Deliverable Factsheet

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Brief description of the Deliverable

The deliverable presents the findings of focus groups that were undertaken in UK, FI, BE and IT where the Q Methodology was used to identify the expectations and objectives of low input and organic dairy supply chain members (producers, milk buying groups, processors, retailers and consumers) The report includes a description of the methodology used and presents the findings of the workshops and analysis in each country.

Target audience(s)

Researchers within the SOLID Project and the wider scientific community.

Executive Summary

In this study, the objective was to identify the expectations and objectives of organic and low input dairy supply chain members in relation to innovations in farming practices to achieve more sustainable farming systems. Particular emphasis was placed on identifying conflicts and synergies amongst supply chain members that highlight any potential bottlenecks in the uptake of innovative practices. The expectations and objectives of low input and organic dairy supply chain members (producers, milk buying groups, processors, retailers and consumers) were identified by means of focus groups (3 focus groups consisting of 8-12 participants from a range

of low input and organic supply chains) in participating countries (UK, IT, FI, BE). The Q Methodology (Eden et al., 2008) was used to compare the viewpoints of the different participants. This methodology highlights common ground and divergence in the expectations that organic and low input dairying can deliver and is used to understand the points of view of a specific part of the population and is not intended to lead to conclusions about the population as a whole (Brown, 1993).

Performing a Q study involves five steps:

- Definition of the discourse or "concourse" which is the ordinary conversation, commentary and discussions surrounding a subject;
- Development of the "Q-sample" or set of statements representative of the concourse which the participants will rank;
- Selection of the "P-set" or group of individuals to carry out the ranking exercise;
- "Q-sorting" procedure, where the participants rank the statements;
- Analysis and interpretation.

The relevant discourse or the "concourse" surrounding the objective of this work included materials on innovation uptake across the broad range of dairy farming systems i.e. organic through to intensive as this study was carried out in 4 different countries (UK, IT, FI, BE). This discourse lead to the generation of a set of statements on innovation in dairying (the Q-sample) which participants in the various workshops were asked to rank (Q-sort) from those they would most like to see to those they would least like to see in organic and low input dairy production. The analysis of the sorts was carried out using a software package PQMethod (Schmolck, 2002). The first step in the analysis involved correlating every sort with every other sort. The sorts were then factor analysed and rotated to reduce the data to a smaller number of 3 or 4 defining sort (maximum 8) (Hall, 2008). The sorts that emerge from the analysis represent different attitude groups that exist in the discourse surrounding the topic being investigated. In this study only 2 Factors (or attitude groups) were identified as significant in each country and supply chain member analysis.

There was consensus across all participants within a supply chain in a country and across countries as to which innovations were deemed to be unacceptable in organic (from an ethical and/or regulatory perspective) and low-input dairy systems. These included:

- Improve forage quality and yields in low-input dairy systems by GM plant breeding techniques
- Develop designer dairy food from transgenic animals
- Acceleration of genetic selection including recombination in vitro
- Innovations to speed up calf development from birth to maturity so that they can breed earlier
- Innovation in indoor (100% housed) dairy systems to improve animal welfare

With the exception of "Innovation in indoor (100% housed) dairy systems to improve animal welfare" in Finland (which consumers liked and processors and retailers disliked), there were no major conflicts within country specific supply chains over which innovations were acceptable or not. There were however differences in where different supply chain members priorities lay. Consumers tended to load more on Factors where the main theme was high animal welfare, this was a pattern observed across countries too. Producers and retailers/processors on the other hand tended to load more on factors related to feed efficiency, feed quality and efficiency of production. Innovations to improve animal welfare, however, were still also important to this group. Italy was unique in having a group of supply chain members loading on a supply chain efficiency factor.

In terms of innovations that were most liked by Factors 1 and 2 in the producer, retailer/processor and consumer groups and the innovations that were identified by both Factor groups by consensus (in bold), the following can be recommended for each country:

Belgium

- Develop new forage varieties specific for low input and organic farming (Factor 1)
- Develop the use of herbs in pastures for their medicinal properties to reduce animal health problems (Factor 1)
- **Improve the ecological footprint of dairy supply chains through improved logistics**
- Develop an efficient network for the selling of biogas from livestock manure and slurry (Factor 2)
- Increase animal welfare by prolonging maternal feeding of calves in an efficient way (Factor 2)
- **Develop organic dairy production systems free of antibiotics**
- Minimise the use of purchased feed through efficient use of home grown feed (Factor 1)

Finland

- Identify adapted breeds for organic and low input production systems (Factor 2)
- Develop new forage varieties specific for low input and organic farming (Factor 1)
- Develop techniques to improve soil biodiversity to increase the feed value of forage (Factor 1)
- Develop the use of herbs in pastures for their medicinal properties to reduce animal health problems (Factor 2)
- Increase animal welfare by prolonging maternal feeding in an efficient way (Factor 2)
- Develop organic dairy production systems free of antibiotics (Factor 2)
- **Innovation in housing aimed at improving animal welfare**
- Minimise the use of purchased feed through efficient use of home grown feed (Factor 1)
- Advances in crop and soil management to improve on farm recycling of nitrogen from slurry and manure (Factor 1)

Italy

- Develop techniques to improve soil biodiversity to increase the feed value of forage (Factor 1)
- Develop the use of herbs in pastures for their medicinal properties to reduce animal health problems (Factor 1)
- **Improved milk quality by better use of forage**
- Increase animal welfare by prolonging maternal feeding in an efficient way (Factor 1)
- **Minimize the use of purchase feed through efficient use of home grown feed**
- **Develop systems for reducing water and fossil fuel consumption on organic and low input dairy farms**
- Innovative solutions to improve the efficiency and customer convenience of short supply chains in the dairy sector (Factor 2)

United Kingdom

- Identify adapted breeds for organic and low input production systems (Factor 2)
- Reduce the risk of Genetically Modified Organism (GMO) contamination in dairy feeds by optimal use of proteins alternative to soy (Factor 2)
- Develop techniques to improve soil biodiversity to increase the feed value of forage (Factor 1)
- Develop new forage varieties specific for low input and organic farming (Factor 5)
- Develop the use of herbs in pastures for their medicinal properties to reduce animal health problems (Factor 2)
- Develop organic dairy production systems free of antibiotics (Factor 2)

- Minimize the use of purchase feed through efficient use of home grown feed (Factor 1)
- Develop systems for reducing water and fossil fuel consumption on organic and low input dairy farms (Factor 1)
- Advances in crop and soil management to improve on farm recycling of nitrogen from slurry and manure (Factor 1)

In the UK all there were no consensus statements that participants would not like to see, however there were four innovation statements that all participants agreed they would **not like** to see:

- Improve forage quality and yields in low-input dairy systems by GM plant breeding techniques.
- Develop designer dairy food from transgenic animals.
- Acceleration of genetic selection including recombination in vitro
- Innovation in indoor (100% housed) dairy systems to improve animal welfare

The majority of participants in other countries also disliked the first three statements above but there was country and supply chain member differences over the last statement.

Potential Stakeholder impact(s)

Identifying which types of innovation are acceptable in low input and organic dairy supply chains is important for targeting where research funding should be directed but also for ensuring that bottlenecks in innovation uptake within a supply chain do not occur. This obviously has direct impacts on those distributing research funding and those participating in low input and organic dairy supply chains.

Interactions with other WPs Deliverables / joint outputs			
WP no.	Relevant tasks	Partner(s) involved	Context of interaction
1	1.3	ORC	The outputs of D5.1 will feed into Task 1.3 (national workshops to identify research priorities) to identify appropriate innovations to implement and test on farm in WP1.