



## Feeding the future

Our global population recently passed the seven billion mark and is predicted to reach nine billion people by 2050. That's an extra two billion people that will need to be fed every year!

Despite being the world's second driest continent, Australia plays an important role in feeding the world's population. We are the world's largest exporter of goatmeat and produce 4% of the world's beef and 8% of the lamb and mutton\* that is consumed globally. The demand for meat is growing and supplying enough protein to satisfy the world's rapidly expanding population is an important issue. There are a few issues and challenges that farmers face.

## Climate

Managing climate variability is one of the biggest challenges that farmers face today. Raising healthy, happy livestock is dependent on enough rain and sunshine to grow pasture to feed the animals. Australia has a naturally variable climate, but the global climate is changing too, so farmers must be prepared for this. Farmers are clever and there are several things they can do to reduce the impact of climate variability. These include:

- **Manage livestock numbers**

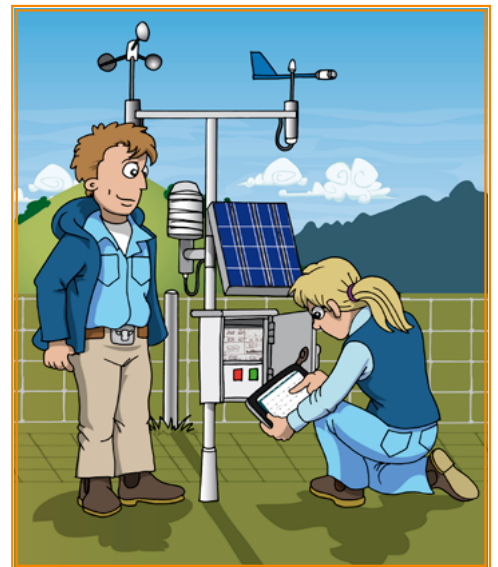
This involves managing how many animals are on the land so the pastures have the opportunity to regenerate. If there are less animals grazing, the farmers can establish healthy pastures with good ground cover and nutrient rich soil in dry seasons.

- **Store produce in good seasons**

When there is a good season with rain and sunshine, farmers make hay and silage from the remains of a crop after the grain is harvested. This can be stored away and used to feed animals during very wet or very dry seasons.

- **Monitor weather**

Staying informed of current weather conditions can assist farmers to manage their stock on a daily basis. Also, monitoring long-range weather forecasts allows farmers to reduce the number of animals they have in preparation for a long dry season.



\*in 2014



- **Match the breed with the climate**

Australia is a large continent with very different climates in the north and south. This means that cattle or sheep that are suitable for the northern conditions will not thrive in the colder southern areas. So, farmers choose breeds that are perfect for the conditions.

There are around 50 different breeds of cattle and 40 different breeds of sheep in Australia and they have characteristics that make them suitable for particular areas. For example, the Brahman breed of cattle has looser skin which means it can withstand the higher temperatures in the northern areas.

## Improving efficiency and productivity through science

A challenge for farmers is to figure out how to feed more people while still using the same amount of land. Amazingly, in 2010, Australian farmers used 7.3% less land than they did in 1950, but produced 220% more produce. How can this be possible? Through science!

Science helps farmers to:

- manage their animals and increase productivity through improved breeding (e.g. breeding animals that grow at good rates, suit the climate, are disease-resistant and produce less methane emissions)
- save energy and improve the productivity of their land, e.g. keeping soil healthy
- work with the environment to eradicate pests (animals and plants)
- utilise technology that can improve the efficiency of the farm (e.g. in more remote areas, drones, light planes and ultralight aircraft make checking animals and water supplies much faster and easier)
- save water by using online systems or iPhone apps that measure water levels and allows farmers to turn water on or off
- stay safe by developing labour-saving machinery and devices on the farm so jobs can be done safely and efficiently
- use satellite positioning systems to manage their land (e.g. to map their soil or study patterns of vegetation change and rainfall).



## Biosecurity and food safety

Farm biosecurity is a set of measures that help to protect a property from the entry of pests and diseases. This is important because an outbreak of a pest or a disease can affect a whole herd/flock of livestock (or even more) which means there will be less meat for the farmer to sell.

Pests and diseases can enter a property in a few different ways, including:

- **Farm inputs**

Anything that comes onto a property could carry a pest or disease. Farmers constantly monitor everything that arrives at the farm.

- **People, vehicles and equipment**

If it can move, it can carry a pest or disease. If something nasty gets onto the tyre of a vehicle, it could spread around the farm very quickly so farmers must manage this risk.

- **Feral animals and weeds**

Feral animals can mix with the animals on a farm or may contaminate water sources that the livestock use. Weeds may grow in a grazing area and make the animals sick or reduce the productivity from the otherwise nutritious pasture.

Australia is free from the world's most serious animal diseases (such as foot-and-mouth disease). We have a good biosecurity record, which means that we are good at managing pests and diseases in our food chain. We can all do our bit for biosecurity. When you travel overseas, it is very important not to bring fresh meat and other produce back to Australia because they could contain diseases that could spread to Australian farms, animals and produce.



Our meat is actually highly prized around the world because it is considered very clean and safe to eat and this is important for Australia and our farmers.