Living Lab of Siliana – Intercropping Scenario

i. Small Scale Farm Type

Compared to the baseline, intercropping changes very little for this household. Forage mixture crop of %75 vetch and %25 oat is introduced for abour 0,1 ha within the olive yards (0,3 ha). Labor increases slightly, to about 5.9 person-days. Fertilizer use rises by around 4 percent, while pesticide use drops by about 9 percent. Income stays almost flat, around 5,578 dollars. Costs decrease slightly, by about 3 percent. For a small farm with limited resources, this scenario represents a low-risk entry point into agroecological practices, with no significant economic gain or loss in a horizon of 15 years.

Land Use

Main crops	Barley (~1.2 ha), oat (~1.2 ha), faba bean (~1.0 ha), durum wheat (~0.6 ha)
Total Area	4,3 ha
Crop diversity	Five different crops grown across the farm

Farm Activities

Fertilizer use	~270 kg/year +4.4% increase compared to baseline (~258 kg))
Pesticide use	~278 kg/year −8.8% decrease compared to baseline (~305 kg)
Labor demand	~6 person/year

Economic

In this scenario, there is no significant gain or loss in the income, since the area introduced for this crop remains very low.

Annual income	~$5,578/year −0.7% decrease compared to baseline (~$5,616)
Variable costs	~$994/year −2.8% decrease compared to baseline (~$994)

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ii. Large Scale Farm Type

Intercropping adds a forage mixture crop of %75 vetch and %25 oat within the olive yards, — land that was previously not used for annual crops, bringing total managed area to about 91 hectares with an increase of 6 ha. Labor increases by around 19 percent, to approximately 265 person-days per season. Fertilizer use rises modestly by about 8 percent, while pesticide use drops by roughly 21 percent. Income increases by approximately 44 percent, to around 139,300 dollars per year, and income variability falls noticeably, the coefficient of variation drops from 21 percent to about 14 percent, meaning more stable earnings across seasons. Variable costs remain almost unchanged. This scenario combines a higher workload with substantially better and more stable income, alongside a reduction in pesticide applications.

Land Use

Main crops	Durum wheat (~29 ha), chickpea (~22 ha), fenugreek (~14 ha), oat (~7 ha)
Total Area	91 ha (6 ha added for forage mixture, under the olive yards)
Crop diversity	Seven different crops grown across the farm

Farm Activities

Fertilizer use	Slightly higher than baseline (+8.3%, ~3,385 kg)
Pesticide use	−21% compared to baseline (~5,745 kg vs. ~7,289 kg)
Labor demand	+19% more than baseline (~265 days vs. ~222 days/year)

Economic

Annual income	~$139,000/year +44% above baseline (~$97,000)
Variable costs	Slightly lower than baseline (−$428/year, −2.2%)

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