Is it getting better?
Animal welfare aspects in subsidized dairy and pig stables

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Is it getting better?
Animal welfare aspects in subsidised dairy and pig stables

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***Abstract* - In Germany, many stables are constructed with subsidies from the Farm Investment Scheme (FIS), a measure of the EU Rural Development Programme. The FIS is considered to be "the most important measure for the promotion of investments into welfare friendly housing systems" by the Federal Ministry for Food, Agriculture and Consumer Protection.**

We evaluated the effect of the FIS on animal welfare in dairy and pig farms, applying and adapting an environment based method. Information on animal housing conditions before and after the investments was gathered in a telephone survey carried out in 2007. The farms were selected in a random disproportional sample, stratified according to the federal states. The sample sizes amount to 18 % of the population of assisted dairy farms and 32 % of assisted fattening pig farms.

The analysis shows that the FIS does not achieve important improvements in the behavioural aspect of animal welfare at the examined farm types. Although there are some meliorations in the dairy farms, these are mainly due to the abandonment of tethered-stalls. At the pig farms, restriction of animal behaviour is a much more severe problem, and the FIS can not account for any progress.

Should the FIS strive for achievements in the field of animal welfare, expert based definitions of investments which really lead to improvements in animal welfare are a precondition. Additionally, the measure needs to be integrated into an approach involving tightened legislation, guidelines for welfare friendly housing systems, consumer information campaigns and possibly even compensation payments.

***Keywords:* - Farm Investment Support, Rural Development Measure, Animal Welfare**

I. Introduction

While consumers in Germany believe that farm animal welfare is one of most important tasks of modern agriculture [1], agricultural policies and legislation seem to show only little interest in the issue[1]. One policy measure including animal welfare in its set of objectives is the Farm Investment Scheme (FIS). Most dairy barns and an important number of pig stables are constructed with subsidies from the FIS, a measure of the EU Rural Development Programme. Farmers participating in the scheme receive a contribution ranging between 20 and 35 % of their investment costs.

The Federal Ministry for Food, Agriculture and Consumer Protection describes FIS as "the most important measure for the promotion of investments into welfare friendly housing systems" [2]. Against this background our objective was to evaluate the impact of the FIS on animal welfare. To this aim we:

- assess the state of animal welfare in the dairy and fattening pig stables before and after the investments,
- approach the subject of deadweight,
- draw conclusions on the effectiveness of FIS and
- develop recommendations for a targeted policy approach for the improvement of animal welfare.

II. Method

Animal welfare comprises the aspects animal health and animal behaviour. While animal health is considered to be mainly influenced by management[2],

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[1] Animal welfare appears at most in the secondary goals of policy measures and legislation is non existent for some farm animals such as dairy cows.

[2] Although a new stable can lead to facilitations in management (i.e., better abilities to control and to handle the animals), the main influence - the qualification and individual aptitude of the farmer - remains constant.

animal behaviour is strongly related to housing systems. For this reason, the analysis concentrates on the behavioural aspects of animal welfare.

Different approaches are available for the assessment of farm animal welfare. In animal-based methods, welfare is observed at the level of the individual animal for which a multitude of behavioural and health indicators are examined. In environment-based methods, housing information (i.e., space allowance) is used to assess behaviour. While the former require expert knowledge and can only provide results for a very limited number of farms/animals[3], environment-based methods can provide evidence for larger samples and are thus more appropriate for evaluation purposes.

The National Assessment Catalogue for Animal Husbandry (NACAH) is an environment-based method developed for a combined assessment of the effects of housing systems on the environment and animal welfare [3]. The assessment of animal welfare is based on research findings and judgements of a group of 37 scientists and representatives of different interest groups. Behavioural indicators structured according to functional systems are applied to evaluate the effects of the different housing systems on animal behaviour[4].

The indicators are classified into three grades with regard to the restriction of normal behaviour. These grades are then aggregated into three categories (A to C)[5].

Information on animal housing conditions before and after the investment was assembled in a census carried out by telephone interviews in 2007. The farms were selected in a random disproportional sample, stratified according to the federal states. The sample sizes amount to 18 % of the population of assisted dairy farms (n=320) and 32 % of assisted fattening pig farms (n=210).

III. Results

The application of the NACAH reveals that in dairy farms the animal welfare aspect behaviour was improved after the investment, but remained unchanged in pig farms. In addition, before investment > 80 % of pig farms were rated in the lowest category, C, while this held true for only 25 % of the dairy farms. After investment, all dairy farms are classified in category B. This result reveals a major weakness of the method: Only very substantial changes, such as the abandonment of tethered-stalls, can be depicted, while numerous alternations in the housing system with respect to pasture, space allowance, etc., remain invisible.

In order to enable a better differentiation between housing systems, new aggregation criteria were developed. The adapted assessment counts the number of functional systems in which the normal behaviour is executable according to the defined conditions[6]. With this aggregation, a more accurate picture of the situation before and after the investment into the new stable can be drawn (see Figure 1)[7]. In pig production, the behaviour of the animals is highly constricted in the initial situation. In more than 50 % of the stables normal behaviour is strongly restricted or not executable in any of the

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[3] An entire year was required for direct observations in 20 farms where four different fattening pig systems were assessed [4].

[4] The 8 functional systems are: social behaviour, locomotion, rest & sleep, feeding, elimination, reproductive behaviour, comfort behaviour, exploration.
Each functional system contains a number of indicators which varies according to the animal species and specialization of production. For example, for the functional system feed intake, the indicators for dairy cows are: feed selection, feed intake, water intake and undisturbed feed intake.

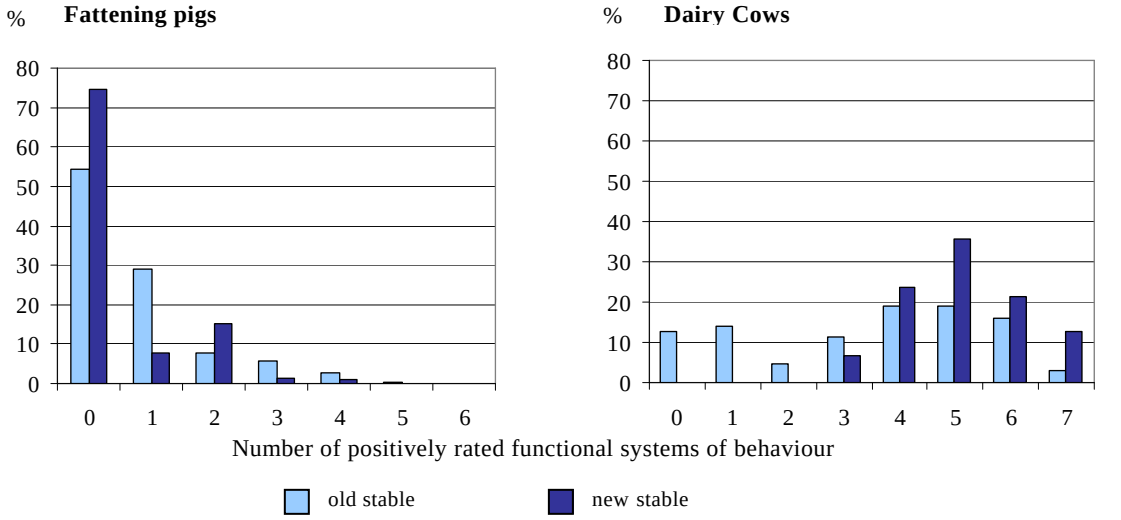
[5] The aggregation follows the following principle
A: No indicator has received the grade „strongly restricted/not executable“ and ≤ 3 Indicators received the grade "restricted", with a maximum of two in one functional system
B: All housing systems which fall in neither A nor C
C: In ≥ 50 % of the functional systems the indicators received the grade „strongly restricted/not executable“

[6] Number of functional systems, in which no indicator is judged "strongly restricted/not executable" and ≥ 50 % of the indicators are rated "unconfined". This aggregation results in a range of 0 to 8 categories.

[7] The 0-hypothesis that there is no difference in animal behaviour before and after investment can be rejected with 0.01 % probability of error for both the dairy and the pig farms (Wilcoxon-Signed-rank Test for dependent groups).

8 functional systems. After investment the situation deteriorates even further with over 70 % of the stables in this category. This worsening is mainly due to the prevalence and further spreading of pens with fully slatted floors and a reduction of space per animal.

Figure 1: Animal behaviour before and after the investment measured with the new aggregation method (percentage of stables with 0 - 7 positively evaluated functional system)



Source: own calculations, data from farm survey 2007

In dairy production, the situation is different. Less than 30 % of the stables were classified in the "poor" categories (0 - 2 positively rated functional systems) before investment, and, due to the abandonment of tethered-stalls, these categories are vacant after investment. If farm sizes are included in the analysis, it becomes evident that the improvement only occurs in the small farms with less than 40 dairy cows.

Up to now we have only investigated the effects of the subsidized investment. To estimate the effect of the subsidy itself (the net-effect), we need to know what the farmers would have done without the subsidy[8]. To identify the deadweight in the measure, the farmers were asked about their strategies. The results indicate that 50 % of the pig farmers and 45 % of the dairy farmers would have built the stables even without the investment support.

IV. Conclusions and recommendations

The FIS does not achieve important improvements in the behavioural aspect of animal welfare at the farm level. Although there are some meliorations in the dairy farms, these are mainly due to the abandonment of tethered-stalls - a husbandry form which is due to become extinct even without policy intervention in the middle run. At the pig farms, restriction of animal behaviour is a much more severe problem and the FIS can not account for any improvement.

[8] The decision to build a new stable might have been influenced by the subsidy but it is also possible that the farmer would have made his investment without it.

Should the FIS strive for achievements in the field of animal welfare, this can be accomplished in a strategic approach involving a set of different instruments:

- Existing legislation has to be scrutinized and tightened where necessary.[9]
- Guidelines for welfare friendly housing systems should be further developed by scientists and experts.
- Consumers need to obtain information about different housing systems to create a willingness to pay for the more expensive products from welfare friendly housings.
- For a targeted FIS, a precise definition of those investments, which lead to improvements in animal welfare is a precondition (the guidelines could be used here).
- If a rise in production costs is the result of the welfare friendly housing systems and the consumers are not prepared to pay higher prices, regular payments to compensate for the additional costs could be envisaged[10].

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[9] See recommendations of the Scientific Panel on Animal Health and Welfare of EFSA [5].

[10] For an overview of the consequences of different housing systems on production costs and competitiveness see [6].