Welfare Quality®
Science and society improving animal welfare

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The Assessment of Animal Welfare on Broiler Farms

edited by
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Welfare Quality Reports
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PREFACE

The objective of work package 463 was to test the implementation of the WQ Assessment Scheme on regular broiler farms. We assessed the perception and attitudes of farmers towards animal welfare and on-farm assessment, the experience and evaluation of the assessment itself and the relevance and applicability of the results. At the same time animal scientists assessed the welfare of the animals by WQ monitoring instruments. In addition they scored foot pad lesions at the slaughterhouse by way of video imaging. Both studies proceeded in parallel; farmers told, hence, about their real-life experience. It is to be noted that the WQ monitoring instruments were not at their final state, and experiences and comments of the farmers are to be interpreted as reflection and discussion on work in progress.

A team of sociologists carried out the study on farmers' experiences, perception and attitude whereas the assessment of animal welfare was done by animal scientists. The study took place in three countries – Netherlands, Italy and the UK.

We choose to focus on broilers for two main reasons. First of all the production cycle of broilers is relatively short and so it is possible to assess the welfare of different flocks within a short time-span and to check more easily any improvement of animal welfare as a result of farmers' interventions. A second reason for focusing on broilers is that it allows us to link this project to another project where a new way of checking for foot-pad lesions is developed. This is, moreover, a relatively easy manner of checking animal welfare that allows us to lower the burden of three on-farm assessments considerably.

In the following we report on the results of the welfare assessment (Part I) and the interviews with farmers about their perception and experience of animal welfare and the welfare assessment (Part II). In both parts we compare the results across the participating countries (Netherlands, Italy and United Kingdom). More in detail information on the national results of welfare assessment and interviews with farmers can be found in the deliverables 4.31.a (farmers' interviews) and D4.31b (assessment results). As appendixes, we provide the technical and sociological questionnaires and the assessment reports that were sent to the farmers in the different countries.

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Part I

Synthesis of the Farm Assessments in the UK, Italy and Netherlands

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INTRODUCTION TO PART I

The objective of work package 4.6.3 of Welfare Quality® was to test the implementation of the WQ assessment scheme on regular broiler farms. We assessed the welfare of broilers on farm and at the slaughter plant by using the WQ monitoring instruments. At the same time, social scientists studied the perception and attitude of farmers towards implementation strategies by way of on-farm interviews. Both studies proceeded in parallel. We chose to focus on broiler chickens for two reasons. First, broilers have a relatively short production cycle and, hence, we were able to do a pre-, interim- and post-assessment of their welfare within a relatively short timespan, and we were able to check possible improvements after intervention. Second, in a previous Welfare Quality® project an automated system was developed to monitor foot pad lesions in broiler chickens by means of video imaging (Work package 2.2., task 2.2.14). This allowed us to reduce the measurements in the interim round to only automatic monitoring of foot pad lesions at the slaughter plant (in Italy and the Netherlands, manual recording was necessary in the UK), thus reducing the number of visits to the farms, which are time consuming for the farmer as well as for the researchers. In this report we compare the results of the on-farm assessment studies in the Netherlands, Italy and the UK.

2

MATERIALS AND METHODS

2.1 FARMS

2.1.1 Dutch Farms

Eighteen farms participated in the on-farm assessment. All farms were contracted by the same slaughter plant, located in the south-east of the Netherlands. All farms were also located in the south of the Netherlands. The reason for the focus on one slaughter plant was that the video imaging equipment to monitor foot pad lesions (MEYN camera) was installed there. The slaughter plant provided us with a list of contracted farms. From that list, farms with fast growing strains were selected. We contacted these farmers by phone and asked them if they were willing to participate in the project. Farms that participated received a financial support of €120 for both visits. At each farm, only one (and the same) house was visited in the pre- and post-assessment, and measurements were carried out for these birds (if possible, if these birds could be separated from other flocks of that particular farm) at the slaughter plant.

2.1.2 Italian Farms

Eighteen farms participated in the on-farm assessment. All farms were contracted by the same company (Amadori Group) and by the same slaughter plant, which is located close to them, in the south-east of the Emilia-Romagna region. The reason for the focus on one slaughter plant was that the video imaging equipment to monitor foot pad lesions (MEYN camera) was installed there. The farms were selected by CRPA in collaboration with the responsible person of the quality insurance of the slaughterhouse. The farmers had been contacted by phone and asked if they were willing to participate in the project. At each farm, only one (and the same) house was visited in the pre- and post-assessment and measurements were done for the birds inside the house and later at the slaughter plant.

2.1.3 UK Farms

Ten farms participated in the on-farm assessment. All farms were contracted by the same slaughter plant, all of which were located in the south-west of the United Kingdom. The reason for the focus on one slaughter plant was that the video imaging equipment to monitor foot pad lesions (MEYN camera) was installed there. Due to design of the plant, the camera was used 'manually' and this required the assessor to visit the plant during the slaughter of the birds from the sample farms. This somewhat increased the number of total visits required. The slaughter plant provided a list of contracted farms. From the list, free-range farms using the Freedom Food standards were selected (see Appendix 1). The farmers were contacted by phone and asked if they were willing to participate in the project. At each farm, only one house was assessed, and the same house was monitored for the two farm visits and all three slaughter plant visits. No financial reward was offered to the farms, but a small 'thank you' gift (not money) was provided to all farms at the end of the study period.

2.2 PROCEDURE

The complete 'broiler welfare monitor' consisted of a farm visit of one day (between 5 and 1 days before slaughter) as well as a visit to the slaughter plant at the day of slaughter of the birds (see below for a description of the broiler welfare monitor). For the Dutch farms, a complete assessment was carried out for only 10 farms in the pre-assessment round. For the remaining farms in the the pre-assessment round and all farms in the post-assessment of the Dutch study round only the farm was visited and not the slaughter plant. In addition, for as many farms as was possible, foot pad lesions were measured using the video imaging equipment in the pre-, interim- and post-assessment rounds. As the Italian farmers slaughter the chickens at a higher age and live weights than in the intensive Dutch farms surveyed, the research team agreed to assess the birds in the Italian farms when they were about 6 weeks old in order to achieve comparable results; therefore the intervals between the visits in the Italian farms and the slaughter days were 7 days on average, (ranging from 2 to 13). In Italy, the complete assessment was carried out for 10 farms in the pre-assessment round. For the other farms in the pre-assessment round, and all farms in the post-assessment round, only farm visits took place. In addition, for all farms foot pad lesions were measured using the video imaging equipment in the interim- and post-assessment round (except for Farm 3 in the post assessment round). Moreover, for all farms data was collected from the slaughterhouse regarding dead on arrival, rejections, feed and water withdrawal times, transport time, waiting time in the lairage and slaughter weights. For the 10 UK farms, the complete broiler welfare monitor including the slaughter plant visit was carried out. In addition, foot pad lesions were measured using the video imaging equipment in all assessment rounds and for all farms. Dutch and Italian farms

were assigned to one of two treatment groups: farmers that only received their results and benchmark results after pre-assessment (N=9 farms) and farmers that received their results, benchmark results and feedback on their results by phone by one of the researchers of the project after the pre-assessment (N=9 farms). In addition, they received the results of the interim- and post-assessment round. The UK farms received their results after the pre-, interim- and post-assessment as a feedback form and verbal discussion of any points of interest to the farmer.

2.3 TIME SCHEDULE

For the Dutch farms, the pre-assessment was carried out between 2 April 2008 and 27 May 2008. The interim assessment was carried out between 11 July 2008 and 12 September 2008. The post-assessment was carried out between 1 September 2008 and 8 December 2008. Due to an outbreak of Gumboro's disease, the post-assessment for two farms had to be postponed for one production cycle. For the Italian farms, the pre-assessment was carried out between 6 May 2008 and 25 June 2008, the interim assessment between 26 July 2008 and 5 September 2008 and the post-assessment between 1 September 2008 and 14 November 2008. Due to an emergency in Farm 3, the post-assessed birds from Flock 3A had been slaughtered in another slaughterhouse and thus the data could not be recorded. The team agreed to assess foot pad lesions and to collect the data at slaughter of the birds of Flock 3B instead of those of Flock 3A because they were reared in the same house and environment within the same production cycle and using the same genetics and feeds; such data were not intended to be processed together with those of the other post-assessed birds but to get useful information for further analysis. For the UK farms, the pre-assessment was carried out between 5 November 2008 and 14 January 2009. The interim assessment was carried out between 19 January 2009 and 24 March 2009. The post-assessment was carried out between 24 March 2009 and 27 May 2009. The project was late in starting due the loss of key staff.

2.4 THE BROILER WELFARE MONITOR

Table 2.1 shows an overview of the measurements performed in the 'broiler welfare monitoring assessment'. How the different measures were performed is explained briefly below. Before starting the farm visits, the researchers were trained during a two-day session by experienced persons in how to perform the broiler monitoring assessment on farm and at the slaughter plant.

TABLE 2.1 Overview of measurements in the complete broiler welfare monitoring assessment for the different welfare criteria and welfare principles as defined in Welfare Quality®.

Welfare Criteria			Measures
Good feeding	1	Absence of prolonged hunger	Farm: feeder space, placement of resources, feeder alarms. Slaughter: emaciated birds (%), feed withdrawal and journey times.
	2	Absence of prolonged thirst	Farm: drinker space, drinker alarms. Slaughter: dehydrated carcasses, water withdrawal and journey times.
Good housing	3	Comfort around resting	Farm: plumage cleanliness, litter quality, floor area, atmospheric ammonia.
	4	Thermal comfort	Farm: panting (hot), social thermoregulation huddling (cold) behaviours ventilation, humidity, temperature alarms. Slaughter: dead on arrival, panting in lairage.
	5	Ease of movement	Farm: gait score, stocking density. Slaughter: stocking density in transport crates.
Good health	6	Absence of injuries	Farm: foot pad dermatitis, hock burn, breast burn, predator protection, cover on the range. Slaughter: skin damage, foot and toe damage, limb fractures, comb wounds, feather damage.
	7	Absence of disease	Farm: biosecurity measures, dust sheet test, skin pathologies, mortality, culls, inspection routines, disease and treatment records, method of culling, animal inspection time and ratio of animals to stockman, eye pathologies, spinal lesions, enlarged crop, nasal discharge, diarrhoea. Slaughter: enlarge crop, ascites, dermatitis/cellulites, emaciation, hepatitis, jaundice, pericarditis, septicaemia.
	8	Absence of pain induced by management procedures	Farm: effectiveness of perimeter fencing. Slaughter: birds flapping on the shackle line, birds receiving pre-stun shocks, birds not effectively stunned.
Appropriate behaviour	9	Expression of social behaviours	Farm: huddling, enrichment measures, aggressive behaviours.
	10	Expression of other behaviours	Farm: qualitative assessment, novel object test (test of fearfulness), natural light, enrichment measures, cover on the range.
	11	Good human-animal relationship	Farm: touch test, avoidance distance test, time spent by stockman inspecting birds.
	12	Freedom from general fear	

Source: Butterworth et al. (2007).

2.4.1 FARMER QUESTIONNAIRE

Each visit started with an interview with the farmer. The interview focused on general management practices, biosecurity, and some general farm characteristics. The questionnaire can be found in Appendix 2.

2.4.2 Panting and huddling

The percentage of birds showing panting or huddling behaviour was estimated at three locations in the house (entrance, center, far end of the house) (Dutch and Italian farms) or five locations in the house (UK farms). The proportion of birds showing panting or huddling was estimated and scored into 5 classes: 0=none, 1=a few, 2= a half, 3= more than a half, 4= all birds showing panting/huddling behaviour. The average score per flock was calculated.

2.4.3 Qualitative Behavioural Assessment (QBA)

The behaviour of the birds was carefully observed for 10 min near to the entrance of the house and in the center of the house. Thereafter the behaviour of the birds was scored according to 23 terms expressing their body language (see Appendix 3 for details).

2.4.4 Behavioural tests

For the novel object test, a colored plastic pipe (length 50 cm, diameter 3.2 cm, see Figure 2.1) was presented to the birds at three locations in the house (near entrance, far end and center of the house). The response of the birds was subsequently observed, by scoring the number of birds within a bird distance (± 30 cm) of the novel object every 30 sec during 2 the minutes after presention of the novel object. The average flock score was calculated.

The touch test was also carried out at the three locations in the house. The observer gently sat down. From the birds that were in reach of the observer, the observer tried to touch a maximum of 12 birds. If less than 12 birds could be touched, a maximum of 12 trials per location was carried out. The ratio between the number of birds touched and the number of birds in reach (for all locations) was calculated. The avoidance distance test was

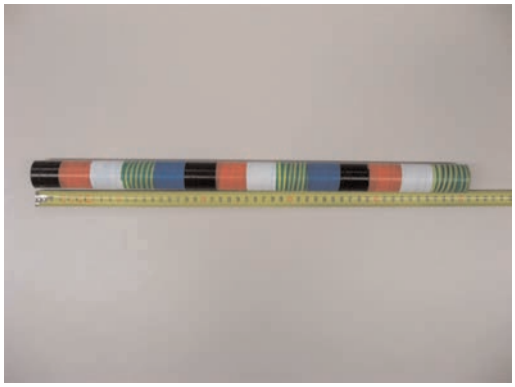

Figure 2.1 The novel object.

performed for the Dutch and Italian farms only. The avoidance distance test was carried out when the observer gently walked trough the house, i.e. from the center to the far end, from the far end to the entrance and near the entrance of the house. The observer chose a bird at approximately 1.5 m distance that was focused in the direction of the observer. Then he walked towards the bird and measured the distance at which the bird stood up and walked away from the observer. This was repeated seven times per location. The mean distance per flock was calculated.

2.4.5 Gait Score and Litter Quality

At 10 randomly chosen locations in the house, birds were penned using a catching pen. Twenty-five birds were subsequently stimulated to walk and their gait was scored using a 6-point scale (ranging from 0-5, where 0 means no walking deficiencies and 5 means that a bird is unable to walk (Kestin et al. 1992)). A flock score was calculated: flock score = ((N birds score 0 * 0) + (N birds score 1 * 1) + (N birds score 2 * 2) + (N birds score 3 * 3) + (N birds score 4 * 4) + (N birds score 5 * 5)) / (Total number of birds scored). At the same locations, the litter was scored according to a 5 point scale where a score 1 means that the litter is dry and flaky, and a score 5 means that the litter is wet and capped. For the UK farms, due to the high activity level and the difficulty in catching birds in the free range system a slight modification to the gait score method was employed. The house was walked at a slow and steady pace and birds were scored for their gait using a 6-point scale (ranging from 0-5, where 0 means no walking deficiencies and 5 means that a bird is unable to walk (Kestin, 1992) a total of 150 birds were assessed. The litter was scored at six representative locations throughout the house (pop holes, under drinkers, open areas) according to the same scale as described above.

2.4.6 Pathologies

At the same 10 locations as for the gait scoring, birds were penned using a catching pen and 10 birds were scored for cleanliness, foot pad dermatitis, hock burn, breast burn and pathologies. Cleanliness was scored on a 4-point scale from 1 (clean) to 4 (dirty). Foot pad dermatitis was scored on a 5 point scale from 0 (intact foot pads) to 4 (severe lesion). Both feet were scored and the most severe score was noted. Hock burns were scored on the same scale as foot pad dermatitis. Breast burns were scored on a two point scale (0: absence, 1: presence). In addition, for the Dutch and Italian farms every bird was scored if it had one of the following pathologies: eye discharge or swollen eye, enlarged crop, nasal discharge or respiratory noise, diarrhoea, spinal lesion. For cleanliness, hock burns and foot pad lesions flock scores were calculated as described for the gait score in Section 2.3.5.

2.4.7 Resource Measurements

In addition to the bird measurements, the following measurements were carried out with respect to the resources/dimensions of the house: length and width of the house and stocking density, feeder space per bird, type of feeders, evidence of spilled feed, type of drinkers, evidence of leaks, number of drinkers per bird, light intensity at 6 randomly chosen locations, ammonia (subjective score on a scale ranging from not detectable (score 0) to very unpleasant and difficulty in breathing (score 4)), ventilation characteristics, dust (subjective score ranging between 0 and 4, by scoring the amount of dust on a black paper that is laid down in the house at the start of the visit and scored at the end of the visit), presence of enrichment, characteristics of an outdoor run (if present), evidence of feather pecking or aggression.

2.4.8 Mortality and Culls

The total mortality since that the birds were placed was recorded and expressed as a percentage of the birds placed. If known, the reasons for culling were scored.

2.4.9 Weights

All weights as recorded by the farmer were noted.

2.4.10 Measures at the slaughter plant

2.4.10.1 Resource measurements/measures provided by the slaughter plant

At the slaughter plant, the following data were recorded: time of food and water withdrawal, flock health report as provided by the slaughter plant, catching method, percentage of dead-on-arrival (DOA) as reported by the slaughter plant, stunner type, stocking density in transport crates, slaughter age of the birds, percentage of rejections with reason of rejection, percentage of birds with bruises, wing and limb fractures. Not all parameters could be recorded at the UK plant because the assessor had to be scoring feet using the camera at the time that the birds were being processed (as the camera was not fully automated in this plant) and so was unable to score some points when feet analysis was taking place.

2.4.10.2 Animal-based measures

After arrival, the percentage of birds showing panting or huddling behaviour in the lorry and in the lairage was estimated and scored on a 5-point scale (0: no birds showing panting/huddling to 4: all birds showing panting/huddling). This was not scored at the UK plant. During the process of killing and slaughter, the number of birds flapping on the shackle during four separate minute intervals was recorded at two locations. The percentage of birds receiving pre-stun shocks was estimated by counting the number of birds receiving pre-stun shocks during ten separate one-minute intervals. In addition, the stunner effectiveness was determined by estimating the number of birds not adequately stunned at ten separate one minute intervals at three locations: immediately after the sticking point, during bleeding and at the entrance to the scalding tank. These parameters were not scored at the UK plant.

The number of birds with wing damage was recorded during two separate periods of five minutes. The number of birds with breast burn was recorded during two separate periods of one minute. Breast burns were scored on a 3-point scale: 0= no burn, 1=mild breast burn, 2=severe breast burn. The number of birds with foot pad lesions and hock burns were scored during two separate five minute periods. Foot pad lesions and hock burns were scored on a three-point scale, where 0=no foot or hock burn, 1=mild lesion, 2=severe lesion (erosion) (for a description of these classifications, see Berg, 2004). In addition, foot pad lesions were scored using the MEYN camera system for scoring foot pads. In the Dutch and Italian slaughterhouse, the MEYN camera system was placed at the slaughter line just after removing the feet from the carcass. Each pair of feet was photographed and scored according to the three-point scale as described above. The most severe score was noted. Due to differences in plant layout, the MEYN camera could not be mounted directly on line for the UK plant. Therefore a total of 500 feet comprising 250 left and 250 right feet (unpaired) were collected during the processing of the flock and were assessed by placing them manually in front of the camera. The feet were collected at various times as the flock was being slaughtered. Due to technical problems it was not possible to use the MEYN system for all Dutch and Italian flocks.

2.5 STATISTICAL ANALYSIS

Not all parameters measured were statistically analysed. Some parameters (slaughterhouse measurements) were only performed in the pre-assessment , other parameters were not selected because they were difficult to interpret or not reliable measured. For the parameters not analysed we provide the means and standard error of the mean. The following parameters were selected for analysis for effect of country and assessment round: novel object test score, touch test (number of birds in reach, ratio of birds touched), avoidance distance test, gait score (% birds with score 3 and more, and average flock

score), litter quality, cleanliness (% birds with score 3 and more, and average flock score), foot pad dermatitis and hock burn (% of birds with score 3 and more, and average flock score), breast burn, % birds with enlarged crop, diarrhoea, respiratory disease, slaughter weight, % DOA and % rejections. As it turned out from the separate analyses of the Dutch and Italian farms that there was no effect of intervention (see the country reports), and for the UK farms the intervention took the form of an assessment report and verbal discussion with individual farmers intervention was not taken as factor in the joint analysis of all three countries. Data were analysed using Genstat (Committee Genstat, 2000). Data were analysed using an ANOVA for unbalanced design, testing the effect of country, assessment round and the interaction between both.

3

RESULTS

3.1 GENERAL DESCRIPTION OF THE FARMS

3.1.1. Dutch Farms

Table 3.1 shows general characteristics of the Dutch farms visited. All farms had an intensive type of production, using fast growing birds and did not have an outdoor run. Average light intensity in the houses was 7.5 lux in pre-assessment and 6.2 lux in post-assessment. Ammonia was 'easily detectable' to 'unpleasant' for both visits. There was quite a lot of dust in the houses. The number of birds per drinking nipple varied between 9.8 and 19 birds/nipple. All farms had pan feeders with a feeding range of 0.8–1.5 cm^2/bird. Stocking density at the moment of visit varied between 16.4 and 21.1 birds/m^2, but most flocks were thinned.

3.1.2 Italian Farms

Table 3.2 shows the general characteristics of the Italian farms visited. All farms had an intensive type of production, using fast-growing birds and did not have an outdoor run.

Table 3.1 General characteristics of the Dutch farms visited in the project (N=18 farms), shown for both the pre- and post-assessment.

	Pre-assessment	Post-assessment
Breed	Ross (n=17), Cobb (n=1)	Ross (n=17), Cobb (n=1)
Number of birds per farm	99 222 (30 000–200 000)	99 208 (30 000–200 000)
Number of birds in the house visited	23 517 (11 700–42 000)	23 740 (12 000–43 000)
Number of houses per farm	4 (1–6)	4 (1–6)
Litter type	Wood shavings (n=16), chopped straw (n=2)	Wood shavings (n=16), chopped straw (n=2)
Age at time visited (days)	42 (39–47)	41 (36–45)
Age parent flock (weeks)	45 (27–89)	52 (30–101)
Stocking density on-farm at slaughter date (kg/m^2)	42.6 (38.6–45.5)	45.5 (39.9–48.8)
Flock thinned	Yes (n=16), no (n=2)	Yes (n=15), no (n=3)
Percentage of birds removed	21.4 (12.2–31.0)	21.5 (15.4–31.5)
Outside temperature at visit (°C)	15.5 (5–25)	11.0 (4–16)
Drinker type	Only nipples	Only nipples
Feeder type	Only pans	Only pans
Enrichment	No enrichment	No enrichment

TABLE 3.2 General characteristics of the Italian famers visited in the project (N=18 farms), shown for the pre- and post assessment.

	Pre-assessment	Post-assessment
Breed	Ross 708 (n=14) Ross 308 (n=2) Hubbard (n=2)	Ross 708 (n=15) Ross 308 (n=1) Hubbard (n=2)
Number of birds per farm	204 515 (29 500–520 000)	204 328 (29 500–520 000)
Number of birds in the house visited	12 942 (7,282–16 801)	11 360 (4,380–17 427)
Number of houses per farm	8 (2–24)	8 (2–24)
Litter type	Rice husks (n=1) Entire straw (n=1) Entire + chopped straw (n=1) Chopped straw (n=10) Wood shavings (n=1) Wood shavings + straw(n=4)	Entire straw (n=2) Entire+chopped straw (n=1) Chopped straw (n=10) Wood shavings (n=1) Wood shavings +straw (n=4)
Age at time visited (days)	44 (39–49)	43 (40–45)
Stocking density on-farm at slaughter date (kg/m^2)	27.9 (22.0–38.7)	24.7 (7.6–36.6)
Flock thinned	Yes (n=18)	Yes (n=18)
Percentage of birds removed	36.2 (6.6–49.4)	41.8 (18.8–69.8)
Outside temperature at visit (°C)	21.7 (13–26.1)	21.4 (4–16)
Drinker type	Only nipples	Only nipples
Feeder type	Only pans	Only pans
Enrichment	No enrichment	No enrichment

Average light intensity in the houses was 76.2 lux in pre-assessment and 16.6 lux in post-assessment (note that this was measured for six farms only in post-assessment). Ammonia was 'not detectable' to 'easily detectable' for both groups and for both visits. There was quite a lot of dust in the houses. The number of birds per drinking nipple varied between 15 and 16 birds/nipple. All farms had pan feeders with a feeding range of 4.7 cm^2/bird. Stocking density at the moment of visit varied between 9.2 and 10.2 birds/m^2, but most flocks were thinned.

3.1.3 UK FARMS

All farms were using free range systems. Two sizes of houses were assessed, eight houses holding approximately 5,750 birds and two houses holding 11 250 birds. The number of houses on the farms visited was very variable with combinations of large and small houses. Farms were restricted to a maximum number of birds/houses allowed by RSPCA standards – approximately 35 000 birds maximum – which could be made up from a combination of house sizes but with no more than a maximum of six houses. The two house sizes were roughly 460 and 900 m^2. All houses were naturally ventilated, with heat being provided if necessary by ambient heaters, which were in the houses all of the time. The birds were either wheat or corn fed, all 'as hatched' (mixed sex) and the breed was Devonshire Red (Hubbard), grown to approximately 56 days of age with an average stocking density of 12.5 birds/m^2 (and with a range from 11.8 to 12.9 birds/m^2). All birds had access to the range area, many of the 'paddocks' had newly planted trees (some of which were very small trees). Enrichment in the houses comprised bales of hay with planks set between groups of bales to act as perches, or purpose built wooden perches. Dust in all houses was

minimal as was the occurrence of spilled feed and water leaks. One flock did have a major water leak at the beginning of the flock cycle that required replacement of the litter whilst the birds were still in the house (this is not common). All houses used nipple drinkers and pan feeders. There was a range of birds/ nipple of 6.70 to 11.59 with an average of 8.60. The number of birds/cm of feeder had a range of 0.66 to 2.21 with an average of 1.98. All the farms and the broiler houses were in very good condition (some nearly new) they were well maintained and with all relevant documentation readily available (the companies had good document systems in place as part of RSPCA Freedom Food requirements). The birds examined in this trial were all in very good condition, and inspected regularly by the farmer, but nearly all of the farms had some problems with litter condition during the middle of the survey. Bad weather (particularly cold and wet) resulted in litter which was wet and capped, and this was made worse by the enforced use in some cases of chopped straw because of the unavailability of the farmers preferred litter which was wood-shavings.

3.2 PANTING

For the Dutch farms, the average score for panting was in pre-assessment 1.41, and in post-assessment 0.87. Thus, in pre-assessment more birds showed panting behaviour, and thus seemed to have more difficulty in losing heat, as compared to post-assessment. On some days during pre-assessment, the outdoor temperature was quite high (>23°C). No huddling was observed.

For the Italian farms, more birds showed panting behaviour in pre-assessment (average score 1.24), and thus seemed to have more difficulty in losing heat, compared to post-assessment (average score 1.18). No huddling was observed.

Neither panting nor huddling was apparent at any of the UK farms visited. The outside temperature ranged from approximately 0°C to 20°C.

3.3 QUALITATIVE BEHAVIOUR ASSESSMENT

Average scores for the different countries in pre- and post-assessment are shown in Figures 3.1 and 3.2. For the pre-assessment, all countries had equal scores for active, relaxed, and comfortable. The Italian farms scored lower for the other positive descriptions. Also for the post-assessment, lower scores were found for the Italian farms regarding positive

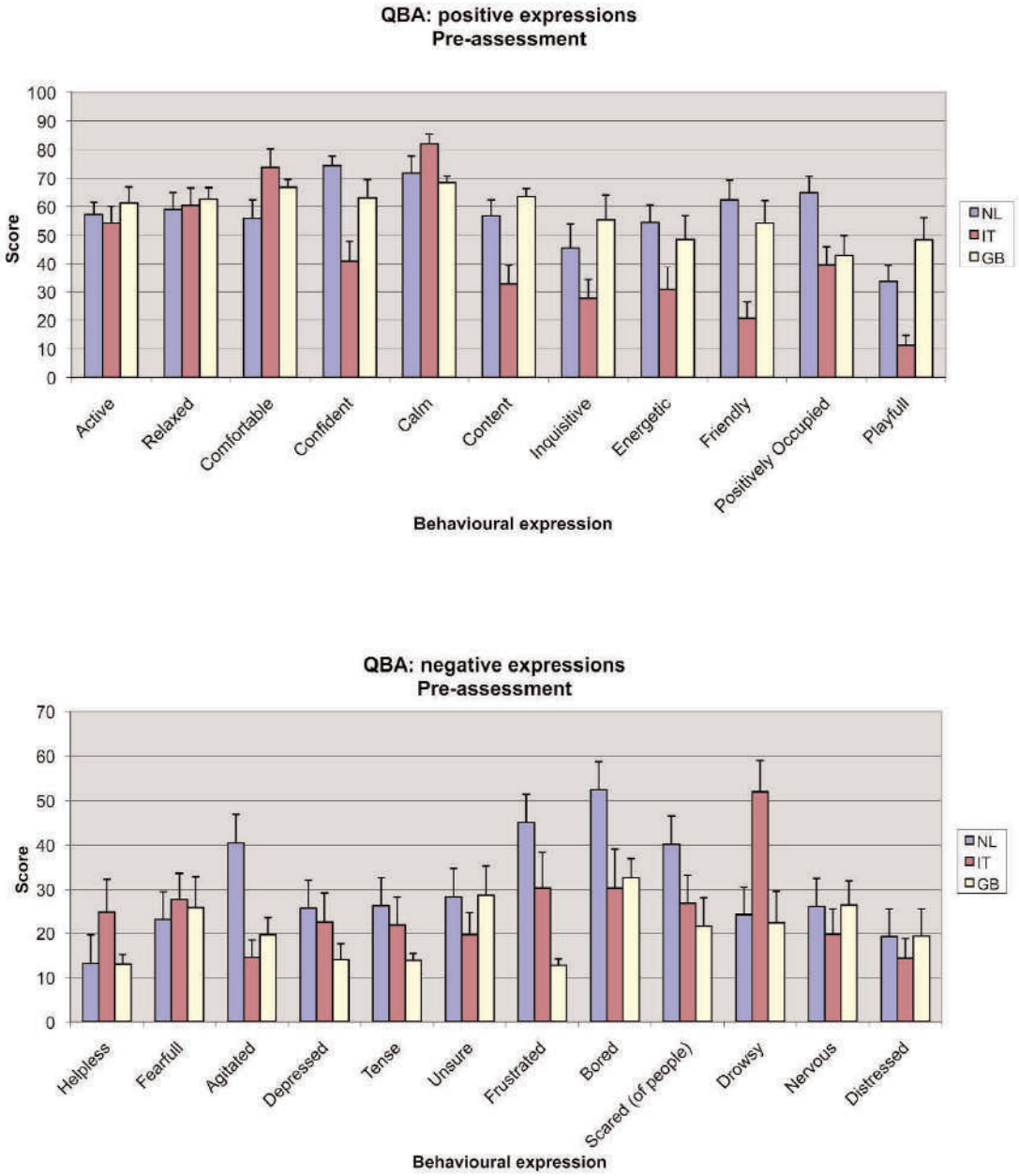

FIGURE 3.1 Average QBA scores for the pre-assessment for the different countries.

descriptions. In pre-assessment, Dutch farms had the highest scores with respect to the negative expressions. In the post-assessment, Italian farms had the highest scores, UK farms scored lower for some categories and Dutch farms were intermediate for the negative expressions.

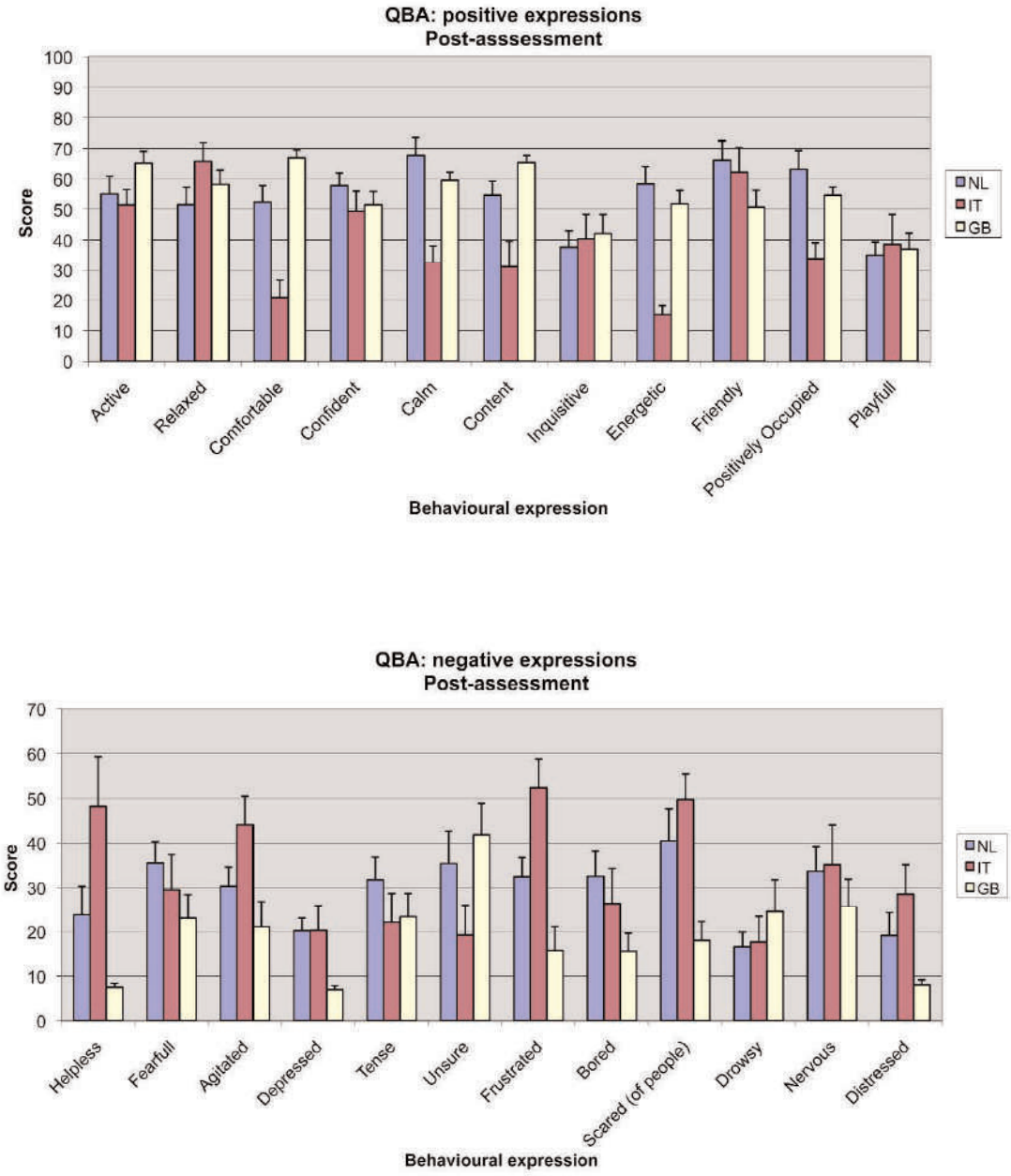

FIGURE 3.2 Average QBA scores for the post-assessment for the different countries.

3.4 BEHAVIOURAL TESTS

Table 3.3 shows the results of the behavioural tests for the different countries. For the novel object test and the number of birds in reach in the touch test, a significant effect of country was found ($P<0.01$). For the ratio of touched birds, a significant effect of country ($P<0.001$) as well as a significant interaction between country and assessment round was found ($P<0.05$). For the avoidance distance test, a significant effect of country was found ($P<0.05$). The number of birds within 30 cm of the novel object was highest for the Dutch

TABLE 3.3 Average scores for the novel object test, touch test and avoidance distance test for the Dutch, Italian and British farms.

	Dutch Farms (n=18)		Italian Farms (n=18)		UK Farms (n=10)	
	Pre	Post	Pre	Post	Pre	Post
Novel object test, # birds within 30 cm	38 ± 12	32 ± 7	12 ± 2	15 ± 3	24 ± 7	7 ± 2
Touch test, # birds within reach	84 ± 7	81 ± 8	103 ± 12	124 ± 34	2 ± 2	3 ± 3
Touch test, ratio of birds touched	0.53 ± 0.05	0.52 ± 0.05	0.22 ± 0.03	0.34 ± 0.08	0.26 ± 0.13	0.07 ± 0.07
Avoidance distance test, distance to person (cm)	65 ± 5	74 ± 6	58 ± 5	56 ± 6	NA	NA

Note: NA = not applicable.

farms. The number of birds in reach in the touch test was highest for the Italian farms, somewhat lower for the Dutch farms but very low for the UK farms. The ratio of birds that could be touched was highest for the Dutch farms and UK farms had a very low score in post-assessment. The distance to the person in the avoidance distance test was lower in the Italian farms as compared to the Dutch farms. The touch test was more difficult to apply in the UK farms, as the free-range Devonshire Red birds were very mobile and predominately moved out of touch range.

3.5 Gait Score

The results of the gait score are shown in Table 3.3. There was a significant effect of country for the percentage of birds with gait scores 3 and more ($P<0.001$) and a significant effect of country for the gait flock scores ($P<0.001$). Italian farms had the highest percentages of birds with gait scores of 3 and more, although this was also high for the Dutch farms. Gait scores were substantially better (lower) at the UK farms.

3.6 Litter Quality

For the Dutch farms, average litter scores were 3.9 ± 0.1 for pre-assessment and 3.9 ± 0.3 for post-assessment. In both assessment rounds litter quality was bad, as it was wet and capped at most locations in the houses. For the Italian farms, average litter scores were 2.5 ± 0.2 for pre-assessment and 3.0 ± 0.2 for post-assessment. For the UK farms, average litter scores were 2.9 ± 0.3 for pre-assessment and 3.0 ± 0.2 for post-assessment. Litter quality was very variable both between and within houses, with the worst areas under the drinkers and in front of the pop holes. A significant country effect was found for the litter scores ($P<0.001$). Litter quality was worst in the Dutch farms and best for the Italian farms.

TABLE 3.4 Percentages of birds in the different classes for the gait score, as well as the percentage of birds with scores 3 and more, and the average flock score for the different countries (mean ± sem).

	NL (N=18)		I (N=18)		UK (N=18)	
	Pre	Post	Pre	Post	Pre	Post
Gait score 0 (%)	1.2 ± 0.6	0.5 ± 0.2	0.9 ± 0.3	0.7 ± 0.3	3.9 ± 1.5	13.3 ± 2.5
Gait score 1 (%)	18.2 ± 2.9	14.1 ± 2.2	14.08 ± 2.2	8.4 ± 1.9	34.4 ± 4.7	43.7 ± 4.5
Gait score 2 (%)	60.0 ± 4.1	54.3 ± 4.5	56.8 ± 2.8	58.1 ± 1.5	49.2 ± 4.7	33.5 ± 3.4
Gait score 3 (%)	1.4 ± 3.1	28.2 ± 2.6	21.6 ± 1.8	28.7 ± 1.8	12.3 ± 4.3	9.2 ± 3.5
Gait score 4 (%)	2.6 ± 1.0	3.9 ± 0.9	5.3 ± 1.5	3.0 ± 0.7	0.3 ± 0.1	0.3 ± 0.2
Gait score 5 (%)	0.7 ± 1.2	0.4 ± 0.1	1.3 ± 0.3	1.1 ± 0.2	0 ± 0	0 ± 0
Gait score >2 (%)	20.7 ± 4.2	32.6 ± 3.5	28.2 ± 3.3	32.8 ± 2.1	12.6 ± 4.4	9.4 ± 3.6
Flock score	2.04 ± 0.07	2.23 ± 0.05	2.20 ± 0.1	2.28 ± 0.05	1.7 ± 0.1	1.6 ± 0.1

3.7 PATHOLOGIES

3.7.1 Cleanliness, Foot Pad Lesions, Hock Burns and Breast Burns

Average scores for cleanliness, foot pad dermatitis, hock burns and breast burns are shown in Table 3.5. A significant effect of country was found for cleanliness flock score and the percentage of birds with cleanliness scores of 3 and more ($P<0.001$). Cleanliness scores were much better for the UK farms, with no birds scoring 3 and more, and also better for the Italian farms as compared to the Dutch farms. A significant effect of country was also found for the foot pad dermatitis flock score ($P<0.01$) and the percentage of birds with scores of 3 and more ($P<0.001$). Also a significant effect of interaction between country and assessment round was found for both foot pad dermatitis flock score ($P<0.05$) and the percentages of birds with scores 3 and more ($P<0.01$). UK farms had the lowest flock scores for foot pad dermatitis and the lowest percentage of birds with scores 3 and more. Dutch farms had about the same scores in pre- and post-assessment, scores in Italian farms improved and scores in UK farms became worse between pre- and post-assessment. A significant effect of country was found for the percentage of birds with hock burn score 3 or more ($P<0.05$), and the hock burn flock score ($P<0.001$). UK farms had the best scores for hock burns. Breast burns were only measured at Dutch and Italian farms. A significant effect of country was found ($P<0.001$), with Dutch farms having the highest percentages of breast burn.

3.7.2 Pathologies

Average percentages of birds with pathologies present are shown in Table 3.6. Pathologies were not determined at the UK farms. A significant effect of country was found for the percentage of birds with respiratory disease and diarrhoea ($P<0.001$ for both parameters), with Dutch farms having the highest percentages of birds with signs of respiratory disease and diarrhoea.

TABLE 3.5 Average flock scores for cleanliness, foot pad dermatitis (FPD) and hock burn (HB), and percentages of birds with cleanliness, foot pad dermatitis and hock burn scores of 3 and more, and percentage of birds with breast burn for the different countries.

	NL (N=18)		I (N=18)		UK (N=10)	
	Pre	Post	Pre	Post	Pre	Post
Birds cleanliness score >2 (%)	53.7 ± 4.7	51.8 ± 5.5	39.8 ± 5.7	43.2 ± 8.0	0	0
Flock score cleanliness	2.5 ± 0.07	2.6 ± 0.1	2.3 ± 0.1	2.4 ± 0.2	0.7 ± 0.08	0.4 ± 0.07
FPD score >2 (%)	52.8 ± 6.0	48.9 ± 5.5	35.0 ± 6.7	24.8 ± 3.7	4.8 ± 2.8	20.1 ± 7.2
Flock score FPD	1.5 ± 0.08	1.5 ± 0.1	1.8 ± 0.2	1.4 ± 0.2	0.7 ± 0.2	1.1 ± 0.2
HB score >2 (%)	6.6 ± 2.0	10.0 ± 2.8	6.3 ± 3.7	2.7 ± 0.6	0	0
Flock score HB	1.0 ± 0.1	1.1 ± 0.1	0.8 ± 0.1	0.6 ± 0.1	0.1 ± 0.03	0.09 ± 0.02
Birds with breast burn (%)	1.8 ± 0.4	2.8 ± 1.0	0.04 ± 0.01	0.04 ± 0.02	*	*

TABLE 3.6 Average percentages of birds with signs of respiratory disease, enlarged crop and diarrhoea for the different countries.

	NL (N=18)		I (N=18)		UK (N=10)	
	Pre	Post	Pre	Post	Pre	Post
Birds with signs of respiratory disease (%)	5.8 ± 2.0	7.2 ± 2.9	0.1 ± 0.04	0.2 ± 0.05	ND	ND
Birds with enlarged crop (%)	0.2 ± 0.1	0	0	0.01 ± 0.03	ND	ND
Birds with diarrhoea (%)	7.5 ± 2.6	4.8 ± 1.2	0.04 ± 0.06	0.2 ± 0.02	ND	ND

Note: ND = not determined.

3.8 MORTALITY

Percentages of dead and culled birds were on average 2.8 ± 0.4% for pre-assessment and 2.9 ± 0.2 for post-assessment for the Dutch farms. For the Italian farms, percentages of dead and culled birds were on average 3.9 ± 0.3 for pre-assessment and 5.0 ± 0.4 for post-assessment. For the UK farms, percentages of dead and culled birds were on average 2.2 ± 0.4 for pre-assessment and 2.7 ± 0.6 for post-assessment. A significant effect of country was found ($P<0.001$). Italian farms had the highest percentages of dead and culled birds, scores for Dutch and UK farms were similar.

3.9 MEASURES AT THE SLAUGHTER PLANT

3.9.1 Foot pad lesions

In pre-, post- and interim assessment, foot pad dermatitis was (also) assessed using an automated system at the slaughter plant (MEYN camera). However, due to technical failure the video imaging equipment could not be used for all Dutch and Italian flocks. In that case

foot pad lesions were also assessed manually for the Italian flocks. Table 3.7 shows the data for all three countries. Mirroring the results for foot pad data scored at the farm, Dutch farms had the worst scores and UK farms had the best scores.

3.9.2 Other parameters measured at the slaughter plant

Table 3.8 shows averages for the parameters measured at the slaughter plant in pre-assessment. All slaughter plant data were assessed at one plant per country (as the camera was installed there). The Dutch plant used an electrical stunner. The Italian plant used a CO_2 stunner. Percentages of birds not adequately stunned were much higher at the Dutch plant as compared to the Italian plant. The data shown in this Table were only determined for ten farms in the pre-assessment round. These measures were not done at the UK plant as the assessor had to manually collect and score feet and so was unable to assess other areas of slaughter.

In addition, Table 3.9 shows average values for DOA, rejections and slaughter weight for all countries. In the Netherlands, some farms decided during the experiment to slaughter their birds elsewhere and slaughter data could not be obtained for these farms. Therefore the total number of farms per treatment group differs from the on-farm measurements. In addition, it should be considered that for the Dutch farms that these variables were determined for all birds slaughtered from a particular farm on that particular day, thus, that it was not possible to score these parameters only for the specific flock that was assessed at the farm. A significant effect for country was found for slaughter weight and for the percentages of dead-on-arrival (DOA) ($P<0.001$ for both parameters), but not for the percentages of rejection. Slaughter weights were higher for the Italian farms. Percentages DOA were lowest for the Dutch farms.

TABLE 3.7 Average scores (± sem) for foot pad lesions in the pre-, interim- and post-assessment measured at the slaughter plant.

	Pre-assessment	Interim	Post-assessment
Dutch Farms			
Score 0	36.1 ± 6.0	23.4 ± 3.0	18.2 ± 4.0
Score 1	29.5 ± 3.5	21.1 ± 2.2	15.9 ± 1.0
Score 2	34.4 ± 6.4	55.5 ± 4.8	65.9 ± 4.4
Italian Farms			
Score 0	38.3 ± 23.3	66.7 ± 16.6	49.6 ± 27.1
Score 1	47.0 ± 15.8	16.0 ± 7.0	22.7 ± 10.8
Score 2	14.7 ± 8.8	17.4 ± 11.3	23.4 ± 22.6
UK Farms			
Score 0	56.9 ± 7.2	23.9 ± 4.2	40.6 ± 8.9
Score 1	20.7 ± 1.8	22.4 ± 1.6	22.1 ± 3.0
Score 2	22.4 ± 7.1	53.7 ± 4.8	37.2 ± 7.4

Note: For the Dutch farms, these were measured by video imaging (N=9, 12, 6 for the pre-, interim and post-assessment respectively), for the Italian farms, these were measured either by video imaging or scored manually (N=10, 18, 17 respectively for the pre-, interim- and post-assessment), and for the UK farms these were measured by video imaging (N=10 for all assessment rounds).

TABLE 3.8 Average scores for parameters measured at the slaughter plant (± sem).

Parameter	Dutch farms (N=10)	Italian farms (N=10)
Total duration feed withdrawal (min)	892 ± 28	749 ± 28
Total duration water withdrawal (min)	440 ± 24	395 ± 27
Journey time (min)	49 ± 6	112 ± 8
Time in lairage (min)	389 ± 23	282 ± 30
Slaughter age (days)	44 ± 1	52 ± 1
Panting in lorry/lairage	1 ± 0 / 1.5 ± 0.2	1.18 ± 0.12 / 1.18 ± 0.12
Huddling in lorry/lairage	1.8 ± 0.4 / 1.1 ± 0.1	0 ± 0 / 0 ± 0
% birds not adequately stunned, stunner exit/sticking point	7.1 ± 2.4	0.01 ± 0.013
% birds not adequately stunned, during bleeding	27.2 ± 2.5	0.95 ± 0.37
% birds not adequately stunned, entrance to scalding tank	5.4 ± 1.4	0.02 ± 0.13
% birds with wing damage	3.6 ± 1.2	15.44 ± 1.4
% birds with breast burn	7.9 ± 1.6	12. 57 ± 1.0
% birds with severe foot pad lesions (class 2)	38.7 ± 6.5	14.38 ± 3.1
% birds with severe hock burn (class 2)	7.0 ± 1.7	6.6 ± 1.3

Note: These parameters were only measured for 10 farms in pre-assessment.

TABLE 3.9 Average slaughter weight, percentage of rejections and % DOA's (± sem) for each treatment group in the pre- and post-assessment.

	NL		I		UK	
	Pre (N=17)	Post (N=12)	Pre (N=18)	Post (N=18)	Pre (N=6)	Post (N=10)
Slaughter weight (kg)	2.41 ± 0.03	2.44 ± 0.04	2.74 ± 0.06	2.72 ± 0.05	2.40 ± 0.02	2.28 ± 0.02
Dead-on-arrival (%)	0.13 ± 0.02	0.12 ± 0.02	0.33 ± 0.04	0.51 ± 0.13	0.6 ± 0.01	0.13 ± 0.06
Rejections (%)	1.0 ± 0.3	0.5 ± 0.1	0.3 ± 0.04	0.6 ± 0.1	ND	ND

Note: ND = not determined.

4

DISCUSSION

In this report, we present data collected with the broiler welfare monitoring assessment in three different European countries: the Netherlands, Italy and the United Kingdom. The two most important aims of the study were (1) to test the broiler welfare monitoring assessment in practice, and (2) to study the effect of intervention on the results of the farmers. From the separate country reports of the Netherlands and Italy, it turned out that intervention as applied in this project did not have any measurable positive effect on the results of the farmers in both countries. For the UK farms, no direct physical intervention was carried out, but it was asked if any of the farmers changed something in their management after receiving the results of the assessment in an advisory assessment report (none of the farmers made any physical changes). As the intervention did not result in statistically significant alterations in the welfare measures between pre- and post-assessment, the focus here is on the results of the different countries in relation to differences in housing and management. Experiences with the welfare monitoring assessment in practice are reported in the separate country reports.

As described in the methods section, there were large differences between the assessed farms per country. UK farms were free-range farms using Freedom Food standards, whereas Dutch and Italian farms were farms with an intensive type of production. Most important differences were the use of a slow-growing breed in the UK farms (Devonshire Red, grown to 56 days of age) whereas Dutch and Italian farms used fast growing breeds (Ross, Cobb or Hubbard, grown to approximately 42 days (Netherlands) or 52 days (Italy)). In addition, UK farms had an outdoor run and enrichment in the houses whereas Dutch and Italian farms were only indoors without any enrichment. Furthermore, there were differences in stocking density when the birds were placed. Stocking density at day 0 ranged from about 22 birds/m^2 (Dutch farms), to about 17 birds/m^2 (Italian farms) to about 12 birds/m^2 (UK farms). Dutch and Italian flocks were thinned. Where the majority of the Dutch farmers used wood shavings, Italian and UK farms also used (chopped) straw as litter. Other differences that may play a role in the results, but could not be ascribed to the farms, were climate (probably more humid in the Netherlands and the UK) and season of the assessment (winter and spring in the UK, spring, summer and autumn in the Netherlands and Italy). The differences in responses to the behavioural tests between farms in the different countries (novel object test and touch test) can probably be ascribed to differences in mobility between the birds. The Devonshire Red birds at the UK farms were very mobile and difficult to touch, as compared to the birds at the Dutch and Italian farms. Ability to touch the birds in a free-range system should be viewed in the light of the birds ability to move away from the assessor and to leave the house or assessment area. In general birds at the Dutch farms were not very mobile which may also have affected their

response to the novel object. The fact that panting was observed in the Dutch and Italian farms, but not in the UK farms, may be explained by breed differences (faster growing birds may have higher metabolic energy turnover and experience difficulty in regulating temperature) and higher stocking densities in the Dutch and Italian farms. However, higher outdoor temperatures when doing the assessment in Dutch and Italian farms may also explain the findings of panting in these flocks. Gait scores were much better in the UK flocks when compared to the Dutch and Italian farms. The Devonshire Red birds in the UK farms were very mobile and had much more opportunity to move and explore (outdoor area, enrichment, lower stocking density) as compared to the Dutch and Italian birds, and this probably had positive effects on the gait of the birds. Litter quality was in general not very good (or even bad) in all countries. As there is a relationship between litter quality and the frequency of foot pad lesions, hock burns, breast burns and cleanliness (e.g. Haslam et al., 2007), this may explain the high percentages of severe foot pad lesions and fouling of the birds in the Dutch farms. However, scores for foot pad lesions, hock burns and cleanliness were best for the UK farms where litter quality was not very good either. This may be explained by the different type of breed used (more mobile and having better gait scores as compared to intensive breeds) and stimulation of mobility through the outdoor run, enrichment and lower stocking density. Italian farms were using the same breeds as the Dutch farms but had better scores for foot pad lesions and cleanliness. The somewhat better scores for litter quality in Italian farms as compared to Dutch farms may have caused this difference. Differences in climate may also have played a role here. Slaughter plant measures were only done for pre-assessment in Italy and the Netherlands and therefore not analysed. One remarkable difference was the low percentage of birds not adequately stunned in the Italian plant (using a gas stunner) as compared to the Dutch plant (using an electrical stunner).

5

CONCLUSIONS

The comparison of the results of the three countries involved in the project showed that for almost every parameter assessed there were significant differences between the countries, that could most probably be ascribed to differences in the types of farms assessed: free range farms with slower growing birds in the UK, and intensive type of production with fast growing strains in The Netherlands and Italy. UK free range farms had the best scores for gaits, cleanliness, foot pad dermatitis and hock burns. Differences in behavioural responses to the novel object and in the touch test, between countries, may be ascribed to differences in mobility between the breeds used.

Part II

Farmers' Experiences of the Farm Assessment: Interviews with Farmers

by
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6

METHODOLOGY

The participating farms in the Netherlands delivered to Flandrex, poultry processing plant in Ommel, in Italy to Amadori Group, poultry processing plant in San Vittore di Cesena, and in the UK to the Hook2Sisters production company in Devon, which is part of the 2 Sisters Food Group. The video imaging tool was installed at the slaughterhouses. The processing plant provided the farmers' addresses. They were contacted by the animal scientists who invited them to participate in the parallel studies.

In the Netherlands and Italy, regular indoor broiler production farms participated in the study. The UK research focused on farms producing free-range chickens. This allowed us to study the fitness of the monitoring tool for two different production types. Initially, we also wanted to check for the impact of information provided and therefore distinguished between three groups of producers:

1. producers who received information about the welfare assessment but without on-farm assessment, i.e. the control group;
2. producers who received on-farm assessment plus feedback on individual and benchmark results;
3. producers who received on-farm assessment plus feedback on individual and benchmark results and received individual advice.

The Dutch and Italian study kept to this plan. But due to unforeseen developments in the UK the plan had to be slightly adapted for what regards the UK study and the comparative analysis. The UK data-collection was delayed considerably because the slaughterhouse with which the initial agreement was carried out had to be closed and changed ownership, and as a result new arrangements had to be made. As time was running short, we had to decide to cut down the sample size in the UK. To minimize the loss of data, we decided to skip the control-group interviews and to focus on farms that participated in the sociological interviews as well as the technical assessment. We were therefore unable to include the comparison across control groups in this international analysis. The national analysis of Italian and Dutch data, however, reveals that there is little difference between the control and assessed groups with regard to their attitude towards animal welfare and the monitoring of it (see national reports).

In all three countries, the repeated assessments took much more time than foreseen. As a result, farmers had to wait longer for their results. In the Netherlands, the sociological interviews took place four to eight weeks after the assessment was done. In the UK, the project team decided to cut the interviews into two parts; the major part took place shortly

after the assessment and on the farm; the part regarding the appreciation of the results took place later and by telephone. In Italy, the sociological interviews took place three to eight weeks after pre-assessment was completed.

6.1 FARMS

In the Netherlands, most of the broiler farms were located in the eastern part of the province of Noord-Brabant. Farms differed in size from 30 000 up to 400 000 broilers, and in level of specialization – from highly specialized to mixed farms. In Italy, all farms are located in the province of Forlì-Cesena, in the eastern part of the region Emilia-Romagna, northern Italy. Farm size ranged from 30 000 to 550 000 places and the production system is traditional intensive. In the UK, the farms were located in south-west England, in the counties of Cornwall, Devon, and Somerset. The farms were free range, with flock sizes ranging from 11 500 to 46 000 birds (see Appendix 4).

The Dutch broiler producers were independent and private producers, although production was embedded in a web of contracts with chick sellers, feeding companies and the slaughterhouse. The Italian farmers are all highly specialized even if in some cases farmers have a second job outside the farms. The biggest farms belong to the Amadori Group, one of the main Italian companies in the production and poultry processing sector: in these cases interviewees were the farm keepers hired by the company. The others are agricultural entrepreneurs whose farms are vertically integrated to the same company through a contractual agreement. The processing company supplies feedstuffs, chickens and technical and veterinary assistance, while farmers provide bird house, equipment and labour force.

In the UK, production is aligned with the demands of a number of national supermarkets and with the Freedom Food assurance scheme, which is linked to the RSPCA. The production company provides the farmers with chicks, food, and technical support.

6.2 SEMI-STRUCTURED QUESTIONNAIRE

The interviews took place on the farm, and were held using a semi-structured questionnaire (see Appendix 5). The questions in the semi-structured questionnaire were ordered thematically:

Part I	general data on the farmer and his or her farm;
Part II	human–animal relations from producers' perspective;
Part III	general information received beforehand;
Part IV	experiences with the implementation of the Assessment Scheme;
Part V	impressions of/opinions about the assessor;
Part VI	opinions on the results of the assessment and the advice;
Part VII	acceptance of and improvements for the Assessment Scheme;
Part VIII	reflections on future implementation of the Assessment Scheme;
Part IX	who farmers trust if it concerns animal welfare;
Part X	open space for expressing worries and hopes about the assessment.

7

FARMERS' DEFINITIONS OF ANIMAL WELFARE

We started the interviews by asking farmers about their definition of animal welfare.[1] As we will demonstrate in the following, most farmers considered health and productivity as the most important aspects of welfare as it allowed them to fulfil their major ambition – optimizing their technical results.

7.1 PRODUCTIVITY

When defining animal welfare, most farmers referred to those conditions and practices that in their view assured the animals' health, wellness and growth. This was important because the expectations towards 'good growth' were continuously rising. While chickens were expected to grow 50 grams per day some year ago, a farmer today needed to realize a growth of 60 grams per day in order to earn a living. Good growth was fast growth, and fast growth could only be realized with good health and good welfare. And, hence, good growth implied good welfare and good health.

> 'I've never seen good results when chicken are kept in bad conditions' (Italian farmer).
>
> 'We have a type of animal that is bred in order to grow fast. If growth is optimal, I assume that I created good conditions' (Dutch farmer).
>
> 'Stockmanship and husbandry are important, if they are good you won't be far away with your welfare; it's the whole job; if animals are growing well, your welfare and production will be good as well' (UK farmer).

For many farmers animal welfare was something very similar to or at least close to health. It meant assuring that the animals were in a good state. This entailed the following:

[1] See Questionaire Parts II and XI (Appendix 5).

ensuring good health conditions by keeping them at the right temperature, at the right humidity, on a dry litter, assuring access to feed and water; or, in short, making sure that the technical aspects of broiler production are optimal. The achievement of good economic results was the major driving force for animal welfare; assuring good welfare reduced the occurrences of sanitary problems and mortality, and increased the growth rate. Many farmers argued that if farmers looked well after their animals, the animals would return the favour and perform well for them economically.

> 'If the chickens are healthy, they automatically have good welfare. If you talk about healthy chickens, you speak about low mortality rates, animals standing well on their legs, and having healthy intestines. One should get as many kilograms of meat out of as few kilograms of feed as possible' (Dutch farmer).

7.2 CONSUMER DEMAND

Quick growth demands a lot of the chickens. The farmers agreed that quality of life would be better if chickens had one more week to grow and more space in the house. But as long as consumers did not buy this better life, farmers felt neither capable nor responsible to change the conditions of production.

> 'It can all be arranged, but it is very costly. With fewer animals per square meter, all costs per chicken increase – for electricity and gas. The finances of the farm are calculated on the basis of 20–25 chickens per square meter. Changing that never pays back. It would not improve anything, because I would need to find the money for paying these costs in another way' (Dutch farmer).

7.3 SUPPLY OF GOOD MATERIAL, HOUSING AND MANAGEMENT

Farmers considered technical improvements important to make sure that animals fared well and produced well. It was a delicate balance that required careful magament in order to optimize both welfare and production.

> 'It is about those conditions that allow chickens to live well: first of all good litter, than the right ventilation and good quality of feed' (Italian farmer).

Many farmers mentioned that they could not fully control the chickens' welfare as they depended on the material supplied and veterinary schemes associated to certain flocks.

> 'It is also genetically determined. If a flock is not so good, welfare is less… Good schemes for vaccinations help to kill viruses in time. This increases the welfare of the flock. It will be never 100%, but mortality has to remain limited' (Dutch farmer).

When they could not control the starting conditions, they did not consider themselves fully responsible for the welfare of their animals either. In their view the animals' welfare was to a large degree determined by the suppliers of material – be it the chicks themselves, the feed or the litter. All these factors were interrelated. The quality of the feed influenced the intestines of the chickens, which affected the manure and the quality of the litter, which influenced the conditions in the animal house and, hence, the preconditions for welfare.

> 'Every round is different. It depends very much on the quality of the chickens. If the chicks that are delivered are of bad quality, you go from one disaster to the next' (Dutch farmer).

But it was also important to have modern and efficient equipment in order to control and optimize production conditions. The temperature, humidity and ventilation/air changes within the house should be controlled in accordance with external climate conditions by means of cooling/heating and ventilation system. Controlling these parameters made it possible to keep litter dry, reduce ammonia concentration and improve the quality of the air.

7.4 BALANCING COSTS AND BENEFITS

Farmers perceived animal welfare as a function of productivity and economic performance, applied to intensive farms.

> 'Chickens must find the best conditions of life within the limits of an intensive breeding system' (Italian farmer).

They continuously balanced maximizing production with controlling costs. To give just one example: optimal animal welfare required a good climate. But a good climate also cost a lot of money and the margins were small.

> 'The optimization of one parameter influences the optimum of others. We are searching for the best welfare possible. The less problems, the better it is. For us the financial profit matters. The costs go before the benefits. Good technical results

> bring welfare for the chickens and financial advantage. Therefore, management has to be optimized' (Dutch farmer).

The farmers controlled the temperature and humidity in the house, managed and adapted the heating/cooling and ventilation system, kept drinkers and feeders functioning properly, controlled litter conditions, and added litter when necessary. This was what they needed to do in their view to check for any kind of signals of disease outbreak and welfare loss.

7.5 WELFARE, LOCAL KNOWLEDGE AND FARMING PRACTICE

Broiler producers took their management decisions on the basis of computer measurements, but also from their own observations. They agreed that farmers could only assess and maintain welfare by 'walking' through their sheds regularly and by getting to know their flocks intimately. One needed to get close to the animals – checking the computer was never sufficient. Even in high-tech, fully automated sheds, where ventilation, heating, humidity, light, feed and drink were all controlled (which was the vast majority of sheds), farmers still claimed that there was no substitute for walking through the sheds.

Time and again, farmers explained to know 'by instinct' when things were going well – or when something was wrong:

> 'You just know, you just see them. They'll tell you, if there's something not right as soon as you go in the shed… They'll either be quiet or else be noisy, one or the other, and you just get a feel for it' (UK farmer).

Before entering the animal house, they controlled the ventilation but also the water and feed intake. Once in the animal house, they checked the litter quality but also observed the behaviour of animals. The chickens should feel safe and should express natural behaviour.

> 'You can see whether the animals do well; this is a matter of experience. You see whether they are lively, energetic, and whether the plumage is nice. If you enter the animal house and they jump everywhere, you know that they feel well. Computers cannot tell you; you have to see it with your own eyes. But you can create good conditions. What I just mentioned [water, feed, light, and ventilation] matters, as well as the temperature' (Dutch farmer).

Farmers also watched how the animals are spread throughout the house, whether they grouped together, or gathered all at the sides of the animal house.

> 'Internal conditions must be as comfortable for chickens as for men' (Italian farmer).

7.6 COMPLEXITY OF ANIMAL WELFARE

Farmers pointed out that animal welfare as such was a complex issue and a delicate balance of many factors. Improving one aspect could easily result in the deterioration of another.

> 'We can avoid foot pad dermatitis by limiting the water supply during the first week. But then chickens feel thirsty. It improves the parameter foot pad but has a negative effect on welfare as well. Welfare is complicated' (Dutch farmer).

In addition, nature still had a large impact even if broiler production was highly industrial. The weather, for instance, affected humidity and, hence, the quality of the litter.

7.7 CONCLUSIONS

The vast majority of farmers considered animal welfare primarily in terms of health and productivity. Natural behaviour and well-being were important as precondition for health and growth. Farmers took pride in achieving good technical results, which was defined in terms of production optimization and cost reduction.

Farmers described broiler production as a complex production system in which the broiler farm was only one location and the farmer only one actor of many. But also the production on this one farm was complex. The equipment was often technologically advanced but observation, expertise and experience were still considered important by farmers. As the margins were small and the birds delicate, it was important for farmers to closely watch the animals, their health and their well-being. If anything was wrong, they had to be able to act in time. Farmers did not see the need for additional external control; if there were problems that they overlooked, the slaughterhouse would tell them and they would take it into account in the next round. In their opinion, this was sufficient for assuring animal welfare.

8

FARMERS' COMMENTS ON ASSESSMENT PARAMETERS

Most farmers had difficulty discussing animal welfare as such and in theory.[2] It became more interesting to the farmers themselves once we discussed the parameters that were included in the monitoring tool. We asked the farmers which parameters they considered relevant.

8.1 PANTING/HUDDLING OF BIRDS

Almost all farmers in all three countries considered panting as an important indicator, as it revealed heat stress due to insufficient ventilation and too high temperature and humidity inside the house or, in the worse cases, respiratory disorders. Besides suffering, panting chickens used too much water, did not eat regularly, and moistened the litter. Measuring panting and huddling informed them about the climate conditions in the animal house, which were finally regulated by computer.

Most farmers saw huddling of birds as a signal of thermal stress or sanitary problems that could be due to low temperature inside the barn, symptoms of a disease, and/or bad conditions of the litter. When chickens huddled, the growth of the flock decreased because weaker chickens encountered difficulties in feeding regularly.

Some farmers underlined that it was important to check why animals huddled or panted as it did not always indicate a real problem. Huddling, for instance, was not considered as particularly worrying if displayed by adult chickens. Out of context, this parameters was not necessarily indicating bad welfare. For instance, when external temperature and humidity were high it was considered normal for chickens to pant. It could also be a temporary phenomenon, limited to the hotter hours of the summer days. Respiratory disorder might also be due to a congenital problem, already present at birth. It did not necessarily reveal bad conditions in the house.

[2] See Questionaire Part III.

8.2 BEHAVIOURAL CHARACTERISTICS

Many Italian and Dutch farmers considered behavioural characteristics mainly as indicators of animal health: most of the farmers paid particular attention to chickens displaying laziness, listlessness, difficulties in moving and lack of reactions to external stimuli.

> 'The eyes must be open and watchful' (Italian farmer).

> If they flutters and challenge each other, it means that they are able to express their normal behaviour' (Italian farmer).

But behaviour also depended on genetics, the age of the chickens and feed intake, as well as the management of the farmer, his/her behaviour in the shed and the light intensity in the house.

> 'Some genetic groups are more lively and reactive than others, showing completely different behaviour' (Italian farmer).

> 'Many factors influence behaviour. If it is warm, there will be less activity in the stable. Humidity influences the activity as well, but also the age of the chickens… With 42 days they are heavy and activity is very low. If they are just one week old, they run everywhere. If I want the chickens to be active I simply increase the intensity of the light' (Dutch farmer).

> 'I would not read too much into the welfare side of things, it could be the way farmers walk through the shed that scares them (the same doing the test). Some do it quickly, some slowly' (UK farmer).

Some farmers considered only very extreme forms of behaviour as relevant indicators for welfare, although it was difficult to define that as well. When walking through their sheds, it could occur that something spooked one chicken for no apparent reason and set the whole flock off running around in a frenzy. One farmer suggested that the first time you saw this type of behaviour you might be worried, but that you just accepted it after a while. Various examples were given as to why birds reacted strangely for no apparent reason, the primary causes being an unusual routine. Some farmers argued that high levels of activity were actually a good sign of health in free range birds, and nothing to be concerned about:

> 'The more active they are, the healthier they are, especially on ours anyway. The more active they are the better they'll range, and this is what we're after' (UK farmer).

Some farmers were concerned about measuring emotions like boredom, and also of the way in which the emotions were measured:

> 'Some of the things they were looking for sounded absolutely bizarre! How can you tell if a chick looks bored, interested, or whatever? And then they have to give a score for a flock as a whole, so even if there are differences in the flock… everything ends up being a middle score' (UK farmer).

Most UK (free-range) farmers thought that it was a good thing to enhance the environment and provide the birds with entertainment. Some considered it slightly irrelevant on free-range systems where birds could go outside and seek their own entertainment.

8.3 DIFFERENT TESTS OF FEAR

All farmers considered it irrelevant and some even misleading to measure chickens' reactions to an unfamiliar person. In their view, it was normal and a sign of health if chickens sought to escape from the presence of unknown person. Only weaker and unhealthy chickens could were easily approachable in their opinion.

> 'Chickens must run away when you approach them' (Italian farmer).

In addition, it also depended on the particular of breed of chickens how they reacted to the presence of unfamiliar persons. Some farmers pointed even at the importance of the temperament of single animals, as it is for humans. According to some farmers it was difficult to measure fear in an objective way. Moreover, fear had little relevancy in the context of broiler production, i.e. the (cost) efficient production of meat.

> 'Not really relevant, because in general they only see so many people and can get uneasy about different things/people. It's a closed system and they even get wary of me if I've been away for a few days' (UK farmer).

Some farmers thought that the reaction to a novel object could be a relevant sign of welfare. In their view, chickens were curious by nature: being attracted by an unfamiliar object meant that they were able to display a natural behaviour.

> 'I observe how the animals behave. If I am repairing something, they climb on top of my tool box and I try to touch them. I do not do this often, but if you would stand in the animal house for 10 minutes, you would see many things' (Dutch farmer).

Other farmers, however, underlined that chickens were wary and slowly in acquainting themselves with an unknown object. Curiosity also depended on age in their view.

Generally speaking, fear in chickens was not seen as a good and objective indicator for welfare as many factors influenced the results of the tests, such as the age of the animals, the time elapsed since the last vaccination treatment, the feeding system, the chickens' breed but also the regular practice of individual farmers8

8.4 ABILITY TO WALK

Many farmers considered the ability to walk as a relevant parameter. A moving animal was a healthy animal. It had sufficient space and as a result sufficient feed, farmers explained. Lacking ability to walk affected both animal welfare and farm productivity. They grew more slowly and chances of breast burns were higher. Serious difficulties in walking could indicate too high a stocking rate, sanitary problems (like arthritis, inflammations, enteric diseases), feed quality deficiencies, bad litter conditions, and too fast a growth of body mass compared to the bone structure.

> 'It gives you all sorts of information, to be perfectly honest with you. It gives you bone structure, muscle structure information. Feeding information, the amount of exercise they've had in the past, all sorts of information' (UK farmer).

Most of the farmers argued that an animal with disability to walk would suffer even more when gaining weight. Others argued that chickens had to walk very little in order to reach water and feed. They considered the parameter as irrelevant for animal welfare, or at least not an appropriate parameter for intensive farming systems.

> 'We are talking about animals that live indoors for no more than 50 days and that develop in few time a great body mass. Should we expect a man of 120 kg to walk well?' (Italian farmer).

> 'The ability to walk is not a parameter that affects the quality of their life, because they are not born to walk for long distance and they are not stimulated to do that as they would be in extensive farms' (Italian farmer).

Others pointed out that it also depends on the situation and the timing of the measurement whether or not not walking is a bad sign. Thus, it also depended on how and when the ability to walk was measured. A 'lazy' chicken, for instance, was not necessarily a sign of bad welfare at the end of the finishing period.

> 'It relates very much to animal welfare. But as it can be influenced, for example, by feeding, it is difficult to measure objectively: feeding continuously results in lazy chickens whereas a feeding schedule results in chickens walking more rapidly. Also if you increase the intensity of the light the chickens will run more rapidly. If the

> chickens have an inflammation of the joints, or bad hips, this has a negative impact on welfare' (Dutch farmer).

Some UK farmers argued that leg problems were not really a major problem on free-range systems and breeds:

> 'It would for standard birds, but for free range it wouldn't make no difference because the breed of bird we've got, we've got the Hubbard we do not get leg problems. And it's a strong bird. When we had the Ross and Cob before the Hubbard came in, I would say yes it would be a good thing. But for the slow-growing Hubbard bird, legs are not a problem' (UK farmer).

Again, we also see that many farmers evaluated the appropriateness of the measurement of a certain symptom not against the significance of the symptom as such but in the light of their ability to control the occurrence of certain symptom and, hence, their moral responsibility. If something was out of their control and they were not to be considered responsible for it, the symptom and its measurement was not appropriate for monitoring animal welfare.

> 'It does not necessarily reflect the real situation at the moment of the assessment. It may be due to something happened in the past, out of the possibilities of farmers' control or that he could not prevent' (Italian farmer).

8.5 FOOT PAD DERMATITIS, HOCK BURN, BREAST BURN AND PATHOLOGY

The vast majority of farmers considered it relevant for welfare to check the presence of foot pad dermatitis, hock burn and breast burn. For some farmers, the occurrence of such problems was undoubtedly a good indication of welfare; others were less sure of their exact relevance taken individually.

> 'There does not seem to be any rhyme or reason to why you get high hock burns or foot pad marks. You can have terrible litter and get good results. Most people would look at a wet litter and think 'oh that's [crop] going to be terrible', but it's not always the case' (UK farmer).

While farmers recognized that it was commonly accepted to attribute such problems to poor litter, there was a feeling that these problems could just as easily be the result of the reactions of particular breeds or of poor quality feed. As another farmer suggested:

> 'It's an indication of something, people blame the litter but it's often more to do with breed and feed. If you change the feed you might change the acidity' (UK farmer).

> 'It is certainly informative. If you are able to keep the shed dry, you won't have this problem so easily. They will become lame less quickly, and have less hock burns. The foot pad is a more complicated issue. This also can originate in the first week without you recognizing it. You would not see it happening. Nevertheless, with the information you can take action' (Dutch farmer).

> 'Hock burn is a clearer indicator: they reveal the actual condition of the environment because that part of the leg is more resistant to high acidity levels of the litter' (Italian farmer).

Also climate was stressed as an important factor and it was clear that the forces of nature had a real impact on farming practice on a daily basis. While hot air could help to keep litter dry in the summer, it was pointed out that cold air often kept litter damp in the winter. As a farmer noted:

> 'This is something you have to keep your eye on because the causes are not that clear… Free-range birds run around in all types of weather, in mud or sun, some flocks have hock burns in some conditions, some don't, so its not clear' (UK farmer).

Some farmers raised the question whether or not animals suffered from it, whereas others were convinced that it caused suffering and bad welfare. Farmers also pointed at the problem that improving this parameter would negatively affect other parameters. Some considered this parameter as a good instrument to control animal welfare; others found its use exaggerated. They explained that hard skin was often confused with wounds. Anyhow, the damages had a direct economic impact on farms' revenue since they might involve penalisations on the sale price.

8.6 LITTER SCORE

The relevance of litter state for measuring animal welfare was recognized by all interviewed farmers because it affected many other parameters, such as the ability to walk and to move, the development of foot pad dermatitis, hock burn and breast burn, the comfort of the resting area, healthiness of the environment and quality of the air in terms of ammonia concentration and humidity, and the development of pathologies. Farmers liked to have dry houses as it was also more comfortable for them to work in a dry house:

> 'They can forage and behave like chickens. If the litter is sticky, they cannot do that. The chicken will not be able to search, as it likes. All farmers like to have dry animal houses, also because it is more comfortable to work in. If I step with my slippery boots over a feeding pipe with a bucket of death chickens I don't like to fall. It also smells less' (Dutch farmer).

So litter quality was important but in the eyes of many farmers they did not need others to tell them. Moreover, measurement results always came too late to change anything for this flock. Some farmers proposed to measure this parameter during all the breeding period long, others thought measuring at the last day would indicate if the chickens had good conditions or not.

Many farmers pointed out that litter quality was important but a very complex issue. The assessment was useful when assessors could also establish the cause and distinguish between occasional/incidental factors or structural reasons.

> 'Litter condition may change within a few hours. You can find a very bad litter now, but this does not mean it was bad even before' (Italian farmer).

> 'It should not be too dry, but dry enough to have no burning spots. A lot can be read from the manure as well on how your chickens behave. If all is dry but the other day wet, something has been wrong with the feed–water balance. To have all this balanced is also important for the wallet' (Dutch farmer).

UK farmers pointed out that litter in free-range sheds was much more dependent on climate than in conventional sheds, primarily because these sheds had pop holes open and air coming through at all times of the year. For some, bad litter was thus not necessarily seen to be 'an indication of bad management'. The relevance of the measure was also seen to be dependent on whether the litter was tested is for dryness, acidity or alkalinity, and on the quality of feed and bedding materials being used. Again it was not clear that the measure was useful taken on its own and there was a feeling that it would be more useful when used alongside other measures. As one farmer stressed:

> 'All these things are linked, so litter's going to be critical in how much foot pad stuff, all these things, how it fits in with everything else' (UK farmer).

8.7 ASPECTS OF THE HOUSE

Farmers said that they checked the house daily as it directly related to the optimization of the farm production: the intensity of the light, the heating, and the provision of drinking water. Also in the UK free-range systems the underlying current was that you needed to

have all the aspects of housing correct if your birds were going to perform effectively, and that this was a useful measure. In case aspects of the house were changed, this affected the behaviour and the growth of chickens.

> 'You don't want to compromise them being able to eat and drink when they want to eat and drink, because if you compromise their eating and drinking it's not in our interests… because they're not going to grow to their optimum ability' (UK farmer).

> 'I have six drinking lines per house. In order to encourage the chickens to walk, I give only four lines, in the first period. I have to keep the chickens healthy. I also change the ones I take up. This is part of growing chickens. I need strong legs; the cocks can weight 3.5 kg' (Dutch farmer).

All farmers used the housing data for optimizing the production but they differed in what they measured. Not all of them checked the concentration of dust and ammonia. Some measured CO_2 and the temperature of the floor. These data allowed them to check what happened, for example, six rounds ago. Most data were used to manage the actual situation in the houses, to make sure that animals were healthy and growing while keeping a close eye on the expenses.

Discussing the aspects of the house implied also discussing the delicate balance between costs and benefits. To control the humidity was most difficult, as humidity could only be controlled by heating the house, which was very costly. Sometimes higher values of ammonia, for example, needed to be accepted in case improvement cost too much.

> 'You can adjust, it can be improved. During the winter you have more ammonia. This is a result of keeping the ventilation flaps closed in order to limit the need of heating. If we were paid better we could open them more often' (Dutch farmer).

8.8 MORTALITY

Farmers tried to avoid mortality. According to some farmers, a low mortality rate indicated good management and good health; others doubted the relevance of mortality as objective indicator of animal welfare.

> 'In the first two weeks, the mortality can be either really good or bad and there doesn't seem to be a lot you can do about it. After that if your mortality creeps up, then that's an indication and you need to do something before it gets too high' (UK farmer).

Some factors increased mortality without indicating bad welfare of lack of care. Such factors were, among others, bad quality of the chicks and outbreak of diseases that were not linked to housing conditions. Following the farmers, high mortality as such did not proof lack of animal welfare, and without specifying the cause it would not provide relevant information. In the farmers' view, it depended on when mortality occurred (in the first or last weeks), and whether it was incidentally or structurally high.

> 'If the chicks are weak or have some problems from birth, it is impossible to avoid high mortality' (Italian farmer).

> 'Pathologies may occur even in presence of good farmer's management and good general conditions of the environment where animals live' (Italian farmer).

A high mortality rate in the first week caused by the delivery of bad material by the breeding company forced the farmer to take the weak animals out in order to protect the rest of the flock. This was good management but resulted in high mortality rates. At the end of the round, animals often died from overheating, diseases or because they grew too fast. This was a sign of bad animal welfare and unwise treatment by the farmer.

> 'This is a point for discussion. It depends on the material provided. It also differs from season to season. It is telling something though. If you have a high mortality rate, you have very bad chickens. The health is not good. But the way in which they die is more important than how many die. It is all about how they lay down. When you have many animals that grew to death, and lay down backwards, you can adapt something in your management. In that case you, the farmer, are responsible. If they are sick there is not much you can do' (Dutch farmer).

All farmers kept mortality data in their administration and were able supply these data. Information on mortality was considered as self-evidently relevant to Dutch, Italian and British farmers as dead animals brought no money.

8.9 CONCLUSIONS

Across countries, farmers appointed similar parameters as the most relevant parameters for animal welfare. Among them were foot pad dermatitis, hock burn, breast burn and pathology¸ litter score, and housing. In all three countries, fearfulness was seen as the least relevant parameter. There was more difference of opinion on the relevance and usefulness of individual measurements.

Many farmers worried about the reliability and validity of the results: the representativeness of the sample, the subjectivity of the assessment and evaluation, the

frequency of assessments, and the integration of factors such as climate and management and timing of the assessment.

They also underlined time and again the interrelation between many of the parameters and measurements. For improvement, it was necessary to take this interrelation into account. Improvement of just one of the parameters could easily result in the deterioration of another, and consequently harm welfare. In order to grasp the complexity of the production, farmers thought that the different parameters should be measured at the same time and judged in combination.

Broiler farmers monitored the production process continuously, by way of direct observation of animals and by way of various technical equipments. Hence, monitoring animal welfare was not strange to them. Farmers evaluated the monitoring tool by assessing the practical relevance of measurements and their potential role in production management. For them, it made sense to assess those principles and criteria that affected production and that could be manipulated by a farmer. Most of the farmers did not see the use of measuring something that was out of their control or that had no impact on health or growth and, hence, production.

Often farmers had difficulty to recognize the usefulness of measurements done by outsiders. Outsiders were unable to see the 'full picture' of the farm and how welfare was built up by many different interrelated factors. All had to be seen in the context of the specific farm, at that specific moment, and given this specific flock. They also underlined that the assessors' findings did not supply new information as farmers walked daily through the flock and therefore knew for sure if animals were able to walk or not.

9

FARMERS' EXPERIENCES OF THE ON-FARM ASSESSMENT

One goal of the study was to learn from farmers how they experienced the assessment and to check if the practical implementation of the monitoring tool on the farm could be improved. We asked farmers how they perceived the timing of the assessment, the behaviour of the assessor, the disturbance caused by the assessment and the usefulness of the results. Besides, we wanted to know how they thought about the implementation of the monitoring tool.

9.1 ASPECTS, PROCESS / TIME FRAME, ASSESSOR[3]

All farmers received information before the actual assessment. Most but not all farmers had read the information. Several farmers had taken the decision to join on the basis of the information provided by telephone. Some commented that the information had not been clear.

In the Netherlands, the decision to join the research was not only based on the information on Welfare Quality®. Many Dutch farmers decided to join the project because they wanted to respond to the growing social concern on animal welfare and critique towards intensive husbandry. Besides, they worried about the objectives of the WQ Assessment Tool and its potential impact on legislation. Participating in the research was a way to regain some control. Some farmers explained that they planned their participation in a strategic way by offering a specific bird house as sample. Some offered a particular good house in order to get good results and contribute to a good image of the sector. Others offered the worst house to lower the results and in this way delimit expectations and future norms.

The Italian farms were selected by CRPA in collaboration with the Responsible of the Quality Insurance of the Slaughterhouse. The farmers had been contacted by phone and asked if they were willing to participate in the project. At each farm, only one (and the

[3] See Questionnaire Parts III, IV and V.

same) house was visited in pre- and post assessment and measurements were carried out for the birds inside the house and later at the slaughter plant.

In the UK, it was difficult to recruit farmers because the production company had changed owners and all agreements had to be renewed. UK farmers were asked by the production company to join. We have no information about the motivation of Italian farmers to participate. In the Italian interviews, the experience of the assessment itself was not discussed in detail, therefore it is mainly the Dutch and British experience on which we report in more detail.

9.2 THE ASSESSMENT

9.2.1 Assessment on the Farm

The on-farm assessment took place during the last week of the fattening process, in order to minimize the effect of potential disturbance, also in agreement with farmers. In general, the farmers spoke positively about how the assessors had carried out the work. There were some comments on the long duration of the assessment or some minor disturbance. But most of the farmers were satisfied.

> 'The most beneficial part of the day was just talking to them about it all, what they thought of it… their opinion… that's useful' (UK farmer).

> 'We have the door open, researchers carry out their work. We don't have to keep an eye on them. We have nothing to hide… It was at the very end of the round, the day before the chickens went to the slaughterhouse if I remember well. At that moment, the chickens can't get ill anymore. The risk is not very high. Hygienically, it should all be well organized. She had her own equipment, disinfected them, and again when she left. It has been fine for me' (Dutch farmer).

In all three countries, only few farmers joined the assessors in the house. Some of the farmers who witnessed the assessment, complained about particular measurements. Some Dutch farmers disliked especially the tests on fear – not because they had affected production negatively, but because they doubted the correct and objective interpretation of the results.

> 'I did not like some of the methods – for instance, to test if a chicken is curious and nervous and then to deduce fearfulness. Is it fear, I wonder? I did like the test on foot pad dermatitis, yes' (Dutch farmer).

Farmers pointed also again at the contextuality of measurements and the need to know the practice in order to design sensible tests. In addition, the assessor needed to take the particularities of each farm into account in order to interpret measurements correctly.

But in general, the Dutch, Italian and UK farmers were satisfied with the assessment, including the pre-assessment information, the way the tests were carried out, and the behaviour of the researcher. It is important, however, to take into account that the farmers experienced the on-farm assessment as part of scientific research and, hence, something extraordinary. It made sense and was not disturbing when looked upon as scientific research. They never looked at it as something that could be regular practice. All farmers considered it unrealistic to organize such assessment as part of regular broiler production practice. They understood the need for carrying out such an in-depth research and were happy to oblige. But they would certainly not like to be visited more frequently. They also doubted that such tests were promising for future applications.

9.2.2 Financial Incentives for Participation in Assessments

We asked farmers if good assessment results should be financially rewarded and if this would be an incentive to participate. Farmers had different opinions on this issue. Most of the farmers pointed out that their participation in the research had not been influenced by the financial compensation offered. They decided on the basis of their professional interest in animal welfare research and regulation. In addition, the on-farm assessment did not require much of their time. In Italy, the possibility of a financial incentive for joining the assessment was not discussed.

> 'It did not cost me extra work to participate in this project. It is always nice if you are rewarded financially. But I find it important to improve animal welfare without financial impact. The point is that consumers won't pay for animal welfare' (Dutch farmer).

> 'Not necessarily, if we get some useful feedback I don't mind giving up some time' (UK farmer).

> 'It would be silly to say no, because it is taking up our time, we have to do so many things' (UK farmer).

When it comes to regular assessment the situation might be different. But payment seems not to be of crucial importance. Farmers worried much more about having yet another control and about the negative impact that scores could have on their financial results.

9.3 ADVICE[4]

Half of the assessed farms received not only the results of their own and other farms, but also personal feedback on their results. For several reason, this did not work out as well as we had intended. First of all, it took much more time than anticipated to calculate all the results and to feed them back to the farmers. In addition, it proved to be impossible to give real advice without having good knowledge of the particular farms. We therefore decided to phone the farmers in order to personally discuss the findings with an animal scientist who could give some advice on where to find more information. In the UK, the advice was not prescriptive, and it was framed more as a way of generating advice by comparing scores with other Freedom Food farms.

All farmers appreciated the personal attention that was given by calling them back in person. But they did not consider it particularly useful as advice. Most farmers said that they were familiar with the conditions that would guarantee or improve animal welfare. The suggestions of the researchers did not add anything to what they already knew. They also pointed out that some problems occurred for reasons that they did not have under control; again, they referred, among others, to the characteristics of the chicks and quality of the feed, but also at financial constraints – some improvement would be to costly. Some of the farmers said that the animal scientist just lacked the knowledge of their particular farm in order to explain the causes of the diagnosed problems. They also disliked that they spoke to another person than the one who had assessed the farm.

> 'I would say the talk did not bring anything for me. If I had been able to discuss with the researcher who had carried out the tests, I would have benefited more. Together we had managed perhaps to better understand the background of the findings' (Dutch farmer).

9.4 WIDER IMPLEMENTATION OF THE ASSESSMENT TOOL[5]

We also discussed with the farmers how they perceived the implementation of such an animal-welfare monitoring tool more generally, and if they thought it would make sense to inform consumers about the animal welfare by way of farm scores.

[4] See Questionnaire Part VII.
[5] See Questionnaire Part VIII.

9.4.1 Monitoring Animal Welfare

Most Dutch and Italian farmers thought that an integrated score on animal welfare (including welfare at slaughter and during transport) would be a good idea. The Italian farmers considered an integrated score as a good tool for assessing compliance to animal-welfare standards for a particular flock but not a farm. Others disagreed. In their view, they were responsible for the faults of others if an integrated score would be calculated.

> 'Once the catchers come, that's outside our control; we often make suggestions, but they aren't always taken on board' (UK farmer).

> 'Which conclusion should we draw from such a comparison: is it me not being capable to assure animal welfare in my farm? Or is the result due to other factors that do not depend on my management?' (Italian farmer).

Many farmers liked the idea of exchanging opinions and technical information with experts; they liked to learn more about animal-welfare management on the farm and saw advantages of being evaluated by external and independent parties/assessors. They also wanted to obtain confirmation that their practice was okay, and looked forward to receiving suggestions and stimuli for improving the farm management.

Many farmers were also interested to see how they score in comparison to others. They wanted to know the scores for every parameter and criteria in order to improve their production in terms of animal welfare but also economically.

> 'I want to know how I perform in comparison to others. I try to do it better than the others. If you want to earn money, you have to belong to the top of the producers' (Dutch farmer).

> 'Yes, because I like to consider myself a good stockman, and if I make mistakes I want to put things right. I do my best' (UK farmer).

But farmers also opted for some in their view important changes in the monitoring tool.

- They wanted the scores to be completed with a more detailed analysis, explaining the causes of the results.
- They preferred a stepwise assessment – starting with some parameters and including others only when the first were well controlled and improved.
- They considered it not right to include scores for those factors that they could not control and that did not measure the animal friendliness of the farm. Again they referred to genetics and characteristics of the chicks.
- They wanted to be sure that the judgement would be fair and objective. Therefore, all the contextual factors that influenced the assessment and results needed to be taken in to account: the moment when the assessment is done, feeding system,

different characteristics of the house, previous sanitary problems that had been already solved at the moment of the assessment.

9.4.2 Labelling Animal Welfare

Most farmers considered animal welfare as a niche market, similar to organic production. But some farmers worried whether consumers were really interested in just animal welfare. They thought that consumers were interested in the origin of animals and in food safety, rather than the way animals were raised.

> 'We already produce a special product, making use of as little medicine as possible. I am of the opinion that we do already well regarding animal welfare' (Dutch farmer).

Many farmers pointed time an again at the need for financial compensation for extra quality in terms of animal welfare and they worried about consumers' willingness to pay more for animal-friendly products. The UK farmers expressed that some current assurance schemes – Freedom Food, for example – did not really tell the public much about what they were doing and that a scheme that did explain things more effectively would be invaluable. As free-range producers, most farmers thought that they were producing high-end welfare-friendly products already. As one farmer pointed out, 'We are all bloody doing it'. Another suggested that WQ was 'about extending this niche market further'. Others argued that such a label would be good if it explained more about the good things farmers do.

Most Italian farmers considered a label attractive for consumers. It would help to create a market segment for consumers interested in quality. They also considered certification as an innovative marketing approach for increasing sales. And finally, promotional actions aimed at giving consumers more information might encourage consumption and increase trust in poultry production, which in the past had been disrupted frequently by international food scandals and sanitary crises. A label could increase perception of intrinsic quality of the product too.

9.4.3 European Implementation

Most of the Dutch and UK farmers thought that the Assessment Scheme should be implemented Europe-wide in order to allow for fair competition. Many foresaw, however, problems for equal implementation and organization – for instance, because of different control schemes. Some also wondered if the same regulations should be applied when production conditions differed, among others, because of climatic differences. On a global

level, the problems were even bigger. Farmers felt unfairly treated through the import of products that were produced under lighter regulations and hence more cheaply.

> 'Oh God, definitely! In this country, we seem to be adhering to all these standards when our continental brethren aren't' (UK farmer).

Others expressed more sanguine views that 'it would be interesting' to see how such schemes would work, given the many variables that would have to be considered. Italian farmers did not provide specific data on the need or (dis)advantages of a European label.

9.5 CONCLUSIONS

In general the farmers spoke positively about how the assessors had carried out the work. There were some comments on the long duration of the assessment or some minor disturbance. But most of the farmers were satisfied.

It is important to take into account that the farmers experienced the on-farm assessment as part of scientific research. All farmers considered it unrealistic to organize such assessment as part of regular broiler production practice.

Payment seems not to be of crucial importance. Farmers worried much more about having yet another control and about the negative impact that scores could have on their financial results.

In general, farmers were interested in receiving the assessment results and wanted to know how they compared with other farmers, although there was also widespread disappointment that the advice was not more detailed and useful.

Many farmers liked to learn more about animal-welfare management on the farm and saw advantages of being externally evaluated and compared with others farms. But farmers also opted for some, in their view, important changes in the monitoring tool. In short, they wanted more information on the causes of low scores, more attention given to the interrelations between parameters and the judgement of animal welfare within the specific context of their farm at that particular moment in time. This should also include the acknowledgement that they did not have full control of all factors of animal welfare.

10

FARMERS' REACTIONS TO THE ASSESSMENT RESULTS

Many farmers received their results later than initially planned. For some of the farmers, it was therefore difficult to remember the precise circumstances of the assessment. In the Netherlands, this was especially true for those farmers who were also called by phone in order to discuss the results (group with advice). In these cases, the farmers often expressed not to remember the details of the assessment (tests and assessor) nor their results. In the UK, the individual results and advice were sent out when all the assessments had been completed. Then farmers had to be called again to discuss the results. This caused also considerable delay.

10.1 INTERPRETATION AND ACCEPTANCE OF THE RESULTS[6]

Overall the farmers were very interested in the results and especially in how they performed in comparison to others (the benchmarking). But many Dutch and British farmers were disappointed about their results – they had expected to do better, based on other assessments on related issues (e.g. from the slaughterhouse). Many farmers said that the slaughterhouse had never complained about their incidence of foot pad dermatitis.

Farmers had also difficulty accepting the results because they did not know how to interpret them, to understand the severity of problems or their causes and the ways to prevent them. The results were not plausible to them and the results alone were providing too little information to accept the implicit critique as relevant and significant. Farmers personally contacted by phone in order to discuss the results were more ready to accept the assessment results as relevant and useful in order to improve the production.

> 'At first you blame yourself. Second, you realize it is not like it is written: How should you perceive the report? How serious should you take it?… The report refers to your daily practice, to what you do but not always consciously. You see and feel

[6] See Questionnaire Parts III, VI and IX.

> what it is about, but expressed in numbers it hurts your feelings. You don't see your effort back in the report… According to the report, there is not one healthy chicken in the animal house. And that is not true. They judge whether the chickens approach you but not the use of medicines' (Dutch farmer).

In the UK, quite a few farmers were surprised by their results, some because they had done better than expected. Some indicated that they were sent snippets of information (on hock marks, etc.) from the slaughterhouse, but that they did not get this level of information from anyone else. Others felt that it was good to get a second opinion and to have confirmation of what they thought they were doing well anyway, while some claimed that the assessment provided a good reference point. Not many had considered changing their practice as a result of their results.

Most Italian farmers were not surprised by the results of the assessments. In their view, the situation depicted in the report corresponded well to their expectations about the flock assessed, also when the results were negative. Many Italian farmers did not agree on some parameters, especially foot pad dermatitis, mortality, cleanness of plumage, ability to walk and ammonia concentration. They disagreed with the low measurements or the interpretation of the results. Some farmers believed that the criteria (adopted for the assessment) were too severe, and more detailed explanations should accompany the judgement.

10.2 RELEVANCE OF THE RESULTS

Farmers explained time and again that they aimed at maximizing production volume in order to earn their living. They found the importance attached to animal welfare and the significance given to the assessment results exaggerated. They also pointed out that the results of the assessment did not add information nor provided specific suggestions on how to improve animal welfare on their farm: the assessment on the whole gave a picture of what they already knew about the flock assessed. Negative results of some parameters were told to be dependent on occasional causes that could not be prevented, and, excluding few cases, they were already expected. In order to be useful and relevant a lot more information needed to be added:

- more details on the 'history' of the flock: weight of the birds, provenance of the chicks, sanitary problems occurred in the past, type of the equipments, etc.;
- more information about the farm context: the timing of the assessment, genetic type and sex of birds, the type of the ventilation system, and the type of litter.

Repeatedly, farmers pointed out that others were at least partially responsible for animal welfare. Feed was mentioned most often, followed by the 'materials' delivered to the farm.

Some of them were aware that they could make up for these drawbacks but only against high costs, which they generally could not afford. Many of the farmers also indicated that they were unable to control the most determining factors influencing animal welfare on their farm. They were interested in the assessment of parameters that they could influence and use for optimizing their production system.

> 'You do not control everything. Feed quality, for example, you cannot control. Once it is delivered, you have to work with it until it is finished. And if the weather is wet, for a week, the animal houses will be wetter. You cannot dry humid air' (Dutch farmer).

10.3 RECOGNIZED WELFARE EXPERTISE

Most farmers had to think for quite a long time before they could indicate whose knowledge and expertise on animal welfare they valued most. In their view, outsiders had generally little understanding of what was going on on their farms. Generally, farmers relied on people who visited their farm on a regular basis, such as technicians of feed suppliers and veterinarians. They understood that they had vested interests but these people had at least a realistic idea of the farmer's way of life. In addition, they made use of information provided by professional magazines and by students who did their practical periods at the farm.

Farmers generally mistrusted civil servants, political activists, and 'society as a whole'. Although they valued their critique as keeping them 'sharp', they did not expect to learn much from them. Most farmers considered themselves the best experts of animal welfare but also valued the knowledge of scientists. In their view, it would be a good idea if farmers and scientists co-operated in the development of animal-welfare standards. Animal welfare should be driven by science and certainly not by politics.

10.4 CONCLUSIONS

Farmers were very interested in the results but often also surprised about the results. They had expected to do better or worse. The assessment results did not match their own evaluation or feedback from the slaughterhouse.

Many farmers considered the results useful but wished that the assessment had looked in more detail at the particularities of their farm and stock at that time in order to better understand which problems were incidental or structural in nature. It was easier for them to accept the results after personal feedback when they better understood the severity of problems and their causes.

Most farmers recognized especially the expertise of technicians of feed suppliers and veterinarians as they visited their farm on a regular basis and had inside knowledge.

11

DIFFERENCES BETWEEN FARMERS WITH THE BEST AND WORST WELFARE SCORES

In Part I, we reported on the assessment results and animal welfare scores. As a follow-up to the technical assessment, we planned to analyse the interrelation between welfare scores and farm characteristics such as farm size and management as well as the farmer's definition of and attitude towards animal welfare. In practice this proved to be complicated: the differences between farms and farmers were quite small and it was difficult to decide which welfare scores to use for the categorization of farms. We finally decided to use severe foot pad dermatitis, severe hock burn and gait (severe walking deficiency) as the basis of comparison and used the average scores during pre- and post assessment for the definition of best and worst performing farms. Moreover, we decided to compare two of the best scoring farms with two of the worst scoring farms. We did that in the Netherlands and in Italy and present the results below. This analysis has, however, to be regarded as an experiment that illustrates the possibility to better understand the background of good and bad welfare performance. The results should be interpreted with caution and considered as indicative findings.

11.1 NETHERLANDS

Dutch farms performed on average very similar. It was therefore difficult to select farms performing best or worst. Often farms performed bad for one parameter (e.g. foot pad dermatitis), but quite good for another one (e.g. hock burns, see Farm B for example). We selected farms based on their scores for foot pad lesions, hock burns and gaits; we argued that farms should score best or worst for at least two of these parameters. In Table 11.1, we present Farms A and B as worst scoring farms and Farms C and D as best scoring farms. There were farms having higher scores for e.g. severe foot pad lesions as compared to Farms A and B; however, these farms performed well or average for the other two parameters included and were therefore not classified as worst performing.

Table 11.2 Scores for severe foot pad dermatitis, severe hock burn and gait (severe walking deficiency) in pre- and post-assessment, and the average value, for farms performing best and worst (including farm details, Netherlands).

		Worst scoring farms		Best scoring farms	
		Farm A	Farm B	Farm C	Farm D
Foot pad dermatitis, % scores >2	Pre	86	96	13	20
	Post	58	60	37	34
	Average	72	78	25	27
Hock burns, % scores >3	Pre	34	11	5	1
	Post	11	11	13	35
	Average	22	11	9	18
Gait score, % birds scoring >2	Pre	23	61	14	9
	Post	48	65	7	21
	Average	35	63	10	15
Farmer's age		36	43	55	46
Farm size	Ha	50			30
	No. of chickens	160 000	160 000	400 000	32 500
Farm type		Broiler + dairy	Broiler	Broiler	Broiler + dairy
Technology				Under floor heating; climate control, new water and fodder lines	Old stables, postpones new rounds (7 weeks) bcause of licence
Animal welfare behaviour	Special attention for	Climate, litter	Climate, fodder	Climate, fodder, light intensity and duration	Dry litter, fodder, prevention of food pad lesions
AW defnition	Main criterion	Ability to walk	Health, ability to walk	Ability to walk	Health, ability to walk
Management objective		Max. growth	Max. growth	Max growth	Max growth
Reaction to results		Worse than expected	Worse than expected	Not surprised	Satisfied, not surprised
Explanation of results		Guilt of deliverant of bad 'material'	Guilt of deliverant of bad 'material'	As owner of a big farm ability to negotiate delivery of good 'material' (chicks, fodder)	Good fodder

We compared Farms A and B with Farms C and D for what regards farm size and type, farm management and farmer's attitude towards and definition of animal welfare. As Table 11.1 demonstrates, there are no clear-cut differences between the worst and best scoring farms. There are small and big, old and modern farms among all four of them. All of the farms aim at maximum production and want their chickens to grow as much and as quickly as possible. The best scoring farmers seem to be a bit more focused on the early detection of food pad lesions through close observation of the animals and early intervention through good fodder or extra litter and climate control. They also seem to be more aware than the other two farmers how important especially these animal welfare parameters are. There also is some difference in the recognition and acceptance of responsibility for welfare and intervention. Whereas the worst scoring farmers underline that an important cause of bad scores lies with the deliverer of bad chicks and bad food and is not their fault, the other two farmers express their ability and readiness to negotiate good material.

But as said before, these are possible explanations that need much more research to be confirmed. It is clear, however, that good welfare scores are not just a matter of farm size or farm technology. The farmer's interest and attention for animal welfare and readiness to quickly intervene when welfare is at stake are of utmost importance.

11.2 ITALY

Table 11.2 presents the mean values of food pad, hock and breast lesions for the nine Italian farms that received advice. Although no significant differences were found between pre- and post-assessed broilers' lesions, the trends of 'best' and 'worst' farms seemed to be different. In fact, Farms 6 and 7, which scored the worse for FPD in pre-assessment compared with the sample mean, had much better results in post-assessment, as the FPD scored considerably less. On the contrary, Farms 1 and 18, which scored best for FPD in pre-assessment resulted in worsening the birds' welfare in post-assessment.

Such trends may be caused by management as well as by external factors that the Italian broiler farmers participating in integrated chains are not able and allowed to control. This could be the quality and health of chicks (i.e. genetics, parents' age, vaccinations) and the quality of feed supplied by the Amadori Group.

Looking back at the interviews, we tried to find out if differences in opinion could explain good or bad lesions scores.

All four farmers perceived animal welfare in a similar way: the birds should be kept in good environmental conditions, with enough space and good litter. Following Farm 1 (best), Farm 6 (worst) and Farm 18 (best), special attention should be given to microclimate, efficient ventilation, litter quality, and hygiene; following Farm 7 (worst), it was most important to visit the flock houses 2–3 times per day in order to check for

TABLE 11.2 Scores of food pad dermatitis, hock burn and breast burn in pre- and post-assessment rounds.

Farm no.	Foot Pad Dermatitis			Hock Burn			Breast Burn		
	Pre	Post	Mean	Pre	Post	Mean	Pre	Post	Mean
1 best	0.35	0.51	0.43	0.07	0.42	0.25	0	3	1.5
5	1.74	1.58	1.66	0.10	0.75	0.43	1	2	1.5
6 worst	3.57	1.85	2.71	0.85	0.84	0.85	0	3	1.5
7 worst	3.34	1.34	2.34	2.73	0.67	1.70	47	4	25.5
11	2.06	2.27	2.17	0.56	0.32	0.44	2	3	2.5
14	2.35	2.10	2.23	0.43	0.75	0.59	1	8	4.5
16	1.93	1.88	1.91	0.74	0.29	0.52	0	9	4.5
17	1.85	1.35	1.60	0.52	0.64	0.58	1	0	0.5
18 best	0.64	1.69	1.17	0.93	1.00	0.97	0	2	1
Mean	1.98	1.62	1.80	0.77	0.63	0.70	5.78	3.78	4.78

optimal conditions. Animal welfare could be improved, Following Farm 7 (worst), by installing a more efficient ventilation system.

In the farmers' view, the most relevant measurements were litter quality (Farms 6, 7 and 18) and microclimate (Farm 1); as least relevant measurements Farm 18 mentioned mortality, because the health of chickens could not be checked or chosen by the farmer. Farms 1, 6, and 7 appointed the birds' reactivity to human approach as the least relevant welfare indicator.

All four farmers considered the birds' lesions as relevant for animal welfare even though Farm 7 (worst) underlined the importance of causes, such as enteric diseases and seasonal variations of the climate, which cannot be controlled.

In many occasions, the farmers reasserted that, as they are involved in an integrated food chain, they had to accept the chicks and the feed the contracted company provided them with no possibility of control. In their view, the health of chicks and the quality of feed were crucial factors for animal welfare. As they could not control them, they felt unable to improve the broilers' welfare without the help and the collaboration of the contracted company.

12

CONCLUSIONS TO PART II

12.1 DEFINITION OF ANIMAL WELFARE AND THE ACCEPTANCE OF THE WELFARE PARAMETERS AND CRITERIA

- Most farmers thought that animal welfare was about providing animals with the things they needed for a good life.
- Farmers recognized the need to carry out scientific assessments, but they also stressed the merits and importance of local knowledge and practice.
- Most farmers considered health as the most important aspect of welfare. For them, welfare was important as long as it influenced growth and productivity. Welfare aspects that had little influence on growth were generally considered as irrelevant.
- On average, farmers agreed with all the parameters and criteria included in the assessment and monitoring tool. The parameters related to health and/or growth mattered clearly more to them than others. The ability to walk, which the farmers related to behaviour, was generally considered of less relevance, and others such as behaviour, human-animal relation and fearfulness were not relevant to them at all.
- The different tests of fear were the least relevant measure for all farmers, primarily because it was difficult to pinpoint why birds reacted as they did, and also because it was seen to be good for active, free-range birds to be a little fearful of humans.
- Farmers recognized the value of most of the measures in the assessment in some way, but questioned how useful most of them were taken individually, preferring to view them as a holistic system that mirrored farming practice.
- In their view, many parameters were difficult to understand for outsiders. Inside knowledge of the context and the interrelation of many factors were important to judge animal welfare and to imagine possible and necessary improvements.
- When receiving the results, the farmers had often difficulty to understand the significance of parameters. A personal discussion with the scientists supported farmers' understanding and acceptance of the results. The explanation of the practical relevance of the findings played an important role in this.

12.2 THE EXPERIENCE OF THE ON-FARM ASSESSMENT

- In general, farmers were satisfied with the way the assessment took place their farms.
- The assessment had no untoward effects on the birds or on production.
- As only few farmers observed the full assessment, it did not cause any significant disturbance or loss of time. Still some farmers raised questions about the long duration of the assessment.
- Some farmers raised the possibility of personality clashes and subjective interpretations of measures as possible causes of problems during the assessment.
- Questions were raised about the time in the cycle the assessment took place.
- Most farmers perceived the assessment as a scientific experiment, which they were happy to support. They considered it unrealistic to implement such an assessment as a regular on farm check on animal welfare.
- They were also of the opinion that certain measurements, such as foot pad lesions, could better be done at the slaughterhouse.

12.3 VALIDITY OF THE RESULTS

- Many farmers worried about the quality of the assessment and the reliability and validity of the results. They then referred to the representativeness of the sample, the subjectivity of the assessment and evaluation, the frequency of assessments and integration of factors such as climate and management and timing of the assessment.
- In their view, something sensible about animal welfare could only be said when the parameters were looked upon in their interrelation (not separately). Time and again they also underlined that improving one parameter would easily result in the deterioration of another. The assessment had to consider the measures holistically.
- In addition, they pointed out that animal welfare had to be understood within the context of this particular farm at this particular moment in time. They had difficulty to understand how these interrelations were taken into account in the way the scores at different levels were calculated.
- It was also important for them to point out that they did not have full control of animal welfare as they were part of a network of production and depended on the delivery of good material by others. Assessing animal welfare on their farm implicated in their view that they were also blamed for the faults of others and had finally to pay the price for it.
- In the UK, farmers mentioned the influence of the weather on free-range systems and the difficulties of getting reliable results on different farms under different climatic conditions.

12.4 RELEVANCE OF THE RESULTS

- The farmers were interested in the results and their relative performance compared to others, because they wanted to do well. They evaluated the relevance of the results, however, mostly on the basis of their practical applicability and the information they offered for solving problems and improving production.
- They indicated that they did not get such detailed feedback from anyone else.
- Most farmers were disappointed that the results provided little explanation on the causality of low scores and their prevention in the future. The telephone conversations with animal scientists gave some more insight, but they still missed the practical advice.
- Farmers would have liked their feedback sooner. They were used to getting regular and continuous feedback by their own equipment as well as the slaughterhouse. Now the results came often four weeks after the assessment and, hence, towards the end of the following round and new flock.
- Overall, the farmers concluded that the WQ Assessment Tool was fine as a scientific tool but not very useful on a real farm. Most important for this evaluation was first of all the separation of singular measurements, which in the farmers' view resulted in overlooking the interrelation of all these factors. A second worry concerns the standardization of the instruments, which in their view denied the particularity of each farm and the importance of a time and place specific context of production; the latter included factors such as weather and feed quality, but also the management style of a specific farmer.

13

RECOMMENDATIONS: LESSONS TO BE LEARNED FOR WELFARE QUALITY

The welfare quality assessment tool aims at assessing animal welfare across farms, species, sectors and countries. In order to do so, it has to use a standardized approach. For farmers, this is difficult to accept as they perceive their farm as special and different to any other farm. They want to be understood within the context of their farm. They also want to be able to use the results within their farm. Many were not convinced that the assessment measures were valuable if used individually and out of context; to be more acceptable the results need to have more relevance to farmers' everyday practice.

For the acceptance among farmers it is therefore important:

1. to elucidate the practical applicability of the results and how farmers could use the results in order to improve animal welfare as well as production;
2. to explain how the tool incorporates the interrelation of different parameters and criteria when calculating scores;
3. to explain how the contextuality of animal welfare is taken into account during the measurements – this includes the possibility of a reassessment in case of exceptional conditions, such as bad weather;
4. to explain that assessing animal welfare at the farm does not implicate that only farmers are considered responsible and is not meant to blame farmers.

In the UK, farmers mentioned that climatic factors needed to be taken into account on free-range systems, as measurements taken during or in the aftermath of extreme weather conditions often influenced scores in ways that farmers have little control over. Remarkably, conventional farmers in the Netherlands and Italy argued similarly.

In addition, it is important, especially among farmers working in an agro-industrial sector such as broiler production, to provide more information about the importance and added value of animal welfare. Farmers saw the importance of health and many of them were aware of the importance of natural behaviour, but some other aspects were new and strange to them. Farmers underlined several times that they were ambitious to further develop their professional skills, organizing specific study groups on the linkages between animal welfare and production seems a promising way to support the acceptance and prepare the implementation of the WQ Assessment Scheme.

APPENDIX

A1 FREEDOM FOOD STANDARDS

Full Freedom Food standards for broilers can be found at <http://www.rspca.org.uk>.

The following are based on the 2008 guidelines:

Stocking Density Standards

Stocking density, which is to be calculated using the floor space available to the birds, must never:

1. exceed 30kg/m^2;
2. be likely to exceed 30kg/m^2 (applies to current flock);
3. exceed 19 birds/m^2.

Drinkers

Bell: 1 per 100 chickens
Nipple: 1 per 10 chickens
Cup: 1 per 28 chickens

Feeders

Where circular pan feeders are used, there must be a minimum of 1 x 330mm diameter pan feeder per 65 birds = 1.59 cm/bird.

A2 FARMER ASSESSMENT QUESTIONNAIRE AND OBSERVED BIOSECURITY MEASURES ON THE FARM AND IN THE HOUSE

TABLE A1 Farmer assessment questionnaire.

n	Question	FScoring scheme
1	Is an all in / all out strategy employed for all houses on the site?	0 = No 1 = Yes
2	After washing, was the house washed with a power wash and disinfected before this flock was placed?	0 = No 1 = Yes
3	Did you disinfect the feeder system before the birds are placed in the house and what with?	0 = No 1 = Yes
4	Did you disinfect the water system before the birds are placed in the house and what with?	0 = No 1 = Yes
5	Has there been any feather pecking or aggression between birds for this flock	0 No pecking or aggression 1 Some of pecking or aggression 2 Considerable pecking or aggression
6	How many caretakers work on farm?	Number of caretakers Number ratio (number of animals on farm/number of caretakers)
7	How much time do you spend each day for observation of birds?	Total time (minutes): Time per 1,000 birds (minutes):
8	Constancy – how many different people care for the poultry in this house?	Number (of caretakers):
9	Do you like to have contact with the poultry?	0= No – Do not like to have contact 1 = Yes and No – depends upon the reason for the contact 2= Yes – Like to have contact
10	Are the catching gangs paid hourly rates or piece work rates?	0 = Salary = Paid hourly 1 = Piece rate = Paid for each flock, house or job 2 = 'I don't know'
11	What is your favourite task n the farm and why?	
12	Do you talk to the birds (1=never; 7=always)	
13	Do you knock before you enter the poultry house (1=never; 7=always)	
14	Have the staff that depopulate the house had training in the care of birds and prevention of injuries during loading and transport?	0= No training 1= Some training 2= Formal training 3= Not applicable, catching machine used
15	How many flock walks are made daily?	N=
16	How many spot checks in addition to flock walks do you make?	N=
17	Do you turn the lights up or down when you make the flock walk?	No = Light remain unchanged during flock inspection Yes = Lighting level altered during the inspection
18	How many spot checks of the flock in addition to flock walks are made daily?	N= Number of checks in addition to flock walks
19	Is there an electricity failure alarm system that on electricity supply that powers ventilation and water systems?	0 = No electricity failure alarm system 1 Yes
20	Is it tested regularly?	0 = No 1 = Yes
21	Are there records of electrical failure alarm system testing and can I see them?	0 = No records 1 = records available but not completed in the last 6 weeks 2 = records available and completed to more recently than 6 weeks ago
22	Is there a fire alarm system?	0 = No fire alarm 1 = Yes

TABLE A1 Farmer assessment questionnaire (cont.).

n	Question	FScoring scheme
23	Is it tested regularly?	0 = No 1 = Yes
24	Is it tested regularly?	0 = No 1 = Yes
25	Are there records of electricity system back up generator and can I see them?	0 = No records 1 = records available but not completed in the last 6 weeks 2 = records available and completed to more recently than 6 weeks ago
26	Is there a high temperature alarm system?	0 = No high temperature alarm system 1 = Yes
27	Is it tested regularly?	0 = No 1 = Yes
28	Are there records of high temperature alarm system testing and can I see them?	0 = No records 1 = records available but not completed in the last 6 weeks 2 = records available and completed to more recently than 6 weeks ago
29	Is it tested regularly?	0 = No 1 = Yes
30	Is there a low water pressure alarm system?	0 = No low water pressure alarm system 1 Yes
31	Is it tested regularly?	0 = No 1 = Yes
32	Are there records low water pressure alarm system testing and can I see them?	0 = No records 1 = records available but not completed in the last 6 weeks 2 = records available and completed to more recently than 6 weeks ago
33	Are written instructions in place for managing spillage of feed and water?	0 = No 1= Yes
34	Do you have a routine for maintenance of equipment?	0= No 1= Yes 2 = Yes and written policy
35	What diseases is this flock vaccinated against at the hatchery & farm?	
36	Do you have the following records and may I see them: Medicine records, containing medicines used, date treatment started and finished, dose used, expiry date and withdrawal period Vaccination protocols Veterinary reports and diagnoses, post Mortem results, bacteriology results Training schedules what type of training? Records of staff training Cleaning and disinfection protocols Data sheets for disinfection and cleaning products Bait plan Bait replenishment and rodent activity records Data sheets for bait products Quality of the water testing records Waste disposal records Staff medical records Emergency procedure protocols in case of fire? House temperature records Mortality and culling records Chick transport sheets Feed ingredient sheets Feed delivery records Equipment maintenance records Total number	

TABLE A1 Farmer assessment questionnaire (cont.).

n	Question	FScoring scheme
37	Do you use any environmental enrichment?	
	Bales	0=No 1= Yes
	Perches	0=No 1= Yes
	Toys	0=No 1= Yes
	Presence of misting systems in the house	0 = No 1= Yes
	Presence of grain scattered in litter	0 = No 1= Yes
	Access to range	0 = No 1= Yes
38	Are any computerised/ time clock systems used to control lighting?	0 = No automated lighting system 1= Fully automated lighting system
	Light patterns at day 21	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
	Have you changed light intensity for my visit?	0 = No 1 = Yes
39	Has this flock been thinned?	0 = no 1 = Yes
40	If this flock has been thinned, how old were the birds?	Age (in days)
41	Has this flock been subject to a feed restriction programme?	0 = no 1 = Yes
42	Has any additional litter material been put in this house during this flock cycle?	0 = No 1 = Yes
43	Please could I have the weights of these birds and the age at which they were weighed	Age Weight
44	Is the floor completely recovered by litter in the house?	0 = no 1 = yes
45	What is the litter material type in the house?	1 = entire straw 2 = chopped straw 3 = wood shavings 4 = mixture of wood shaving and straw 5 = paper 6 = hemp 7 = rice husks 8 = peat 9 = earth 10 = others
46	What method of euthanasia do you use for the birds?	1= neck wringing 2= percussion stunner 3 = other
47	How long is food withheld from birds before they are captured for slaughter (hours)	
48	How long is water withheld from birds before they are captured for slaughter (hours)	

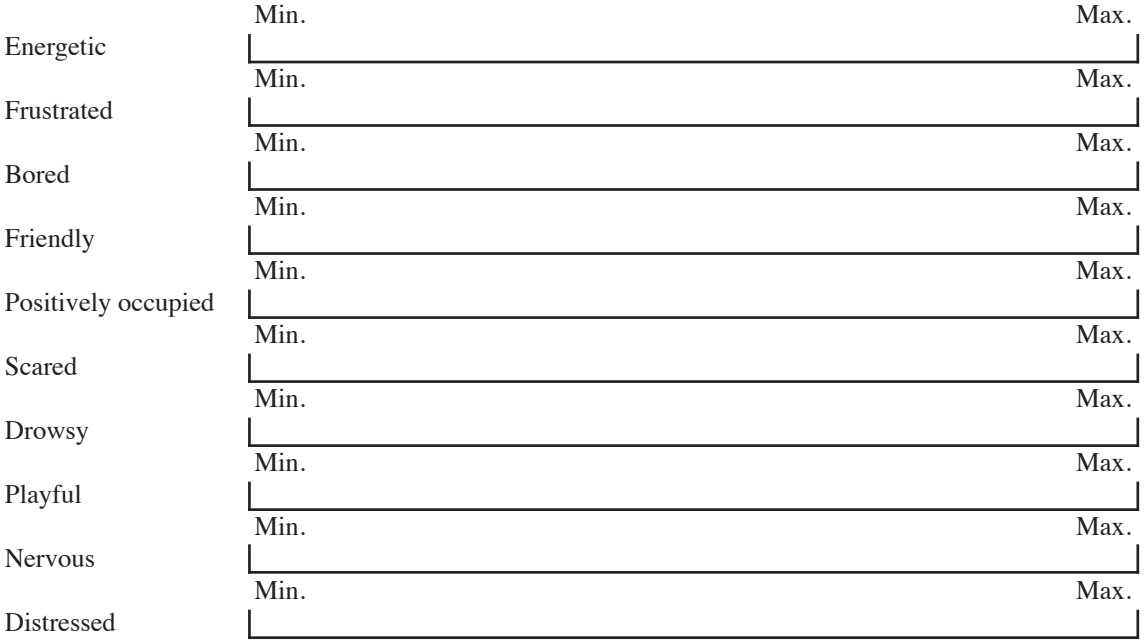
TABLE A2 Observed biosecurity measures on the farm and in the house.

Presence of		Answer	Is it used	Answer
Visitors' book	0=No		0=No	
	1= Yes		1= Yes	
Visitors' boots	0=No		0=No	
	1= Yes		1= Yes	
Visitors' overalls	0=No		0=No	
	1= Yes		1= Yes	
Wheel wash?	0= No		0= No	
	1= Yes		1= Yes	
Car wash?	0= No		0= No	
	1= Yes		1= Yes	
Hand wash?	0= No		0= No	
	1= Yes		1= Yes	
Foot dips?	0= No		0= No	
	1= Yes		1= Yes	
Sanitary area before the entrance of the house?	0= No		0= No	
	1= Yes		1= Yes	
Two different zones (dirty / clean) in the sanitary area (barrier system)?	0= No		0= No	
	1= Yes		1= Yes	

A3 QUALITATIVE BEHAVIOUR ASSESSMENT

Please observe the animals from near the house entrance and in the centre of the house for 10 minutes. Then assess their behavioural expression ('body language') by scoring the following terms:

	Min.	Max.
Active		
Relaxed		
Helpless		
Comfortable		
Fearful		
Agitated		
Confident		
Depressed		
Calm		
Content		
Tense		
Inquisitive		
Unsure		



A4 FARM AND RESPONDENT CHARACTERISTICS

TABLE A3 Netherlands

resp. nr.	group*	total nr. birds	stables	stocking density	farm type	age	gender	position at the farm	marital status	children
1	C	18 000	1	22	mixed	57	F	owner	married	4
2	C	188 000	9	20	specialised	41	M	manager	single	
3	C	48 000	3	23	specialised	36	M	owner	single	
4	C	160 000	4		specialised	36	M	owner	married	
5	C	60 000	2		mixed	46	M	owner	married	3
6	C	170 000	6	23.5	specialised	50	M	owner	married	4
7	C	50 000	2	23 24.5	mixed	36	M	owner	married	4
8	C	550 000	25	22	specialised	36	M	owner	married	?
9	C	175 000	7		specialised	38	M	owner	married	3
10	R	105 000	4		specialised	42	M	owner	cohabitating	
11	R	47 000	3	22	mixed	51	M	owner	married	4
12	R	158 000	5		mixed	36	M	owner	married	4
13	R	65 000	3	22	specialised	46	M	owner	single	
14	R	150 000	4	22.6	specialised	45	F	owner	widow	3
15	R	160 000	5	24	specialised	43	M	owner	married	3
16	R	35 000	2	18 19/20	mixed	47	M	owner	single	
17	R	70 000	3	22/24	specialised	51	M	owner	married	3
18	R	52 000	2		mixed	31	M	owner	single	
19	A	100 000	5	22 23	specialised	30	M	owner	married	
20	A	35 000	2	19/24	mixed	46	M	owner	married	4
21	A	70 000	2	24	mixed	31	M	owner	married	2
22	A	105 000	6	18	mixed	38	M	owner	married	3
23	A	200 000	7	23 24	specialised	38	M	owner	cohabitating	2
24	A	103 000	6	24	specialised	59	F	owner	married	2
25	A	110 000	5	21 22	mixed	54	M	owner	married	3
26	A	400 000	10		specialised	55	M	owner	married	2
27	A	100 000	4	24	specialised	42	M	owner	married	2

Note: * C= control group; R = assessed group plus individual advice; A = assessed group.

TABLE A4 United Kingdom.

	Age	Gender	Education	Family	Position	Farm Size (acres)	Labour Force	Economic Performance
1	59	M	NVQ4 in Agriculture	Husband and wife	Head of farm	309	2.5	5.5 crops of 11 500
2	40	M	High School	Married with 3 boys	Head of farm	130	1	5.5 crops of 34 500
3	61	M	High School	Husband and wife, kids left home	Head of farm	30	1	5.5 crops of 28 750
4	53	M	NVQ4 Animal Production/ Poultry	Married with 2 daughters	Head of farm	165	2	5.7 crops of 23 000
5	69	M	High School	Married with 3 boys, youngest works on the farm	Head of farm	182	2	5.5 crops of 45 000
6	50	M	NVQ4	Married with 3 daughters	Head of farm	469.5	2	5.5 crops of 46 000
7	47	M	Agricultural College + NVQ4	Married with 1 daughter	Head of farm	100	1.5	5.7 crops of 34 000
8	48	M	University degree in Science and Agriculture	Divorced with 3 children	Business partner (does not live on farm)	196	2	5.5 crops of 34 500
9 (c)*	56	M	Technical College – Apprenticeship in Agricultural Management	Married, kids left home	Head of farm	70	1	5.5 crops of 23 000
10 (c)*	65	M	Privately Educated	Married with 2 kids, 1 still at home	Head of farm	80	1.5	5.7 crops of 23 000
11 (c)*	51	M	Agricultural College – National Diploma in Agriculture	Married with 2 children still at home	Head of farm	70	1	5.5 crops of 23 000
12 (c)*	49	M	NVQ 3 Poultry Keeping	Married with 2 children	Head of farm	80	1	5.7 crops of 11 500

Note: c = control group.

TABLE A5 Italy

	Farm Data				Personal Data		
	Nr. of Places	Labour Force	Legal Status	Farm Integration with the Slaughterhouse	Position on the Farm	Age	Education
A	32 000	1	family farm	agistment	owner	30	intermed. school
A	32 000	1	farm company	fully integrated	worker (keeper)	55	intermed. school
A	114 000	2	farm company	agistment	owner	54	intermed. school
A	130 000	2	farm company	agistment	owner	60	intermed. school
A	189 000		farm company	agistment	owner	56	intermed. school
A	310 000	5	farm company	fully integrated	worker (keeper)	44	secondary school
A	368 000	3	farm company	agistment	owner	58	secondary school
A	500 000	4	farm company	fully integrated	worker (keeper)	44	intermed. school
A	520 000	2	ltd	fully integrated	worker (keeper)	45	intermed. school
AA	30 000	1	farm company	agistment	owner	40	intermed. school
AA	40 000	1	family farm	agistment	owner	50	primary school
AA	72 000	1	family farm	agistment	owner	45	intermed. school
AA	106 000	1	farm company	agistment	owner	42	intermed. school
AA	120 000	1	farm company	agistment	owner	42	scuola superiore

Note: A = assessed group; AA = assessed group plus individual advice.

TABLE A5 Italy (cont.)

Group	Farm Data				Personal Data		
	Nr. of Places	Labour Force	Legal Status	Farm Integration with the Slaughterhouse	Position on the Farm	Age	Education
AA	168 000	4	farm company	fully integrated	worker (keeper)	47	secondary school
AA	250 000	2	farm company	fully integrated	worker (keeper)	43	intermed. school
AA	300 000	3	farm company	fully integrated	worker (keeper)		
AA	401 000	4	farm company	fully integrated	worker (keeper)	50	intermed. school
C	22 000	1	farm company	agistment	owner	59	primary school
C	25 000	1	farm company	agistment	owner	39	secondary school
C	28 000	1	farm company	agistment	owner	64	university
C	35 000	1	farm company	agistment	owner	62	secondary school
C	55 000	1	farm company	agistment	owner	48	university
C	60 000	1	farm company	agistment	owner		
C	120 000	1	farm company	fully integrated	worker (keeper)	45	intermed. school
C	180 000	2	farm company	agistment	owner	43	intermed. school
C	520 000	4	farm company	fully integrated	worker (keeper)	55	primary school

Note: AA = assessed group plus individual advice; C = control group.

A5 SOCIOLOGICAL QUESTIONNAIRES

A5.1 QUESTIONNAIRE FOR ON-FARM ASSESSED FARMERS (TO BE DONE AFTER THE ASSESSMENT, WITHIN A WEEK AFTER HAVING SENT THE RESULTS AND/OR ADVICE BACK TO THE FARMER)

Respondent number:
Month, day and time:
Length of the interview:

Briefly explain to the respondent:
- *who you are and whom you represent, what will be done with the interview material*
- *how long the interview will take*
- *we do this research in three countries and how long it will take to analyze the results*

Part I: General data on the farmer and his or her farm

1. General data on the farmer and his/her farm.
- personal data
  - age ……
  - gender ……
  - education ……
  - family situation ……
  - position on the farm ……
- farm data
  - size ……
  - labour force ……

- juridical form……
- contracting / integrator ……
- economic performance ……

2. Can you briefly describe your barns to me? How many? What size? What systems?

3. Regarding changes in the production system:
- I changed things. If so, what? Why?
- I plan to change things. If so, what? Why?

Part II: human-animal relations: definition, measurement and care for animal welfare from producers' perspective

4. What is animal welfare in your view?

5. What is important in your view for taking 'good' care of the animals?

- Answer on the open question: ……
- How do you check the welfare of the animals? How do you see if the animals are doing well?
- How do you see that they are NOT doing well?

6. What can farmers do in order to assure the welfare of the animals?

7. How could you improve animal welfare on your farm?
- Answer on the open question: ……
- If mentioned something: are you going to do this?
- Yes, surely.
- No, I won't.
- No idea yet.
- If no / no idea yet, why not?

8. When it comes to animal welfare, whose knowledge and opinion you value most?

Part III: General information that was received on fore-hand

9. Did you read the information that we send you before-hand?
- yes
- no, because …… (⇒ continue with question 11)

10. Was the information clear and understandable?
- yes
- no, not really because ……

Now we would like to discuss some of the characteristics of the Welfare quality assessment tool with you. First of all the way animal welfare is assessed in this project.

As interviewer you present the following information:
- In the information sent to you we explain that WQ assesses the welfare of animals by doing measurements in the barn and at the living animal.
- Besides it gathers information about the transport and looks at the dead animals at the slaughterhouse.
- In order to do the measurements at the living animals, the assessors enter the bird house.
- In total the assessment in the barn takes about 5 hours.

And list that assessment in the barn consists of the following on farm-measurements:
A. the researchers measure the panting/huddling of birds
B. behavioural characteristics of the flock like activity, fear etc
C. different tests of fear
D. ability to walk
E. foot pad dermatitis, hock burn, breast burn and pathology
F. litter score
G. aspects of the house
H. mortality

For each of these on-farm measurements we would like to know if:
a) you think that the measurement tells something about the welfare of the birds; and
b) it is delivering relevant information to you as farmer.

A. The researchers measure the panting/huddling of birds: by estimating the number of birds performing this behaviour at different locations in the bird house

11. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

12. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

B. Behavioural characteristics of the flock like activity, fear etc.: by carefully observing the behaviour of the birds in the flock and giving the flock scores for each behavioural category on a continuous scale

13. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

14. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?

- No. If no, why not?

C. Different tests of fear (response to novel object and an unfamiliar person): by measuring the response of the birds to the researcher (the 'touch test') and the response of the birds to a novel object at different locations in the barn

15. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

16. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

D. Ability to walk: 25 birds are randomly selected at 10 locations in the house. Birds are stimulated to walk and the researcher scores if they have a normal or abnormal walking pattern

17. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

18. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

E. Foot pad dermatitis, hock burn, breast burn and pathology: the researcher randomly selects 10 birds at 10 locations in the house and inspects the birds

19. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

20. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

F. Litter score

21. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

22. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

G. Aspects of the house: like number of feeders, drinkers, light, ammonia, humidity, dust

23. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

24. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

H. Mortality: the number of birds culled (including those that were 'selected')

25. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

26. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

Summarizing:

27. Which of the discussed measurements is most relevant in your view? Mention one! Why this one?
28. Which of the discussed measurements is the least relevant in your view? Mention one! Why this one?

Part IV: Experiences with the on-farm implementation of the Assessment Scheme

Now we would like to know how you experienced the assessment on your farm.

29. Did the visit of the assessor disturb your daily work? If yes, in which sense?

30. Which part of the assessment did you witness? Did you accompany the assessor into the barn? For how long?

31. If you have accompanied the assessor,
- How did you feel about the assessment in the barn?

- Do you think the visit to the barn has affected the birds?
- Do you think it finally had a negative effect on the production?
- What should or could be done differently in order to minimize the disturbance or negative effects? (⇒ continue with Part V question 33)

32. If you have NOT accompanied the assessor,
- Do you think/expect the visit to the barn has affected the birds?
- Do you think it finally had a negative effect on the production?
- What should or could be done differently in order to minimize the disturbance or negative effects?

Part V: Impressions of / opinions about the assessor and the assessment

33. What impression do you have of the assessor?
- Did you like the way the assessor behaved towards you?
- During the first contact/at the telephone and during the visit?

34. Did they explain well to you what participation in this project would entail?

35. Did you like how the assessor did the measurement in the barn and on the animals? How he/she treated the birds?

36. Is there anything you would like to see different in the behaviour of the assessors?

37. Is there anything that you disliked about the way the assessment took place at your farm?
- Answer to the open question: ……
- What about the length of the assessment?
- What about the assessor's presence in the barn and contact with the animals?

38. Should farmers be financially rewarded for involvement in the Assessment Scheme?
- Yes. If yes, why?
- No. If no, why not?

Part VI: Opinions on the results of the assessment

By now you should have received an assessment report with your results. The comparison with other farms will come later.

39. What do you think about the report? Is it clear and understandable?
- Yes. If yes, why?
- No. If no, why not?

40. What do you think about the results of the assessment on your farm?
- Do these results surprise you?
- Is the welfare of your animals better or worse than you expected?

- What surprises you / what does not surprise you regarding your own farm and why?

41. Are the results providing interesting and relevant information for you? Do they tell you how to improve the welfare of your animals?
- Yes. If yes, why?
- No. If no, why not?

42. Are you going to use the information?
- Yes. If yes, why?
- No. If no, why not?

FOR THOSE FARMERS WHO RECEIVED PERSONAL ADVICE

Part VII: Relevance of the advice (if no advice, continue with Part VIII/question 45)

43. What do you think about the individual advice that was provided to you? Is the advice useful?
- Yes. If yes, why?
- No. If no, why not?

44. Do you consider to implement certain measures on your farm, based on the advice that was provided?
- Yes. If yes, why?
- No. If no, why not?

Part VIII: Reflections on the implementation of the Assessment Scheme

Here we discuss with you about the way the WQ assessment tool is supposed to work more in general.

The WQ assessment scheme differs from other control and inspection scheme:
1. it focuses on animal welfare
2. it measures the welfare of living animals, the production system and processes at the farm, the transport as well as the condition of the animals at the slaughterhouse. This combined results in an average animal welfare score per flock
3. the system allows to distinguish between more or less animal friendly producers
4. the system allows to certificate products in the shop as more or less animal friendly products (e.g. with stars)
5. the system is meant for all producers in Europe to allow for comparison across Europe.

Questions:

45. The Assessment Scheme measures animal welfare at the farm, during transport as well as at the slaughterhouse, and calculates one integrated welfare score for a certain flock.

- Do you agree that the scores are combined in 1 overall welfare score?
- Why? Why not?

46. Is it interesting for you as a farmer to know the welfare score of your farm?
- Yes. If yes, why?
- No. If no, why not?

47. What do you think about the idea to compare animal welfare among farmers and to distinguish whether they are more or less animal friendly producers?
- Answer on the open question: ……

48. Is it interesting for you to know how you do in comparison with other farmers working in the same sector?
- Yes. If yes, why?
- No. If no, why not?

49. Do you think that a label that distinguishes between more or less animal friendly produced products encourages consumers to buy more animal-friendly products?
- Yes. If yes, why?
- No. If no, why not?

50. Would you be interested to produce such especially animal friendly products?
- Yes. If yes, why?
- No. If no, why not?

51. Do you think it is important to have the same animal welfare assessment tool across Europe?
- Yes. If yes, why?
- No. If no, why not?

Part IX: Open space for expressing worries and hopes about the assessment

52. About the Assessment Scheme:
- Is there anything else you would like to say about the Assessment Scheme or its implementation on your farm?
- Do you see any pitfalls that have not been discussed yet?
- Do you have any other comment about the relevance of the Assessment Scheme?
- Do you want to comment anything on the information that has been provided?

53. Do you want to say anything else about animal welfare in general?

A5.2 Questionnaire for the Farmers That Belong to the Control Group (Those Who Did not Have an On-farm Assessment)

Respondent number:
Month, day and time:
Length of the interview:

Briefly explain to the respondent:
- who you are and whom you represent, what will be done with the interview material
- how long the interview will take
- we do this research in three countries and how long it will take to analyze the results

Part I: General data on the farmer and his or her farm

54. General data on the farmer and his/her farm.
- personal data
  - age ……
  - gender ……
  - education ……
  - family situation ……
  - position on the farm ……
- farm data
  - size ……
  - labour force ……
  - juridical form……
  - contracting / integrator ……
  - economic performance ……

55. Can you briefly describe your barns to me? How many? What size? What systems?

56. Regarding changes in the production system:
- I changed things. If so, what? Why?
- I plan to change things. If so, what? Why?

Part II: Human–animal relations: definition, measurement and care for animal welfare from producers' perspective

57. What is animal welfare in your view?

58. What is important in your view for taking 'good' care of the animals?
- Answer on the open question: ……
- How do you check the welfare of the animals? How do you see if the animals are doing well?
- How do you see that they are NOT doing well?

59. What can farmers do in order to assure the welfare of the animals?

60. How could you improve animal welfare on your farm?
- Answer on the open question: ……
- If mentioned something: are you going to do this?
  - Yes, surely.
  - No, I won't.
  - No idea yet.
  - If no / no idea yet, why not?

61. When it comes to animal welfare, whose knowledge and opinion you value most?

Part III: General information that was received on fore-hand

62. Did you read the information that we send you before-hand?
- Yes
- No, because …… (⇒ continue with question 11)

63. Was the information clear and understandable?
- Yes
- No, not really because ……

Now we would like to discuss some of the characteristics of the Welfare quality assessment tool with you. First of all the way animal welfare is assessed in this project.

As interviewer you present the following information:
- In the information sent to you we explain that WQ assesses the welfare of animals by doing measurements in the barn and at the living animal.
- Besides it gathers information about the transport and looks at the dead animals at the slaughterhouse.
- In order to do the measurements at the living animals, the assessors enter the bird house.
- In total the assessment in the barn takes about 5 hours.

And list that assessment in the barn consists of the following on farm-measurements:
I. the researchers measure the panting/huddling of birds
J. behavioural characteristics of the flock like activity, fear etc
K. different tests of fear
L. ability to walk
M. foot pad dermatitis, hock burn, breast burn and pathology
N. litter score
O. aspects of the house
P. mortality

For each of these on-farm measurements we would like to know if:
c) you think that the measurement tells something about the welfare of the birds, and

d) it is delivering relevant information to you as farmer.

I. The researchers measure the panting/huddling of birds: by estimating the number of birds performing this behaviour at different locations in the bird house

64. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

65. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

J. Behavioural characteristics of the flock like activity, fear etc.: by carefully observing the behaviour of the birds in the flock and giving the flock scores for each behavioural category on a continuous scale

66. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

67. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

K. Different tests of fear (response to novel object and an unfamiliar person): by measuring the response of the birds to the researcher (the 'touch test') and the response of the birds to a novel object at different locations in the barn

68. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

69. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

L. Ability to walk: 25 birds are randomly selected at 10 locations in the house. Birds are stimulated to walk and the researcher scores if they have a normal or abnormal walking pattern

70. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?

- No. If no, why not?

71. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

M. Foot pad dermatitis, hock burn, breast burn and pathology: the researcher randomly selects 10 birds at 10 locations in the house and inspects the birds

72. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

73. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

N. Litter score

74. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

75. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

O. Aspects of the house: like number of feeders, drinkers, light, ammonia, humidity, dust

76. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?
- No. If no, why not?

77. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

P. Mortality: the number of birds culled (including those that were 'selected')

78. Do you think this is relevant for measuring the birds' welfare?
- Yes. If yes, why?

- No. If no, why not?

79. Is the measurement giving relevant information to you as farmer and caretaker of the animal?
- Yes. If yes, why?
- No. If no, why not?

Summarizing:

80. Which of the discussed measurements is most relevant in your view? Mention one! Why this one?

81. Which of the discussed measurements is the least relevant in your view? Mention one! Why this one?

Part IV: Reflections on the implementation of the Assessment Scheme

Here we discuss with you about the way the WQ assessment tool is supposed to work more in general.

The WQ assessment scheme differs from other control and inspection scheme:
6. it focuses on animal welfare
7. it measures the welfare of living animals, the production system and processes at the farm, the transport as well as the condition of the animals at the slaughterhouse. This combined results in an average animal welfare score per flock
8. the system allows to distinguish between more or less animal friendly producers
9. the system allows to certificate products in the shop as more or less animal friendly products (e.g. with stars)
10. the system is meant for all producers in Europe to allow for comparison across Europe.

Questions:

82. The Assessment Scheme measures animal welfare at the farm, during transport as well as at the slaughterhouse, and calculates one integrated welfare score for a certain flock.
- Do you agree that the scores are combined in 1 overall welfare score?
- Why? Why not?

83. Is it interesting for you as a farmer to know the welfare score of your farm?
- Yes. If yes, why?
- No. If no, why not?

84. What do you think about the idea to compare animal welfare among farmers and to distinguish whether they are more or less animal friendly producers?
- Answer on the open question: ……

85. Is it interesting for you to know how you do in comparison with other farmers working in the same sector?
- Yes. If yes, why?
- No. If no, why not?

86. Do you think that a label that distinguishes between more or less animal friendly produced products encourages consumers to buy more animal-friendly products?
- Yes. If yes, why?
- No. If no, why not?

87. Would you be interested to produce such especially animal friendly products?
- Yes. If yes, why?
- No. If no, why not?

88. Do you think it is important to have the same animal welfare assessment tool across Europe?
- Yes. If yes, why?
- No. If no, why not?

Part IX: Open space for expressing worries and hopes about the assessment

89. About the Assessment Scheme:
- Is there anything else you would like to say about the Assessment Scheme or its implementation on your farm?
- Do you see any pitfalls that have not been discussed yet?
- Do you have any other comment about the relevance of the Assessment Scheme?
- Do you want to comment anything on the information that has been provided?

90. Do you want to say anything else about animal welfare in general?

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