

Careers in agriculture

The Ord River expansion project at Kununurra

Humanities and Social Sciences

- ACHGK061
- ACHGK062
- ACHGK064
- ACHGK072



The Ord River expansion project at Kununurra

Lesson Overview

Students will investigate the development of diverse farming systems in the north of Western Australia, with a focus on constructing water, road and community infrastructure and experimenting with different types of agricultural crops. They will look at government policies to enhance food security and develop Australia's remote and isolated north.

Australian Curriculum:

Humanities and Social Sciences. Geography

Year 9 - The human alteration of biomes to produce food, industrial materials and fibres, and the environmental effects of these alterations ([ACHGK061](#))

Year 9 - The environmental, economic and technological factors that influence crop yields in Australia and across the world ([ACHGK062](#))

Year 9 - The capacity of the world's environments to sustainably feed the projected future population to achieve food security for Australia and the world ([ACHGK064](#))

Year 10 - The Aboriginal and Torres Strait Islander Peoples' approaches to [custodial responsibility](#) and environmental management in different regions of Australia ([ACHGK072](#))

Tuning In

- This video gives a 4 minute overview on farming in Australia, its increased productivity, innovation and global outlook. Produced to celebrate the Year of the Farmer in 2012. [youtube.com/watch?v=_pb2fCoPmjw](https://www.youtube.com/watch?v=_pb2fCoPmjw) (Accessed 27 June 2015)
- This government website provides a gateway to learn about the Ord Final Agreement, to expand agriculture and develop land in Kununurra. This agreement is signed by the state of Western Australia and the Aboriginal people of the Ord region:
dpc.wa.gov.au/lantu/Agreements/OrdFinal/Pages/Default.aspx
(Accessed 27 June 2015)



- The document on the 'Ord Stage Two' farming development is from the Department of Regional Development, Western Australia. This large-scale project is described using several names, including the Ord-East Kimberley Development Plan, Ord Stage Two and the Ord Irrigation Expansion Project. Please make students aware of the different names.
drd.wa.gov.au/Publications/Documents/Ord_East_Kimberley_Development_Plan.pdf (Accessed 27 June 2015)
- This article is about young farmers who have started a new business growing fruit, vegetables and legumes in Kununurra.
farmweekly.com.au/news/agriculture/horticulture/general-news/fresh-ideas-for-family-business/2658534.aspx?storypage=1
(Accessed 21 August 2015)

Whole class introduction

The Ord region at Kununurra is an example of a northern Australian landscape that has been altered in order to establish an agricultural industry. Kununurra has a tropical climate and bright red soils. Since the opening of an enormous dam, Lake Argyle in 1972, successive governments have invested money in:

- developing new irrigated farm lands to make use of the water
- researching different agriculture crops that can survive in a tropical climate
- building roads and infrastructure so agricultural products can be delivered to Perth and other capital cities
- providing services to the town of Kununurra so it will become an attractive place for people to relocate to, establish businesses and take up jobs.

Kununurra is now an example of a landscape with 'patchwork agriculture.' There are many different types of farms, with products such as melons, cucumber, mangoes, sandalwood, chia, pumpkins and chickpeas.

Throughout the 2000's, Aboriginal people have been closely involved in the planning of a project to develop a new area of farm land in the Ord region, this is sometimes called 'Ord Stage Two.'

The Commonwealth and State governments often describe the continued development of Kununurra's farms and water infrastructure as being important to Australia's food security.

Kununurra is one of the most remote towns in northern Australia, and is located 3214km from Perth.

- Provide students with DAFWA's background reading 'Developing Northern Australia: The Kununurra Example.'

Student activities



Exercise 1

Develop a list of five ways the landscape of Kununurra has been altered in order to establish an agricultural industry. In your response, consider: What are some of the positive and negative impacts of altering the environment to develop new farm lands in Kununurra in the period 1960-2013?

Alteration	Positive impact	Negative impact

Exercise 2

Background reading

Consider the positive impacts of developing new farm land in Kununurra, as part of the Ord Irrigation Expansion project 2010-2013.

Find three articles on the Aboriginal employment generated by this project.

Key words			
Ord irrigation expansion	MG Corporation	Department of Regional Development and Lands (WA)	Ord Stage Two
Leighton contactors	Kununurra	Aboriginal employment	Traditional owner

Develop a short summary from the three articles, covering the following:

- What social issues were addressed by employing Aboriginal people on the Ord Irrigation Expansion Project?
- Consider the evidence: How did the project achieve strong Aboriginal employment outcomes and what did local Aboriginal elders say was the impact of the project on their community?
- Use at least four of the keywords.

Exercise 3

Background reading

Go to The Chia Co website thechiaco.com

Research how the owner and founder, John Foss came up with the idea of growing chia in Kununurra, Australia.

Focus Questions

Question 1: What traits did the farmer John Foss need to have to develop his new business in chia? You may wish to consider:

- If John Foss was originally from the small wheat-growing town of Bruce Rock, what steps did he take before growing chia in Kununurra?
- How did he gain information on chia?
- What part of the world did chia originate from?
- What made Kununurra a suitable environment for growing chia?

Question 2: How does the Chia Company describe the environment where chia is grown and how do they promote sustainability on their packaging and/or website?

Note: Look for the images of Kununurra in this web page and film clip, and take a note of the way the farming of chia is described.

thechiaco.com/products/chia-seed



Chia grown in a trial at the Frank Wise Institute, Kununurra.

Exercise 4

Background reading

Farmers have trialed many different crops in the Kununurra environment.

Read about the climate and soil types of Kununurra. See page 10 of this document: drd.wa.gov.au/Publications/Documents/Ord_East_Kimberley_Development_Plan.pdf (Accessed 27 June 2015)

Find a simple definition of the word cucurbit.

Focus questions

Question 1: Choose two types of cucurbit crops that have succeeded in Kununurra and are currently grown, describing the environmental factors that make the Kununurra region a suitable place to grow these crops.

Question 2: Choose a farming crop that was trialed in Kununurra in the 1970s, 1980s or 1990s, but failed and describe what environmental factors made it unsuccessful at that time?

Student extension activity

Career pathway: Political Advisor

Background reading

In Australia, the State and Commonwealth governments are responsible for planning land developments and supporting new industries. Political advisors conduct research to guide and support politicians to make decisions. They prepare issues papers and summaries to keep a politician informed. They also write speeches and press releases.

Career scenario

Imagine you are an advisor to Australia's Prime Minister.

- The government is about to invest \$10 million into agriculture in Kununurra, by improving the roads.

Write a short 2 minute speech on why Kununurra is a successful farming area and describe some of the skills and talents the farmers have shown in setting up farms in this part of Australia.

Case study

Grow it: 'Developing Northern Australia' the Kununurra example.

In Australia, agriculture can flourish in different forms in many unique places. The Ord region, near Kununurra, is characterised by warm temperatures, red soils and tropical rains. The environment has been altered here to support a growing farming industry. But what is the recent history of agriculture in Kununurra and how was farming established in such a remote part of Australia?





Find Kununurra on the map.



WESTERN AUSTRALIA

Map taken from the STREETSMART® Travellers Atlas of Western Australia
© Western Australian Land Information Authority 2007



Development at Kununurra in the 1960s

During the 1960s the government built an enormous dam, called Lake Argyle, which is around nine times the size of Sydney Harbour.¹ It was opened in 1972. The dam is so huge it has islands in the middle of it. As the dam was developed, the government released 14 000ha of land for farming, and began conducting experiments on the types of irrigated crops to grow there. Back then, many of the crops they tried to grow had limited success, for example cotton and rice. But in the years that followed farmers and scientists experimented with many new crops and new varieties of plants.

Currently a diverse mix of products are successfully grown including mangoes, melons, chia and chickpeas. Indian sandalwood trees are also a common land use on farms in Kununurra. Outside of the irrigation area, beef cattle are grown on large pastoral stations.

For many decades the potential of Kununurra has sparked the imaginations of Australia's politicians. With concerns about water shortages and a drying climate in the southern parts of Australia, the abundance of water at Kununurra presents an opportunity to expand agriculture. The vast fertile land in the north could provide future food to millions of Australian households, and increase the nation's food security.



¹ This is the size of the Lake as describe by DAFWA;
agric.wa.gov.au/water-management/ord-river-development-and-irrigated-agriculture



But what is needed to have a truly large scale agricultural industry in this part of Australia? Here are some issues that our government has been considering in the last 10-20 years:

- Kununurra is geographically isolated. It requires well serviced roads or other transport facilities such as ports so products can be trucked or shipped to Perth and other cities in a fast and timely manner.
- To attract a live-in-town workforce, Kununurra needs to have a high standard of living including entertainment, health and educational services.
- To expand agriculture, researchers are required to explore the viability of new agricultural crops, as Kununurra has challenging climactic conditions.
- Some new industries may need to install processing and/or manufacturing equipment. Refrigeration is especially important in a warm, tropical environment. To maintain this sort of equipment a strong supply of tradespeople is required to provide services.



Planning in the early 2000s

In the early 2000s, the government began to plan what was needed to create more irrigated farmland in Kununurra. They were hoping to release approximately 14 000 hectares of new farms. Their first step was to talk with the local Aboriginal people, the Miriuwoong² and Gajerrong peoples.

The local Aboriginal people had not forgotten the engineering project to build Lake Argyle dam in the 1960s, because the construction went ahead without informing and consulting them. When building the dam at Lake Argyle, the government allowed explosives on rock formations and the flooding of land.

In the process many special and ancient places for Aboriginal people were lost causing a deep sense of injustice and sadness. The government needed to rebuild trust and assure the Aboriginal people that this would not happen again.

In the agreement established in 2005 with the government and a role for the Aboriginal people was established in the approval process to allow the development of new farmlands. The Miriuwoong² and the Gajerrong peoples have helped with the planning of new farms and ensured that their special places would not be negatively impacted by the development.

When the decision was made to go ahead and develop new farms, starting in 2010, the government invested in new roads, irrigation channels to carry water and the clearing of land.

Major construction companies came to Kununurra to do the work, and they were required as part of their contracts to employ and train Aboriginal workers. This created a great sense of optimism and future focus for the local Aboriginal community.

Since the new farm lands have been built there have been many new business activities in Kununurra.

A large Chinese company is planting sugar on some of the new farmlands.

Young Australian farmers such as Matt and Melanie Gray have been able to take up a piece of the new farmland and start building their family business in Kununurra.

Producers like the Gray family send fresh, healthy produce to cities in Southern Australia, using refrigerated trucks along Australia's enormous highways.

Two globally-focused industries are being developed at Kununurra by Western Australian agri-business companies. The Chia Co has developed relationships with Kununurra farmers, who grow this small seed for use in the international health food market.

² There are various ways to spell this word. It is also spelled Miriuwung in some documents.



Another Western Australian business TFS (Tropical Forestry Services), is accessing land in Kununurra to grow sandalwood trees.

The oil from these trees is used as a base fragrance by European perfume companies. It is also sought after for pharmaceutical purposes.

Agricultural business people from around the world have converged on Kununurra, in order to create new opportunities and build the unique and colourful patch-work farms of this region.



Matt and Melanie Gray of Ceres farm. To find out more about their business visit ceresfarm.com.au *Photo provided courtesy of Matt and Melanie Grey 2016.*