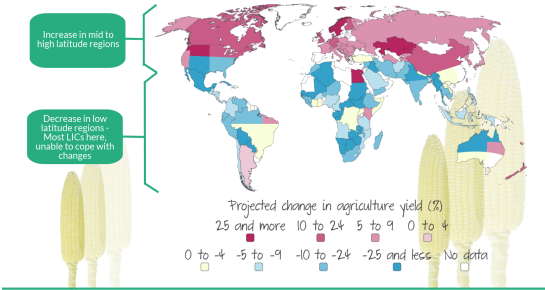
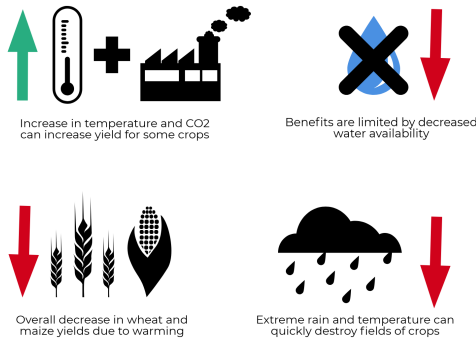


### Expected Changes in Agriculture Yield



### Causes for Changes in Yield



### Livestock

Increase in heat increase required time and resources to properly grow livestock:

- Heat waves cause heat stress in livestock leading to more fighting, which reduces reproductive capacity and appetite and increases mortality
- Heat stress increases vulnerability against disease and lowers milk production
- Drought decreases the yield of grain and quality of pasture land, which decreases food supply for livestock
- Increased CO2 lowers quality of food so more is needed to achieve the same growth and avoid illness
- Warmer weather brings an increase in pests, parasites and the diseases that they spread, among crops. Tropical diseases are expected to spread into higher latitudes where livestock have no immunity. This pushes up veterinary costs

### Limits of Cultivation

Increasing temperatures will lengthen the growing season. It may also allow some crops to spread to higher altitudes and latitudes

Russia's growing areas may extend by up to 64% by 2080 for rice, wheat, corn and potatoes

Shrinkage in crop range around equator as crops are reaching their thermal tolerance

Less frequent freezing or an earlier end to the cold season may increase the range of citrus fruits in many areas, for example in Florida.

### Soil Erosion

Higher temperatures increase decomposition rates, reducing the amount of organic carbon in the soil. Organic matter improves a soil's nutrient- and water-holding capacity. Such losses make the soil more friable and prone to wind erosion.

Peat bogs build up if the soil is waterlogged. Rising temperatures are causing peat areas to dry out and their decomposition leads to the release of carbon dioxide. In the far north of Europe and Asia permafrost is melting and releasing carbon dioxide.

CO2

Increased release of carbon dioxide is driving a positive feedback cycle as additional carbon dioxide is released from the soil

The warming associated with global climate change is also having a drying effect on soils, thus reducing soil moisture stores. In some areas this may increase salinisation