

A farm level Decision Support Tool to quantify ecosystem service delivery from permanent grassland



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The Problem

Permanent Grassland (PG) offers multiple Ecosystem Services (ES). Farmers may not be aware of ES offered and how to improve these. No existing Decision Support Tool currently offers for the management of PG to enhance productivity and the delivery of ES to society.

The Solution

Develop a DST to quantify ES from PG using a four step user-based design process.

1. Information gathering

Six ES of interest were identified (Fig. 1) each of which had four to five parameters used to calculate them.

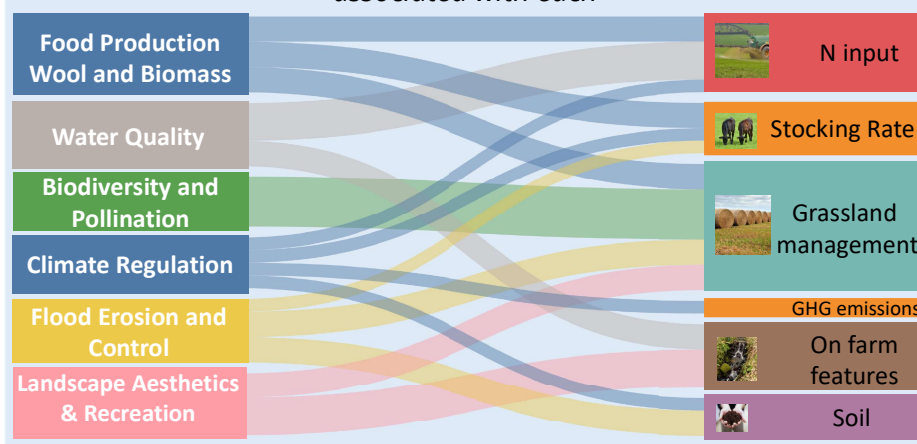
Expert working groups were set up to agree suitable questions and calculations.

2. Development

It was agreed to use simple additive weighting (SAW):

- Each parameter ranked and given a percentage weighting (a higher weighting is more important)
- The user input is standardised to a score between 0 and 1
- $\sum(\text{standardised score} \times \text{weighting}) = \text{ES Score}$

Figure 1: The six ecosystem services and the types of parameters associated with each

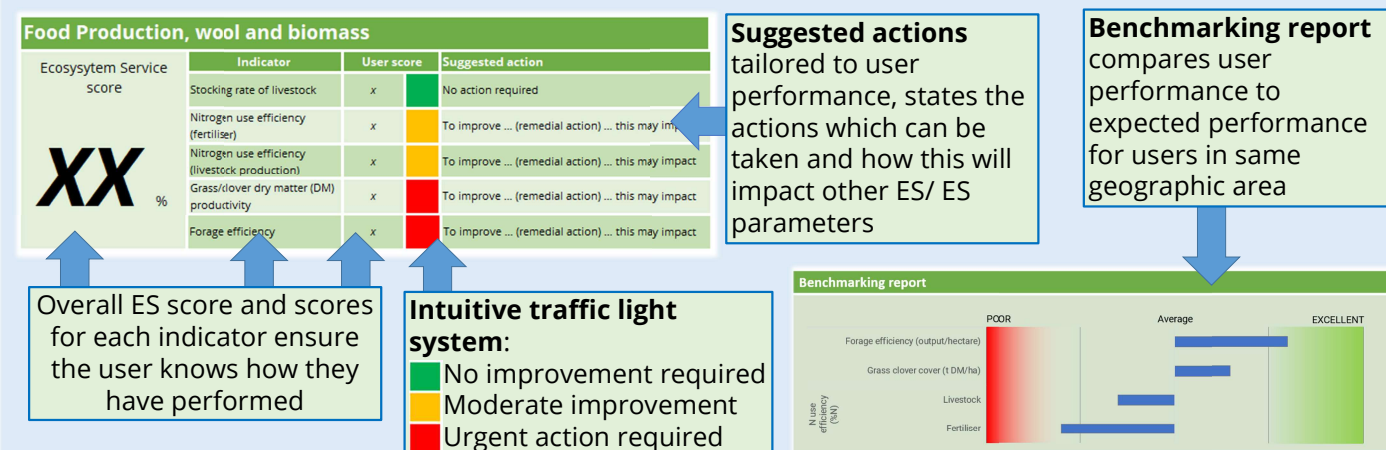


3. Evaluation

The proposed tool format (Fig. 2) was shown to a working group of farmers:

- 73% of users found the ES score helpful
- 76% of users found the traffic light system helpful
- 79% of users found the benchmarking chart useful

Figure 2: An example of the report generated by the proposed decision support tool



4. Implementation

The tool is undergoing development with constant input from expert groups and users. A pilot is planned in Autumn.

