

Chapter 1

Project background and methodology

This chapter summarises the structure and activities carried out during the project. The project commenced in August 2007 and was completed in June 2008: a timeline which includes the milestones is included in Appendix A. Detailed information of the work carried out is given in subsequent chapters, and in the Appendices.

1.1 Research overview

1.1.1 Objectives

The objectives of this project were to review and develop indicators for the on-farm assessment of the welfare of farmed pigs in New Zealand, culminating in the delivery of a robust working tool for practical implementation. This tool was assessed for reliability and subjected to a validation exercise.

1.1.2 Service delivery

A summary of the work performed for this project, which is presented in subsequent chapters and appendices, can be sequentially listed as follows:

1. An initial *literature review* was performed, which contextualises current science-based approaches for welfare provision and assessment and describes international best practice. By detailing assessment structures (including relevant legislature) in several major pig-producing countries, the review provides a comparative framework for the development of an appropriate assessment system which will assure welfare outcomes in New Zealand.
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2. On the basis of this work, the project team subsequently identified and compiled a proposed *list of indicators* for possible implementation.
3. The project team was committed to careful and thorough consultation to ensure the recommended indicators were developed in agreement with, and with the acceptance of, all key stakeholders. This was ensured by convening two *stakeholder workshops* to capture the input and expertise of the participants, by prioritising and reducing the 'longlist' of putative indicators to a 'shortlist', and by discussing the options for format and delivery of the assessment protocol.
4. A robust *protocol for on-farm implementation* was developed, incorporating the indicators identified as being important. A dual approach to assessment was taken. In keeping with recent welfare science and currently recognised priorities, the protocol has a strong focus on animal-based welfare outcomes. It concurrently uses the more facilities-based Minimum Standards (defined in the Animal Welfare (Pigs) Code of Welfare (2005)²⁴) as a touchstone, as this provides the legislation that is currently in force.
5. This tool was assessed for practicality, reliability and validity by project personnel on a commercial pig farm. The team presented the protocol and reported on the findings to the stakeholder participants; adjustments and modifications were made on the basis of feedback and discussion. A limited on-farm trial of the 'final' protocol was performed by two pig veterinarians. Final changes were made to fine-tune the protocol.

Chapter 2: A review of the literature

The literature review summarises definitions of animal welfare, and lists approaches to the development of objective welfare measures and practical on-farm measurement tools (e.g. management inputs vis-a-vis welfare outcomes). It defines criteria for the development of on-farm assessment protocols, including principles informing selection of welfare assessment indicators (such as feasibility, validity, reliability, repeatability, objectivity).

The review also summarises indicators utilised in existing pig welfare assurance programmes internationally (e.g. indices including facilities, space, environment, stockmanship, health, behaviour and production). It addresses recent international research and practice into the development of practical welfare indicators for use on farms, including:

- the Swine Welfare Assurance Programme (USA)²⁵ for the assessment and benchmarking of the care and welfare of pigs;
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- the Bristol Welfare Assurance Programme (UK)¹⁰, identifying procedures and protocols for the development, testing and implementation of practical farm assessment programmes, including protocols developed for assessing the welfare of growing pigs;
- work underway under the auspices of the EU-funded Welfare Quality³⁹ project, designed to develop European standards for reliable on-farm welfare assessments.

Chapter 3 and Appendix B: Compilation of putative welfare assessment indicators

An initial set of indicators for the assessment of welfare status was developed, drawing on current international best practice. For each of the proposed indicators, details are given on how it relates to animal welfare, how assessment is conducted on-farm, and how each measure is taken. The advantages and disadvantages (particularly in terms of practicality) are also discussed.

Appendices C, D and E: Stakeholder input

Key stakeholders were identified as MAF, NAWAC, RNZSPCA, the NZ Pig Veterinary Society, the NZ Pork Industry Board, and representatives of pork producers. In the first round of consultation, the literature review with the initial list of indicators was electronically circulated, prior to convening a workshop for all key stakeholders to discuss:

- views on definitions of welfare;
- the practicality and feasibility of the proposed indicators;
- their relative importance, ranking and classification;
- any significant areas of concern or difference among stakeholders;
- a process for refinement of the measures and tools (and to address stakeholder concerns, if any).

A second round of consultation was undertaken to refine the proposed measures and tools. Subsequently, a protocol suitable for on-farm assessment was developed, and evaluated on-farm (see below). Then, a second meeting of all stakeholders was convened to present the findings, discuss and confirm the practicality and feasibility of the proposed tools, and the acceptability to each stakeholder. The protocol was separately presented to a group of pig producers.

Chapter 4 and Appendix F: Development of the assessment tool

The protocol suitable for on-farm assessment was developed subsequent to the first workshop, which integrated the agreed indicators into a workable format which gave broad coverage, i.e. was

- applicable to a range of husbandry and housing systems;
- applicable through the life cycle of a pig;
- applicable for determining the welfare of individual pigs versus groups of pigs, and integrative to give an outcome for pig farms or herds as a whole;
- adaptable and suitable for use by a range of assessors, e.g. pork producers and industry professionals, quality assurance schemes, assessors tasked with enforcement, etc.;
- capable of distinguishing acceptable / marginal / unacceptable standards of animal welfare (and in identifying causative factors);
- acceptable to each stakeholder.

Two on-farm pilot studies were undertaken: the first of the initial protocol by the project team, and the second by two pig veterinarians, on a larger number of farms, after the second workshop review. The outputs of the second trial were used to update the protocols into their current format.

1.1.3 Reporting

Reporting was carried out at various timepoints over the project duration. The following documents were prepared, circulated and submitted:

- the literature review and initial list of indicators was submitted to MAF, and circulated to the stakeholders;
- outputs of the first stakeholder workshop were circulated to the participants, as well as MAF;
- outputs of the second stakeholder workshop were circulated to the participants, as well as MAF;
- a draft final report was submitted to MAF, which compiles and incorporates all of the project outputs;
- this was modified on the basis of feedback and comments from MAF to constitute this final report.

1.1.4 Project personnel

The project team at Massey University draws on the combined expertise of researchers internationally recognized in the fields of animal behaviour and welfare, with extensive knowledge of porcine behaviour and welfare, and is strongly networked with NZ pork producers and international pork industry researchers and groups. The team consists of the following people:

- Ian Barugh: BAgSci, DipSc
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- Dr Daan Vink: DVM, PhD
 - Professor David Mellor: BSc (Hons), PhD, HonAssocRCVS, ONZM
 - Eric Neumann: DVM, MS
 - Kevin Stafford: MSc, PhD
 - Dr Patrick Morel: DiplIng-Agr, DrScTech
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