

Three Disruption Scenarios

Scenario 1: Disease

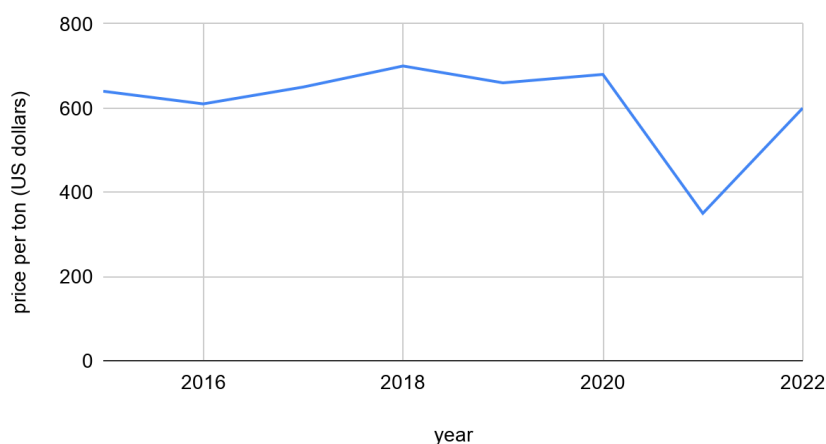
An oil palm farm has been healthy for many years. Over the past 10 years, the oil palm trees have grown to full size and have been producing large amounts of oil palm kernels. A new fungus has recently appeared. The fungus spreads quickly, and there are no current treatments to prevent the spread. It affects the roots of oil palm trees and quickly kills the entire tree. The disease does not affect other crops but wipes out 50% of the oil palm trees. Any oil palm tree that dies must be replanted and will take about 4 years until it is fully grown and kernels can be harvested from it again.



Scenario 2: Rapid palm oil price drop

The global price of palm oil has remained relatively steady, fluctuating between \$600 and \$700 per ton over the past four years. A rapid increase in the demand for other oils and a year of a large palm oil surplus (more than is needed) leads to a sudden drop in palm oil prices in 2021. Palm oil now costs approximately \$350 per ton. This low price lasts for one year and then returns back to \$600 per ton in 2022.

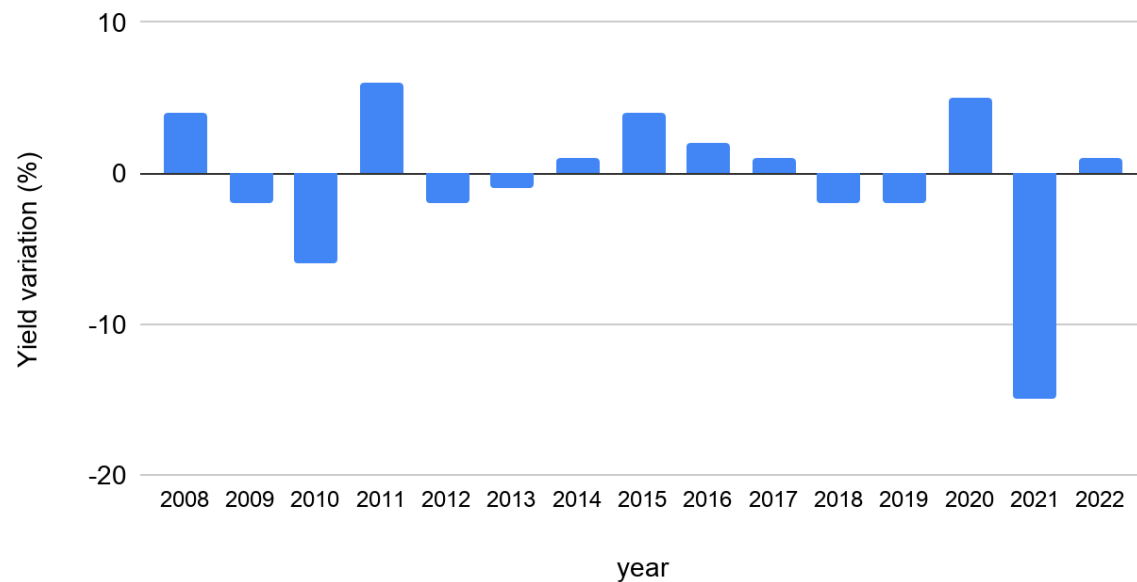
Hypothetical oil palm prices from 2015 - 2022



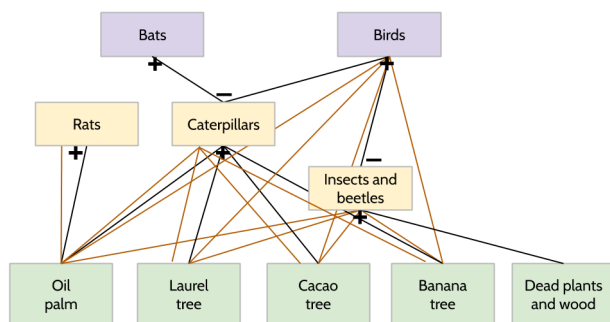
Scenario 3: Drought

The amount of oil palm harvested from a farm (also known as yield) has remained relatively steady over the past 10 years. However, a year of very bad drought in 2021 causes the oil palm trees to be very stressed. This results in a yield that is 15% smaller than average years. The following year in 2022, there is an average amount of rain and the oil palm yields return to normal.

Annual oil palm yield



Diversified oil palm farm system model



Monoculture oil palm farm system model

