

## Agriculture research and climate change

Research activities in Australia and overseas aim to develop technologies or processes to mitigate the impact of climate change on agriculture.

### Genomics and biotech

Using knowledge gained from genomics and biotechnology tools, such as gene editing, to breed crop varieties and livestock that are more climate resilient.

### Protected agriculture

Developing energy and resource efficient vertical farms, 'protected agriculture', whereby high value produce such as fruits and vegetables are grown indoors with renewable energy sources and processes are fully automated.

### Sensors

Using sensors to measure and only provide water and nutrients when and where they are needed

### Traditional food production

Investigating traditional Aboriginal food production systems in Australia to determine new crops that may be better climate adapted. Native Australian flora can also be used to breed new plant varieties.

### Alternative food sources

Producing plant-based and laboratory-cultured meat alternatives to replace animal-derived proteins. Edible protein can also be sourced from insects. And yeast are being used to develop synthetic protein products.

### Animal feed

Exploiting a red algal species native to Australia produces a molecule that prevents methane production when fed to ruminant livestock. Other innovations include breeding animals and manipulation of the gut micro-organisms that may contribute to a reduction in methane production.