Living Lab of Luxor - Climate change adapted varieties

i. Sugarcane farms

Under this scenario, climate change adapted varieties affect mostly the economic indicator of this farm type. Land allocation has small changes, with an increase in the cereal crops. The water and pesticide use is reduced, however there is a slight increase in nitrogen leaching. This can be explained of the added fertilizer that, these varieties require. Finally, on the economic, income is increased by 20% compared to the baseline, due to the increased yield of the varieties.

Land Use

Main crops	sugarcane (1,37 ha ~ -3,5% BAU), wheat (0,47 ha ~ 0% BAU), maize (0,2 ha ~ +33% BAU)
Total area	2,04 ha
Crop diversity	three crops

Farm activities

Pesticide use	0,67 kg/ha (~ -4,3% BAU)
Water use	10674 m3/ha (~ -7% BAU)
Nitrogen leaching	48,86 Kg/ha (~ +8,1% BAU)

Economic

Annual income	1167,9 EGP (~ +20% BAU)
variable costs	

ii. Livestock farms

In this category, the land allocation is more concentrated over wheat (41% increase), against the rest of the crop. Regarding the farm activities, there is a small decrease over the use of water and phytosanitary products, but, similar to the above farm type, nitrogen leaching has an increase. On the economic indicator, the overall income is increased by 15,7% compared to the baseline.

Land Use

Main crops	sugarcane (0,03 ha ~ -25% BAU), wheat (0,55 ha ~ +41% BAU), maize (0,18 ha ~ -18,2% BAU) , clover (0,1 ha ~ -41,2% BAU), sorghum (0,11 ha ~ -31,3% BAU)
Total area	0,98 ha
Crop diversity	five crops

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Farm activities

Pesticide use	0,95 kg/ha (~ -5% BAU)
Water use	5292 m3/ha (~ -6,3% BAU)
Nitrogen leaching	35,48 Kg/ha (~ +10,6% BAU)

Economic

Annual income	873,2 EGP (~ +15,7% BAU)
variable costs	

iii. Diversified farms

In diversified farms, changes in the crop allocation focusing in the increase of maize and sorghum. This is natural as these crops are aimed to be used both for substitution, feeding small herds of animals, and be sold (surplus). Again, the practice generated a decrease in the pesticide and water use, with also an increase of nitrogen leaching. Finally, the income has a small increase compared to the baseline scenario.

Land Use

Main crops	wheat (0,33 ha ~ -25% BAU), maize (0,52 ha ~ +48,6% BAU) , clover (0,13 ha ~ -43,5% BAU), sorghum (0,14 ha ~ +40% BAU)
Total area	1,12 ha
Crop diversity	Four crops

Farm activities

Pesticide use	1,49 kg/ha (~ -5,1% BAU)
Water use	5844 m3/ha (~ -4,8% BAU)
Nitrogen leaching	34,4 Kg/ha (~ +10,7% BAU)

Economic

Annual income	570,2 EGP (~ +10,6% BAU)
variable costs	

iv. Cereal farms

Cereal farms experience changes in the crop allocation focusing in the increase of maize and clover. Wheat remains the dominant crop, but, loses almost half of the land. Regarding the farm activities, there is a slight decrease on the water and pesticide use, with an increase in nitrogen leaching. The total farm income has a noticeable increase of 20% compared to the baseline scenario.

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Land Use

Main crops	wheat (0,32 ha ~ -30,4% BAU), maize (0,21 ha ~ +61,5% BAU), clover (0,11 ha ~ +175% BAU)
Total area	0,63 ha
Crop diversity	three crops

Farm activities

Pesticide use	4,29 kg/ha (~ -5,1% BAU)
Water use	5056 m3/ha (~ -7,1% BAU)
Nitrogen leaching	35,16 Kg/ha (~ +8,4% BAU)

Economic

Annual income	327,1 EGP (~ +19,4% BAU)
variable costs	

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