



LOWER INPUTS AND ALSO... LOWER OUTPUTS

An olive grove can be considered to have poor nitrogen circulation when...

- 1 the farmer supplies a quantity of nitrogen fertilizers greater than the demand by the crops and/or...
- 2 a significant proportion of the nitrogen inputs ends up leaving the olive grove and not being used by the trees and/or...
- 3 the combination of management practices currently in place does not boost an increasing recirculation of the olive grove nitrogen pool.

extra info

DID YOU KNOW THAT...

the best possible nitrogen balance (difference between inputs and outputs) for any olive grove is that closed to zero ?

What does it mean for an olive grove to present a **positive** nitrogen balance?

That nitrogen inputs are higher to the outputs, usually due to an overdose of nitrogen fertilizers applied. However, this does not result in a proportional increase in the recirculation of nitrogen within the olive grove.

What does it mean for an olive grove to present a **negative** nitrogen balance?

That there is a nitrogen deficit. The olive grove loses a big proportion of the nitrogen that enters the system, not being able to retain and recirculate it efficiently. The farmer does not replenish nitrogen at a rate commensurate with the rate at which it is lost.

What does it mean for an olive grove to present a **neutral** nitrogen balance?

That the olive grove counts with ecological resources that allow it to constantly recirculate nitrogen inputs within the system (they are reused across the farm repeatedly), thus minimizing losses and reducing dependence on external inputs.

the good practices

THE NITROGEN BALANCE



THE RESULTS OF SUSTAINOLIVE

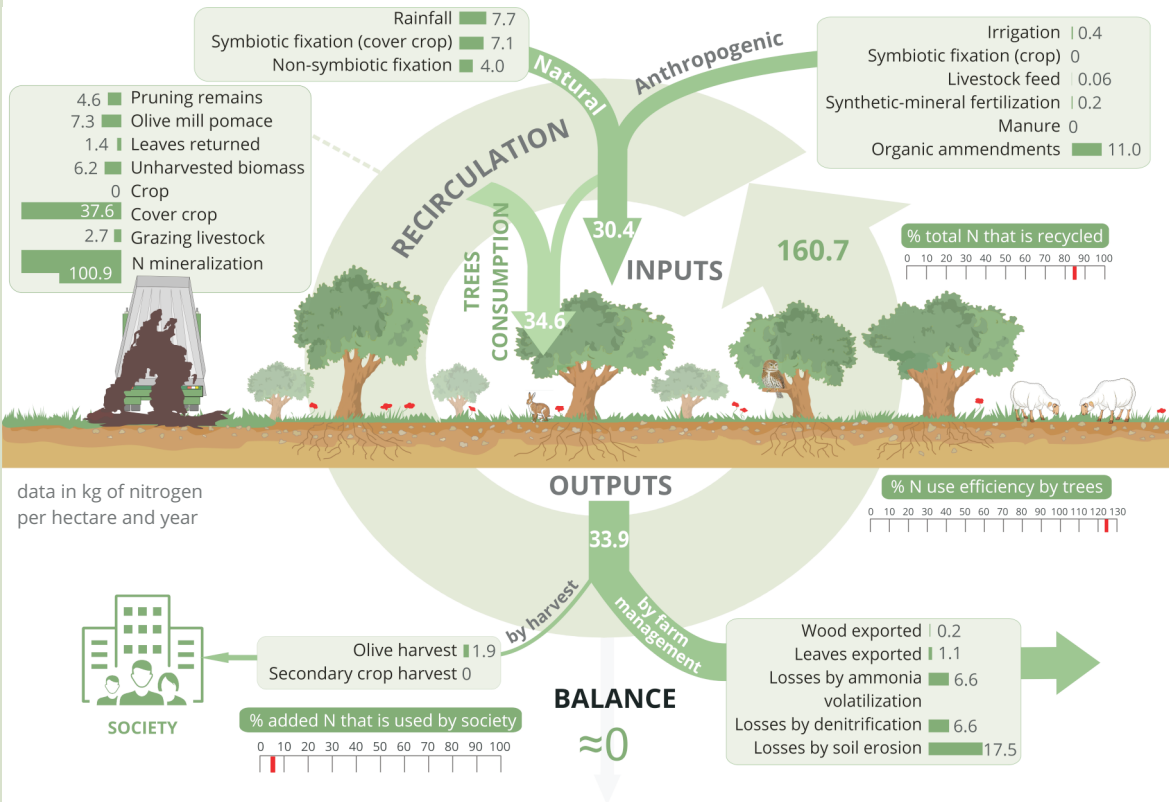
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SOIL ORGANIC MATTER IS THE KEY

extra info

The following infographics compare the estimated nitrogen balances in Spanish SUSTAINOLIVE olive groves with contrasting managements.

1- ORGANIC OLIVE GROVES (average values for 4 olive farms; 3.2% organic matter in the soils)



One of the most remarkable **differences** between organic (1) and conventional (2) olive groves is the **amount of organic matter measured in the soil**.

Let us compare the nitrogen balances of olive groves #1 and #2, and analyze what happens to the various flows when **management practices that considerably increase the amount of organic matter in the soil** are implemented.

Proportion of nitrogen supplied from outwith the system that is used by olive trees

Intensity of the nitrogen recirculation processes

Proportion of nitrogen consumed by trees originated by recirculation

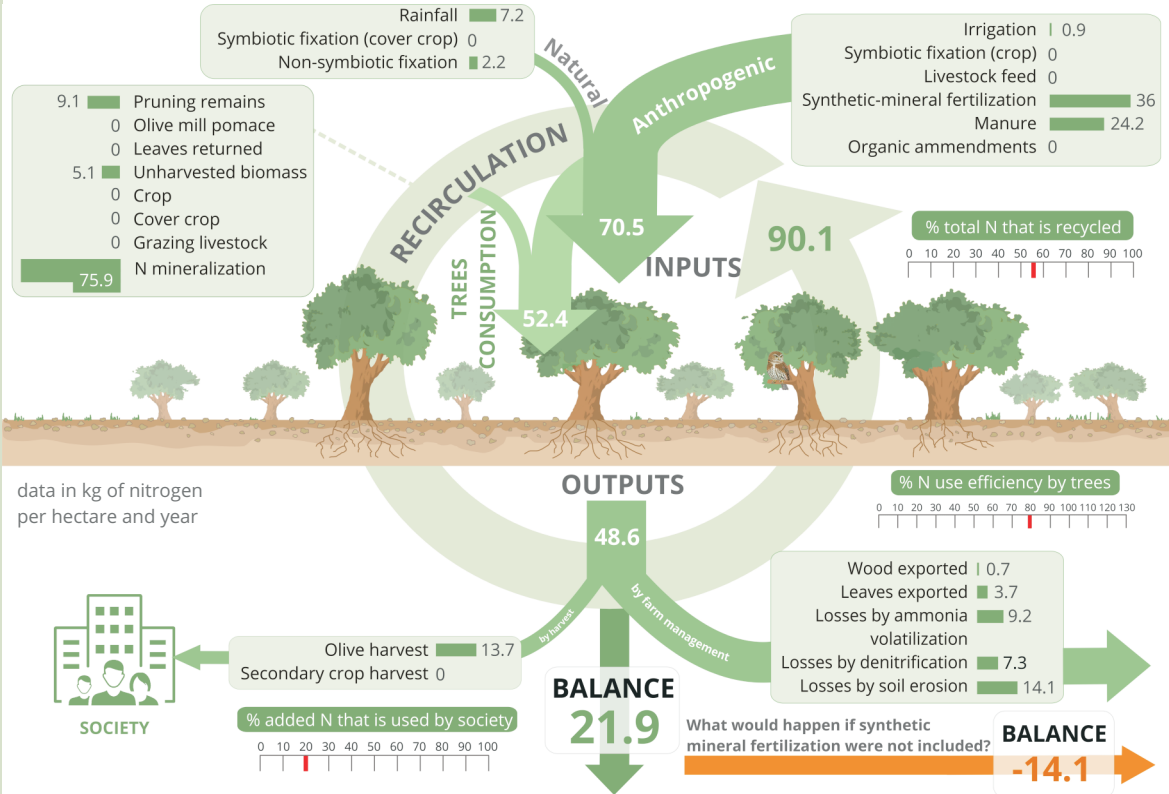
Outputs (=losses) from the system

Recovery capacity of the nitrogen stock that enters the mill (if it returns to the olive grove in the form of composted olive mill pomace)

Dependence on synthetic mineral nitrogen fertilization (without this supply, the nitrogen balance in conventional olive groves would likely be negative)

Self-sufficiency for farmers to govern their agricultural productions and, therefore, their farming businesses

2- CONVENTIONAL OLIVE GROVES (average values for 5 farms; 1.8% organic matter in the soils)



What would happen if synthetic mineral fertilization were not included?

BALANCE -14.1