A paradigm shift is needed in organic standard setting: progress should be assessed in lieu of failure. Several projects and initiatives such as WelfareQuality, AssureWel/Soil Association, Bioland, ANI-Austria, etc. illustrate this. In these, the first step is to translate ethological principles into criteria for assessment. Suitable indicators need to be extracted from the criteria, taking account of different animal groups as well as regional contexts. Examples are: body condition scores for different animal categories, lameness, skin lesions and injury and prevalence of abnormal behaviour/stereotypes, etc. The aim for each of the focus areas should be a limited set of key indicators or control points from a participatory process. Once this has been introduced, a simplification of some of the norms is possible.

In Switzerland, a checklist has been developed for cattle. This can be used both by organic farmers for self-assessment, and by organic farm inspectors as a complement to inspections. Principal animal welfare indicators selected include nutritional condition; degree of dirtiness; injuries and lesions; lameness; state of claws. In addition, several stable-related indicators are used. First tests on farms were positive. Pros and cons, as well as experiences of this approach are discussed. Recommendations are given on how to implement, to scale up and to combine different approaches for regulatory bodies, advisory services and standard setters. The challenge is the transition from the old to the new approach without creating additional burden for farmers. The whole system requires more self-responsibility and improved monitoring. Currently, certification examines in detail whether thresholds have been breached; in future it could rather determine where a farm is along the path to optimisation and what can be further improved.

1. Introduction

Many producers and processors do not understand the relationship between organic principles and values, and the detailed standards they have to conform to. They are not involved in development of standards. Organic operators experience ever-increasing complexity and constantly changing standards with a steady increase in inspection costs and certification bureaucracy. But how is it possible to break out of this "dead end street"? Is there a way to adapt and simplify organic regulations and standards? Perhaps by increasing organic operator's own responsibility for organic quality and integrity? Perhaps by introducing a development element into organic certification as in some other food control schemes (Padel 2010). How can we deal with the current impasse that inspectors are not supposed to give advice?

An interesting case for developing such an approach is animal welfare in organic farming. Several projects and initiatives have been started or are under way (WelfareQuality EU Project, AssureWel/Soil Association, UK, Bioland Germany, ANI Austria, etc.).

2. Methodological approach

The starting point to reflect about improving farm Animal Welfare (AW) was a comparative analysis by the Research Institute of Organic Agriculture (FiBL Switzerland) with support of eight European research institutions in the EconWelfare EU Project ("Good animal welfare in a socio-economic context"). This analysed AW legislation in the EU as well as current national legislation in EU member states (particularly DE, IT, NL, PL, SE, UK) and in non-EU-countries (Switzerland, Australia, Brazil, Canada, China, New Zealand and the United States). The focus was on cattle, pigs and poultry as well as their transport and slaughter. In third countries at least two experts provided additional detailed information on implementation of animal welfare. In the selected European countries a more in depth analysis of 15 private AW standards, of which 6 were organic standards, was made in comparison with general EU AW legislation and with regulations for organic production (EC-Reg. 834/2007 and EC Reg. 889/2008). Two reports identified deficits in specific animal welfare regulations as well as in private standards (Schmid & Kilchsperger, 2010; Ferrari et al., 2010).

This paper focuses on the animal welfare deficits in organic animal husbandry. It examines areas in EU organic regulation, governmental rules and private organic standards, where animal welfare could (or should) be further developed. Special attention is devoted to improving animal welfare without necessarily making standards more detailed (and over-prescriptive).

A possible approach is the introduction of complementary tools for inspection and self-assessment of farmers. Based on experiences from the above project at FiBL Switzerland and an associated diploma work, a prototype checklist for cattle was developed. This was tested on several farms in Switzerland (Knutti, 2012). Six selected farmers provided feedback in a questionnaire. Moreover, standard setters, public organisations and certification organisations were interviewed in Switzerland, in the UK and in Germany.

3. Results

First, the areas for further development of AW in organic farms are identified from standards analysis in the EconWelfare project. Then, a new approach for AW monitoring and development is proposed.

3.1 Areas for further development of animal welfare in organic regulations & standards

Comparison of AW differences in the EconWelfare project between national governmental rules and private organic standards in Europe with the multiple EU legislative regimes (general and organic), and, on the other hand, with multiple organic as well as high-level private non-organic AW standards (like Freedom Food, UK or Neuland, Germany) showed differences between respective legislative levels and in respective accuracies. Some differences were of major relevance, and others of minor relevance from an ethological point of view. The determination of the relevance has been done with an expert group based on Welfare Quality Criteria (see later).

Aspects were grouped into specific aspects like accommodation, feeding and health care. The main differences recorded within at least 5 standards per animal group (cattle, pigs, poultry) are summarised below.

Legend:
- Numbers in brackets (m/n). The first number indicates the total number of differences; the second number the most relevant of these differences, based on literature and expert opinions.
- Criteria marked with asterisks * indicate major weaknesses in organic regulation/standards compared with high non-organic AW standards from ethological expert point of view.
- Criteria in italics reflect areas for further AW development of organic rules/standards. Some of these areas already taken up in some higher level private organic standards (like Bioland, Naturland, Demeter, Soil Association, and KRAV).
- Criteria in normal text form reflect main differences of EU organic regulation compared with general EU AW legislation

Cattle (70/20): *more space and more light*; more specific feeds (e.g. roughage)*; more restricted tethering, adequate anaesthesia for castration and prohibition of certain surgical practices (e.g. dehorning).*

Above EU general legislation: slatted floors forbidden or limited, specific bedding requirements, outdoor access, longer weaning periods and provision of calving pens.

Pigs (51/16): *more space *, slatted floors forbidden or restricted*, possibilities for investigation and manipulation activities, limitation of certain surgical practices, adequate anaesthesia for castration.*

Above EU general legislation: availability of litter, provision of roughage and no hormonal treatments.

Poultry (48/17): *lower indoor and outdoor stocking densities*, higher frequency of regular visits*, better defined outdoor run and pasture.*

Above EU general legislation: more light, more perches and nests, access to dust baths, better access to fresh water and restrictions in breeding (mainly broilers).

Transport of animals (28/9): *more drinking/feeding and resting possibilities before transport*, provision of bedding material for the youngest in transport vehicles, adequate pathway/ramp design, separation of unfamiliar groups, reduced length of journey.*

Above EU general legislation: interdiction of sedatives/tranquilisers.

Slaughter of animals (39/9): *time between stunning and bleeding*, more lairage (start of lairage, space, lighting, floors etc.), avoidance of group mixing, specific education of staff.*

Above EU general legislation: no electric stimulation.

Thus, there are several areas, where animal welfare can be improved in organic agriculture. The most crucial weaknesses in organic standards relate to transport and slaughter, where almost no specific requirements are set. Another weakness is the lack of outcome-related criteria and animal-oriented indicators.

How can improvements be initiated and implemented? And what are the implications for a farm? Certainly a distinction can be made between measures, which only imply small adaption of prac-

tices (e.g. more regular systematic visits) and others where higher investments might be needed, or where reduced income might result (e.g. more space, reduced stocking densities). In particular in the case of higher investment, this implies that a farmer understands the necessity of a change and will have time to adapt. Making already detailed organic standards even more detailed (concerning stabling, stocking densities, feeding, etc.) will not convince the farmer. And we cannot be certain that this would really improve animal health and welfare. Therefore, other approaches are needed.

3.2 New approaches to improve animal welfare on organic farms

Organic regulations and standards for animal production are often very detailed and sometimes also over-prescriptive. However, for several years animal scientists and ethologists have been developing more animal-related indicators instead of traditional, technical (stable-related) indicators. Although this research is still in early development (debate continues about appropriate indicators), this approach is relevant to organic farming (see summary table 1 from EU project "WelfareQuality").

The starting point is to translate ethological needs of animals into different operational principles and into related criteria. Then, these criteria can be integrated into standards, if possible with a prioritization into major and minor points as well as recommendations (laid down in Codes of Practise).

Table 1: Welfare Quality principles and criteria linked to animal welfare standards

Welfare Quality PRINCIPLES	Welfare Quality CRITERIA (based on an EU funded research project)	Most important major* or minor aspects in standards, e.g. for pigs
Good feeding	- Absence of prolonged hunger - Absence of prolonged thirst	- Facilities to avoid competition for feed and water on farm* - Minimum age of weaning
Good housing	- Comfort around resting - Thermal comfort - Ease of movement	- Availability & quality of bedding material* - Prevention of cold / heat / stress / light - Availability of space * (stocking densities)
Good health	- Absence of injuries - Absence of diseases - Absence of pain induced by management	- Limitation of slatted floors* - No or very limited use of veterinary drugs / choice of breeds - Avoidance of mutilations (e.g. teeth clipping/grinding, tail docking, castration)
Appropriate behaviour	- Expression of social behaviour - Expression of other behaviour - Good human-animal relationship	- Stable groups to avoid aggressive behaviour - Environmental enrichment (manipulable material) - Regular visits

Source: Keeling, 2009; http://www.welfarequality.net

The WelfareQuality approach and protocols were sometimes seen as too much oriented towards conventional farming, as too detailed, and as too resource-demanding for practical implementation. How can such more animal-oriented approaches be better translated into organic farming practise? A good example is the Bioland Animal Health Management Handbook (2007, rev.2011). The work started because of problems with animal health on some farms. Therefore for cattle, pigs and poultry lists of check points were developed, well documented with pictures, supported with a traffic light system based on objective criteria: good practise (indicated with green), aver-

age practise with potential for improvement (indicated with yellow) and below average practise with urgent need for improvement (red). The checkpoints cover: different observations of health status, stable and feeding aspects. The assessment system is coupled to the inspection of farms. If a farm regularly scores red points, then it needs advice. The handbook is designed such that the farmer alone can make a self-assessment of the state of his or her animal husbandry system.

Another example of tools that complement standards in this area is the ANI-system (Animal Need Index) developed by Bartussek (1999) and applied by Bio-Austria. This is an overall animal welfare assessment system that awards points at farm level. It also starts with animal behaviour principles (5 freedoms of thirst/hunger, housing, diseases/injuries, behaviour and fear/stress). It is linked both to inspection and to advisory work. However in the last years, the ANI system has not been further developed in other countries, after retirement of the initiator.

Yet another initiative has started in England: AssureWel (Advancing Animal Welfare Assurance) is a 5 year collaborative project (2010-2015) led by the RSPCA (UK Animal Welfare NGO), the Soil Association (UK organic label organisation) and the University of Bristol, supported by a Charitable Trust. Its main aim is to develop a practical system of welfare outcome assessment for major farm animal species in farm assurance schemes. The AssureWel system will be first field-tested and introduced within the RSPCA Freedom Food and Soil Association certification farm assurance schemes. These schemes will use welfare outcome assessment to help assess compliance with their scheme's standards. Producers can be given feedback (including benchmarking) to help monitor and improve welfare on their farm. Advice and support will also be given to producers and producer groups to help further improve welfare. Welfare outcome data can also be used by the schemes to develop standards. The initial focus was on poultry, for which protocols have been published (AssureWel 2012); work on cattle and pig protocols is in progress.

What can we learn from these initiatives? The starting point is to translate ethological principles and needs into criteria for assessment. Suitable indicators need to be extracted from these criteria, taking into account different animal groups as well as regional contexts. Examples are: animal body condition scores, lameness, skin lesions and injury and prevalence of abnormal behaviour/stereotypes (e.g. feather pecking, tail biting, oral stereotypes in sows, etc.). The aim for each of the focus areas should be a limited set of key indicators (or at least control points) that are derived from a participatory process. Once this has been introduced a simplification of some of the norms is possible.

3.3 Prototype checklist/protocol on animal health and welfare of cattle as complementary tool for inspection of organic farms in Switzerland

Based on experiences from the UK (AssureWel-Project), Germany (Bioland) and the EU Project WelfareQuality a checklist/protocol for cattle was developed in a diploma thesis at the University of Applied Science for Agriculture in Zollikofen (Knutti, 2012). This checklist/protocol was tested on six organic farms in Switzerland. The main aim was a simplified system of observational indicators, which both the farmer and the inspector can use on a selected minimum sample of animals (typically 20 % of all animals, or at least 10 animals). A simple score of 1-3 is used. For a given farm, this indicates whether the AW situation is good (1), whether it can be improved (2), or whether it is unsatisfactory and it must be changed (3). The indicators used are listed in Tab. 2; they are grouped as animal-related and as stable-related indicators. Furthermore, systematic damages caused by poor management must be reported (e.g. hairless parts, swollen ankles).

Tab. 2: Prototype cattle checklist/protocol for organic farmers and inspectors in Switzerland

Animal related indicators	Support tools	Score 1	Score 2	Score 3
Nutritional condition	with body condition score system of FiBL):	good	lean/fatless	too fat
Degree of dirtiness	supported with pictures	none	medium	strong
Injuries and lesions (further differentiated)	supported with pictures	none	little	strong
Lameness		none	little	strong
State of claws	supported with pictures	well-managed	ok	Not well managed
Stable-related indicators	Support tools	Score 1	Score 2	Score 3
Hygienic conditions: fodder, water, place		clean	ok	not hygienic
Floor		not slippery	slightly slippery	very slippery
Air quality		good	sticky	very sticky
Use of cleaning brushes		well-used	not well-used	not used at all/none
OVERALL RESULT	For all selected animals / For whole stable/unit			

Source: Knutti, 2012

The assessment for the animal related indicators is foreseen for each of the selected animals and for the stable-indicators for each stable unit.

A comparable system is proposed for pigs, however with a higher sampling rate (>50 % of the animals, in particular those with noticeable problems/deviations). However, here the focus might be more on a group of pigs or groups with a sow and their piglets (e.g. max. 10 % of deviations to score as 2). Poultry was not covered as checklists are already being developed by Bioland (2011) and by the AssureWel-Project (2012).

Different overall assessment systems can be applied; this is up to the certification body: e.g. Knutti (2012) proposes that no score 3 is found. The overall husbandry system might be very good, when none of the animals record a score of 3. The system is fairly good, when less than a certain number of scores of 2 are achieved but must be improved when the number of scores of 2 is too high (e.g. 10 times). A traffic light system can be introduced to make the score more visible (as done by Bioland-Association). It is important that the farmer's self-assessment and the assessment of the organic inspector are compared and that proposals for improvements discussed.

The type of proposed/required measures is also up to the certification body to determine. The aim should not be a punishment/sanction for the farmer but to initiate an improvement and learning process over a period of time (e.g. with support by advisory system).

The first feedback from farmers about the use of this checklist during inspection visits was positive. The time needed for such an assessment averaged 20 minutes and this was seen as acceptable. The possibility of comparing the self-assessment with the assessment of the inspector was also perceived positively. There were some concerns that results can vary over extended periods of time. Another point that was received positively was that the main goal of this approach is an improvement of husbandry practises with the use of observational check-points, as opposed to sanctions upon non-fulfilment of standards requirements.

The interviews with two main control and inspection bodies in Switzerland resulted in a positive feedback; they might consider this approach in a future inspector training. The competent authorities in Switzerland took a neutral stand-point. For them the result of the inspection is important and not the way to achieve it. It can be concluded that there is room for manoeuvre for the control bodies.

4. Discussion

The introduction of such an outcome-oriented approach brings chances and risks, which are summarised in Table 3.

How to make the transition?
More experience is needed with more animal welfare outcome assessments both from organic- and from non-organic farms. More effective assessments might be a mix of some classical core standards requirements for animal welfare in combination with core animal /outcome related indicators. Hopefully this would allow reduction of some over-prescriptive rules and stimulation of the self-responsibility and comprehensiveness of farmers with regard to animal welfare.

The challenge is the transition from the old to the new approach without creating additional burden for farmers, whilst basing the whole system more on self-responsibility and monitoring progress. For standard-setting bodies (in particular private standards) it would be important that a new approach is supported first with more advice and information, and, where necessary, by reformulating standards (setting more criteria for outcome-related indicators whilst reducing the detail in other areas). Based on interviews with Bioland and the Soil Association, it is necessary to invest more time in training both inspectors and farmers in order to make such an approach more feasible and acceptable.

Tab. 3: Chances and risks of a more outcome-oriented animal welfare assessment system

Chances	Risks
Better animal welfare on organic farms.	More resources needed for introduction and implementation through control bodies (more training, etc.).
Less legal animal welfare problems.	
More self-responsibility for organic farmers (through self-assessment).	Time needed for organic inspectors in start phase higher (could be reduced by focusing inspection more on high risks).
More long-living animals.	
Improved profitability for farmers (better animal health).	Resistance of some sceptical farmers, who fear more paper work and costs.
Image of organic label(s) is improved.	Regional state (supervision) bodies might be sceptical.
Approach especially suitable for higher level private organic standards (but less for basic legal requirements).	Insufficient reach to farmers, where improvement is urgent, unless certifiers are equipped with definitive duties
Combination with risk-based inspection might show advantages.	

Source: Knutti, 2012

5. Conclusions

A paradigm shift is needed in organic standard setting. Attention should focus on assessing progress rather than defining failure. Assessment systems and codes of best practice should be developed by researchers, advisers and practitioners as complementary tools for re-oriented progress certification. For each application area (e.g. animal housing), such systems require specific principles and objectives linked to decision criteria and suitable indicators that are more outcome- and development-oriented. The integration of more outcome-oriented indicators to improve animal welfare is very promising for organic husbandry systems, because they can directly introduce a higher level of animal welfare.

Also in other areas, new, more outcome-oriented assessment systems are being developed for organic farms and other operators, e.g. for biodiversity (e.g. project of FiBL and Swiss Bird Protection) or for processors in EU projects the QACCP-System (quality control points) and codes of practice for wine (www.orwine.org). Similar approaches are being tested for social standards linked to certification. With help from a self-assessment and an external evaluation, certifiers can better understand how the farmer or processor can implement improvements. Admittedly, this may mean more process documentation and evaluation from stakeholders. Also, research and advisory institutions will be required to develop effective tools and instruments and to simplify standards. Currently, certification checks in fine detail whether boundaries have been overstepped; in future it could rather determine where a given farm is making progress in the right direction and what can be further optimised.

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