

Name:

Energy efficiency

Definition:

The energy efficiency of the farm is the relationship between the energy of the crop and the energy used for the production of that crop.

Calculation method:

It is calculated as the division between the energy output (harvested agricultural production) and the energy input derived from the provision of inputs and that used in the management practices on the farm.

$$\text{Indicator} = \frac{\sum_i (EB_i \times A_i)}{A_T}$$

Where:

Indicator: Energy balance (MJ/ha year)

EB_i: Energy balance of the crop *i* (MJ/ha)

A_i: Area assigned to the crop *i* (ha)

A_T: Total area considered (ha)

Interpretation:

When the value of the indicator is greater than 1, the system will consume less energy than the produced one thanks to the photosynthesis. The more positive the value, the less energy is required, and therefore the farm will be more environmentally sustainable.

Information source:

The surfaces, inputs and yields of different crops are obtained through a survey to farmers. The energy associated with each of the inputs and outputs are obtained from the attached bibliography.

Bibliography and references:

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