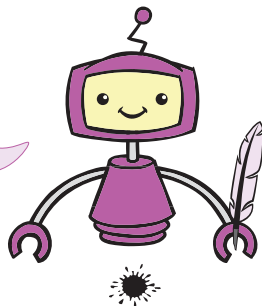


A country life

Peter, Anna, I know it's raining today, but that doesn't mean the whole day is ruined. At least you're waterproof and won't rust. Imagine what would happen if my propulsion system started to rust! I need to keep a close eye on the weather!



LINKS TO:

Stage 3, Module 12
Learning Object 3: *On the other hand*

PRIOR LEARNING:

Stage 2

Module 13 Work Sheet 6: *Many robotic hands make light work*

Stage 3

Module 7 Work Sheet 5: *More correspondence*

1 Drylands

Wheat is one of Australia's traditional, and most significant, farming crops. It was first grown in Australia by the convict, James Ruse, who planted an acre and a half of 'bearded' wheat at his farm near what is now Parramatta in Sydney.

Australia is still one of the top ten wheat-producing countries in the world, growing around 16 million tonnes of wheat each year. Most Australian wheat farms range over hundreds of hectares.

Wheat seeds are sown shortly after the autumn rains, when the ground is cool and damp. Farmers usually grow and store their own seed each year.

Seeds are sown in straight rows, about 25–50 mm deep in the soil. Between 150 and 200 seeds are planted in each square metre of soil.

It takes about a week for the first soft green seedlings to shoot up from the ground, and around six months for a crop to be ready for harvesting.

The size of the harvest depends heavily on the rainfall. Where the farm receives only 400 mm of rain per year, a farmer might grow 60 kilograms of wheat per hectare. If the rainfall is higher, a farmer might grow a bumper crop of 90 kilograms of wheat per hectare.

Like all crops, wheat is susceptible to weeds and pests. Before seed is sown, it is often treated to

prevent bunts and smuts (types of fungi that infect the wheat).

Many varieties of wheat have been bred for specific conditions or uses, and are protected by Plant Breeder's Rights (PBR). If a farmer wants to grow a particular variety of wheat, they usually have to pay a royalty (calculated per tonne of wheat produced) to the person or company that owns the PBR of that variety.

A mature wheat crop will be a field of tall, golden wheat stalks, that sway easily in any breeze and make a dry, rustling sound. The wheat 'ears' droop slightly, because they are becoming too heavy for the stalks.

Wheat is harvested using a large tractor called a combine harvester. The harvester picks and cleans the wheat before delivering it to a silo for storage.

A typical Australian wheat farmer sells half of his wheat within Australia and half, through the Australian Wheat Board, in the international marketplace. Australia exports wheat to many countries around the world. Among the largest importers of Australian wheat are the countries of Indonesia, Korea, the Philippines, Vietnam and China.

Sources: Australian Wheat Board, Department of Primary Industries, and ABS, *Australian Commodities*, Australia 7121.0, 2009-10. Wheat Exports Australia, 2012, *The changing face of the Australian bulk wheat export market*.

The majority of Indonesians believe that if they have not had *nasi* (rice) they have not eaten: *kalau belum makan nasi rasanya belum makan*. Rice is a very important part of life in Indonesia, so much so that in Indonesian it is referred to by several different names: *padi* for the plants in the fields, *gabah* for the unhulled rice after being separated from the stalks, *beras* for the hulled but uncooked rice, and *nasi* for cooked rice. *Padi* is one of Indonesia's most significant crops. It is believed that *padi* originated in India or China. In India, evidence has been found from as early as 800 BC whereas in China, historical records have shown that rice growing may have started as far back as 3000 BC. *Padi* was brought to Indonesia by people migrating from mainland Asia around 1,500 BC.

In 1984, Indonesia received an award from the Food and Agricultural Organisation for going from being the biggest importer of rice in the world to becoming a *negara swasembada beras*: a country self-sufficient in its rice production. According to the Indonesian Bureau of Statistics (*Badan Pusat Statistik*), in 2011 Indonesia produced over 65 million tonnes of rice grown on over 13 million hectares of rice fields.

The main areas for rice growing in Indonesia are in Java, but there are also rice-fields in Kalimantan. Indonesia has developed several of its own superior varieties of rice (*varietas unggul*). Generally, rice is sown in wet or muddy fields called *sawah*. It grows to between 50 cm and 1.5 metres. The rice stalk is soft, segmented and hollow, green when it is young, but yellow as it ripens. The plant is shaped like a ribbon with a pointed end. It has a mid-rib and compounded blossoms.

Rice seeds are germinated in a seedbed for about ten days, before they are planted around 35 cm from one another. Before the seedlings are ready to be planted, however, the *sawah* needs to be prepared. Preparation includes ploughing, levelling and dividing the field into plots to make controlling the water and fertilising the crop easy to perform.

Maintenance of a rice field includes regulating the water, weeding, fertilising and pest control. *Padi* is considered to be growing well if each plant generates

four to six rice stalks. Sometimes a plant generates up to ten stalks, however, the quality of the rice grains will be diminished.

Rice is harvested three to four times a year. The size of the harvest depends on the condition of the fields, the amount of rainfall that has occurred, the technology available and the knowledge of the farmers. Traditionally, harvesting is carried out using an *ani-ani*, a small blade held in the palm of the hand that is used to cut selected stalks individually, or a *sabit*, a sickle with a curved blade and wooden handle. Modern farmers also use mechanical rice harvesters.

After the *padi* is harvested, the grains are separated from their stalks. Traditionally, this was done by threshing a clump of rice on a bamboo plank designed especially for this purpose. The resulting *gabah* is then collected and dried. This is done by spreading the *gabah* in the sun. When it is dry the *gabah* is pounded or milled then stored. Traditionally, separating the grains from the husk was done by pounding using a giant *lesung dan alu*, or mortar and pestle. The modern way is to use a milling device called a huller. The resulting polished rice called *beras* is then packed into sacks and sold. After *beras* is cooked it is called *nasi*.

Since *padi* plays an important part in the life and culture of people in Indonesia, there are several proverbs relating to it.

➡ For example:

Seperti padi, makin berisi makin merunduk.

The more knowledgeable a person is the more humble they should be.

This reflects the fact that, as with the rice plant, the larger someone becomes, the more they should bow down. This also reflects the rice stalk's natural tendency to bow over as its rice grains grow larger and heavier.

Source:

Badan Pusat Statistik Republik Indonesia. Available online. Accessed September 2012.

3 The (Australian) farmer's daughter

Farming has been a significant part of the Australian culture and economy for decades, and remains a big part of how we imagine ourselves, but Australian country life is changing rapidly. Many farming families were able to live off the land for generations, but today more and more young rural people are moving to the cities.

Young people growing up on farms in rural Australia are often schooled at home, or in a small country school during their primary years. If they live in a very remote area, they may even attend the School of the Air (distance education delivered over the radio, by post and online). When they reach high school age, many of them go away to boarding schools.

When they have completed their education, many young people choose to move to urban areas more permanently, partly because there are more varied and numerous career opportunities, rather than stay on the farm and work with their parents. Wages are often higher in urban areas, and both work experience and formal education is available in a range of fields that are not available in rural or remote areas.

The movement of young people away from farming is exacerbated by three main changes to farming since the mid-twentieth century — changes in technology, globalisation of the economy, and the removal of protective tariffs. While crop farming was once a highly labour-intensive practice, these days innovations in technology mean that fewer workers are required to do the basic work of farming, such as ploughing the earth, sowing seeds, fertilising and weeding, and harvesting.

While farming in Australia has traditionally been a family business, small farms have become difficult to run profitably. As a result, more and more farms are amalgamated into large ones, typically owned by corporations or large businesses rather than individual families. According to the Australian Bureau of Statistics, between 1986 and 2001 there was a 22 per cent decrease in the number of farming families in Australia.

According to one study, 75 to 90 per cent of young people living in rural areas intend to leave once they

are old enough to do so. This is reinforced by statistics from the ABS, which state that almost three times as many young people left country areas as arrived in them.

Source: Australian Clearinghouse for Youth Studies, *Australian Youth Facts & Stats — rural & isolated youth*. 2011.

Living arrangements: Farming families. Australian Bureau of Statistics publications. 2012.

The (Indonesian) farmer's son

Indonesia is an agrarian country. This means that the livelihood of the majority of Indonesians comes from farming and agriculture, which is mostly carried out in villages, or *desa*. As *desa* are closely related to farming, there is a tendency to identify inhabitants of a *desa* as farmers and vice versa. Because of modernisation, however, farmers have become marginalised socially and economically. According to data from *Badan Pusat Statistik*, or the Indonesian Bureau of Statistics, around 150,000 hectares of *sawah* are being swallowed up by urban development such as roads or industry each year. Also, because of poverty, many farmers have to sell their land. This results in a vicious cycle of increased poverty whereby, as of March 2010, poor people in the villages amounted to 64.2 per cent of the overall 31 million poor in Indonesia.

Young people growing up in villages are mostly educated in local public primary schools. Some children are required to travel or even leave their villages if they want to go to high school. This poses a problem for many families: it is not uncommon for young people to drop out of school after completing primary school because their families cannot afford to send them to school even though the government has stipulated that every child has to complete nine years of schooling (*wajib belajar*).

Even if they complete high school, many young people, especially men, from rural areas choose to *merantau*, or leave their villages, to seek a better life. For some people this is only temporary, but for others, the concept of *merantau* does not necessarily include the idea of returning home. The reasons so many young people choose to *merantau* rather than stay on the land vary; however, it is mainly poverty that drives

(continued on following page)

