



R&D Project Summary for AHDB Farm Scale Resource Use Efficiency calculator

Project Number:	AHDB ref: 74325 (HDC ref: CP 108)
Title:	Farm Scale Resource Use Efficiency Calculator
Short Title:	Farm Scale Calculator
Lead Contractor:	ADAS UK Ltd
Other Contractors:	Scottish Rural University College
Start & End Dates:	30 April 2013 - 30 March 2015

The Problem:

Lifecycle analysis (LCA) is a recognised, if still developing, methodology to assess the environmental impacts associated with all the stages of a product's life, and is most commonly used by policy makers and the supply chain. Data used in LCA may also be interpreted from the perspective of resource use efficiency, in terms which are potentially more meaningful for primary producers, striving to optimise productivity within sustainable farming businesses. Existing tools generally focus on a single enterprise but managers' decisions on resource use can have effects on several enterprises on a farm. There is a need for a calculator that can examine the overall resource use across enterprises on a farm.

AHDB wishes to build awareness and understanding in their stakeholder communities of the way that farm management decisions on the use of resources (including land) determine environmental impacts. This project is being undertaken to explore, develop and deliver a computer-based "resource use efficiency calculator" for use in the organisation's interactions with UK farming and supply chain businesses.

The project will result in calculator that will calculate other established LCA criteria including: primary energy use (PEU); global warming potential (GWP); acidification; eutrophication; abiotic resource use; pesticide use; land requirement and extracted water use to enable a comprehensive life-cycle inventory (LCI) of the environmental burdens and resource use to be established.

Aims and Objectives:

The main aim of the project is:

to develop a AHDB Resource Use Efficiency Calculator to build awareness and understanding of how farm management decisions on the use of resources (including land) determine environmental impacts and associated economic impacts.

A further aim is:

to show how a user-friendly, computer-based AHDB Resource Use Efficiency Calculator can be

used in AHDB's interactions with UK farming and supply chain businesses, to investigate the outcomes from possible changes that might be made to farming systems.

Approach:

This work will develop a new calculator specifically tailored to the needs of the AHDB that will not be a refinement of existing sector-specific calculators. The consortium will draw on the learning from existing resource use/environmental impact decision support tools already developed by the consortium members, including the PAS2050 certified calculator from SRUC and incorporate this knowledge into the AHDB Resource Use Efficiency (RUE) Calculator.

The calculator consists of a number of key components:

- a) The AHDB RUE Calculator provides an interface that enables the user to interact with the tool to input data, develop scenarios, analyse resource use efficiency and visualise and output results.
- b) Underpinning the calculator are two farm databases: A library of default farm data values for different farm and enterprise types based on analysis of existing farm survey and benchmarking data; and a database of user-defined farm data. These farm data are used in the analysis of LCA impacts, analysis of carbon footprints and scenario development.
- c) Driving the calculations will be a calculation library and associated library of technical information. The calculation library contains the set of calculations required to determine LCA impacts and carbon footprints. The boundaries of the LCA within the calculator are defined as being from primary production, including raw materials, to farm gate. The technical and environmental data library contains the emission factors, soils and climate data required by the calculation library.