



WHAT WE ALREADY KNOW

A number of methods to estimate the degree of sustainability of olive groves have been developed.



They all involve complex calculations based on a considerable amount of information, not always easily accessible.

Sometimes it becomes useful to adopt simple sustainability proxy indicators that are easier to implement, despite accuracy being lost.



INDICATORS THAT...

- ✓ Can be calculated by the farmer him/herself
- ✓ Are based on easy-to-obtain data
- ✓ Do not involve complex calculations
- ✓ Make it easy to compare between farms

WHAT CRITERIA DO WE ADOPT TO CREATE SUCH INDICATORS?



One of the reasons for the degradation of agroecosystems is the loss of one or multiple ecosystem services.

Therefore, it seems reasonable to apply ecosystem services provided by a crop as proxy indicators of their level of sustainability.

KEEP IN MIND THAT...

an **ECOSYSTEM SERVICE** is any benefit that an (agro) ecosystem provides to society by improving people's **HEALTH, ECONOMY** and/or **QUALITY OF LIFE**.

Improving the quantity and quality of the ecosystem services provided by olive groves should be a current priority for the EVOO industry.

OUR PROPOSAL

is a sustainability **INDEX** that contains 7 variables whose contribution is proportional to the amount of ecosystem services provided.



27



24



18



12



11



10



5

Number of ecosystem services provided by each variable [extra info](#)

lcc
5.4

llf
4.8

lgl
3.6

lof
2.4

lct
2.2

lar
2

lpf
1

Relative level of relevance assigned to each characteristic when it is present (score as 0 when not present)
(weighted with respect to the value 1 assigned to the variable that provides fewer ecosystem services)

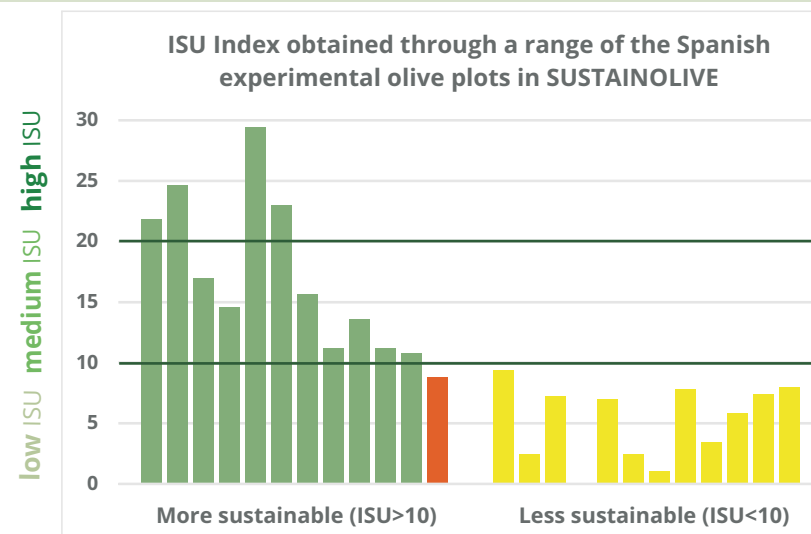
Formula for calculating the Sustainability Index (ISU)

$$ISU = lcc + llf + lgl + A \times lof + B \times lct + C \times lar + lpf$$

Factors

- A** (1 for one source of organic fertilization, 2 for two sources and 3 for three sources)
B (1 when either pesticides or herbicides are applied; 2 when both are not applied)
C (1 for maximum/minimum age ratio between 1.25 and 3; 2 for a ratio greater than 3)

Sustainability ranges calculated using the ISU index: **LOW: 0-10** **MEDIUM: 10-20** **HIGH: 20-30,4**



experimental plot with high ISU



experimental plot with low ISU

Following calculations of the sustainability index, one of the experimental plots in Spain (in red in the upper graph) originally considered as exemplary of hosting sustainable technological solutions was calculated as bearing low sustainability indexes. The application of the ISU index allowed us to replace some of the plots and farms originally selected for research in SUSTAINOLIVE by others better suited to explore the whole range of sustainability options available.