2

SUPERVISOR'S USE ONLY

91297

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NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Level 2 Agricultural and Horticultural Science, 2016

91297 Demonstrate understanding of land use for primary production in New Zealand

2.00 p.m. Monday 14 November 2016
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of land use for primary production in New Zealand.	Demonstrate in-depth understanding of land use for primary production in New Zealand.	Demonstrate comprehensive understanding of land use for primary production in New Zealand.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

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Low Achievement

TOTAL 7

ASSESSOR'S USE ONLY

QUESTION ONE: HORTICULTURAL PRODUCTION

ASSESSOR'S USE ONLY

Horticultural land use changes to reflect variations in consumer demand. Some of the changes in land use between 1994 and 2014 are shown in the table below.

	Hectares under cultivation in New Zealand at 30 June		
Product	**1994**	**2005**	**2014**
Apples	15257	10982	8417
Kiwifruit	12174	12071	12081
Wine grapes	7160	24793	33761

Source (extract): Statistics New Zealand

Refer to the table and land use factors such as economic, environmental, technological, social, political, and workforce considerations to answer (a) and (b).

(a) In 2014, New Zealand produced its highest ever yield per hectare of apples, despite the area of land in apple production being the smallest in 20 years.
Explain in detail TWO factors that may have led to this change in land use.

Less avalible land for the apple to grow. Less propularity however the farmers farming are farming to a high standard and quality.

(b) Justify traditional, current, and likely future horticultural land use in New Zealand.
In your answer, refer to the table and the land use factors on page 2, to:

- explain changes in land use between 1994 and 2014
- explain, in detail, what this might mean for current land use
- predict how this information might affect future land use.

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Wine was the lest popular in 1994, however now it has the biggest hectares under cultivation in New Zealand now. What this might mean for current land use is that were a going to have a very large amount of hectares cutivied by wine grapes. This means that one of our main sorces of income/export in the farming area will be wine grapes.

2

QUESTION TWO: LAND USE CONFLICTS

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Horticulture New Zealand is calling for protection of land classified as highly productive: "Only 5% of New Zealand soils fall into this category," it says, but 1.8% of this has been lost to less productive uses in the last 10 years. "If councils had any regard for the special characteristics of high production land they would then look at the effects of siting new housing developments there."

Source (adapted): *NZ Grower*, 2015, Vol 70, No 6, p.13.

Councils need to consider the economic, environmental, and social effects when siting new housing developments on highly productive land.

Discuss the implications for land use if councils do not consider these effects.

In your answer, using TWO land use factors:

- explain why there is a conflict between horticultural land use and residential use
- explain, in detail, how traditional land use has influenced the tension seen in current land use
- compare and contrast the implications if a council does not consider highly productive land when changing horticultural land use to residential land use.

residential areas are taking ~~of the~~ over some of the prime horticultural land use areas. This is improving social factors as housing is and residential areas are etspanding how it has a negative affect on environmental and potenial economic factors. This is because of main New Zealand economic return is in our ~~market~~ horticultural industry. If the council doesnt concider the highly productive land when converting them it could have a large negtive impact ~~of~~ on New Zealand as a hole. Traditional ~~land and current land use may develop~~ land use has a influence some tension on current land use as some of the values and practices have been changes and may have caused tension. There is a huge

ASSESSOR'S USE ONLY

change on the variation of farming but also the practices that have been taken place. There is a lot more chemicals being used then there was in the ~~t~~ traditional farming which can cause some impact on the soil and other environmental factors.

2

QUESTION THREE: EL NIÑO

ASSESSOR'S USE ONLY

New Zealand is often affected by the El Niño weather pattern, which can lead to drought.
El Niño is a set of warm conditions in the central Pacific that bring dry weather to the east of New Zealand and rain to the west, affecting agricultural and horticultural production.
The NZ Institute of Economic Research (NZIER) said:
The 2015–2016 summer El Niño would not be enough to tip the country into a recession, as was the case in the past El Niño in the 1997–1998 summer.
Source (adapted): *New Zealand Herald*, 22 September 2015; article by Jamie Gray.

Source: http://www.stuff.co.nz/business/farming/sheep/67324546/sheep-and-beef-are-doing-it-tough-in-drought

Justify, with reference to traditional and current land use, why NZIER made the above statement. Take into account land use factors such as economic, environmental, technological, social, political, and workforce considerations.

In your answer, explain in detail, using TWO land use factors:

- how traditional land use in 1997–1998 may have been affected by the El Niño weather pattern
- how current land use may not be as significantly affected by El Niño.

1997-1998 may have been affected by the El Niño weather patten more so due to traditional land we for many reason. One main reason could be due to the lak of the shelter and products wed to make the grass grow. Current land use may not be effected so much due to the conditons as they are more prepared and have more technology to ensure that their animals are still

being fed and maintained to a good level. Also current land we have is able to have easy access to alternative substances to feed their animals, industry more shelter.

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3

Extra space if required.
Write the question number(s) if applicable.

QUESTION NUMBER

ASSESSOR'S USE ONLY

91297

Annotations

Low Achievement exemplar 2016

Subject:	Agricultural and Horticultural Science	Standard:	91297	Total score:	7

Q	Grade score	Annotation
1	2	a) The candidate did not describe the effect on the yield produced from less available land. b) The candidate was able to make a prediction using the given data.
2	2	The candidate recognised that there are a variety of factors to consider without expanding on any of them.
3	3	The candidate was able to describe the effects of lack of shelter and the need to have supplementary feed available.

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2

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Achievement

TOTAL 10

ASSESSOR'S USE ONLY

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Explain in detail TWO factors that may have led to this change in land use.

The area of land in apple production being the smallest in 20 years would because more people have moved into that areas so the growing area has shrunk for the apples. The environmental factors for the apples must have been perfect in 2014 to get a higher yield per hectare, Lots of sunshine with moderate ~~minimal~~ rainfall.

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The changes in land use between 1994 and 2014 are that more people decided to grow more hectares of grapes. In 1994, 7,160 of grapes were being grown to 2014 where 33,761 grapes have been grown pre hectare. Kiwi haven't changed in the land use much from 1994 to 2014. The amount of apples area in New Zealand has shunk from 15,257 pre hectare in 1994 to 8,417 in 2014. Because horticultural need different temperatures to grow properly, the temperature may have changed for these fruits to increase or decrease the amount that is being grown. The grape production will keep increasing in the land use because NZ has some perfect places where grapes get enough sunshine hours (Northland Hawkes bay, Marlborough) to produce well. Apples will keep shinking in the amount of hectares being used for growing apples unless the yeild of apples keeps strong then people will want to get involved and get an income in selling apples. The amount of kiwifruit being grown in NZ may shink ~~as the numbers keeping~~ or stay the same.

3

QUESTION TWO: LAND USE CONFLICTS

ASSESSOR'S USE ONLY

Horticulture New Zealand is calling for protection of land classified as highly productive: "Only 5% of New Zealand soils fall into this category," it says, but 1.8% of this has been lost to less productive uses in the last 10 years. "If councils had any regard for the special characteristics of high production land they would then look at the effects of siting new housing developments there."

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- compare and contrast the implications if a council does not consider highly productive land when changing horticultural land use to residential land use.

There is only 5% of NZ's soils that are highly productive. Horticulture NZ has lost 1.8% of this ~~soil~~ highly productive soil in the last 10 years to less productive uses. There is conflict between Horticulture NZ and councils because councils are not protecting land that is classified as highly productive. Councils are selling land that has highly productive soil to people who are not using it productively. Horticulture NZ could be using it for properly fruit ~~and~~ or vegetables that could grow to be the best tasting fruit/vegetables in NZ and because they have such a nutrient rich soil to get the best yeild. Instead they are selling the land to people who are not using this land correctly are affively, so are not getting any income for this great soil. The environmental affects of not using the soil correctly is having less nutrient rich

soil in NZ and the effects are people won't buy the product because it hasn't had the nutrient rich soil so it has grown as well and doesn't taste as nice.

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QUESTION THREE: EL NIÑO

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In your answer, explain in detail, using TWO land use factors:

- how traditional land use in 1997–1998 may have been affected by the El Niño weather pattern
- how current land use may not be as significantly affected by El Niño.

Back in 1997-1998, ~~the~~ NZ would have been affected by El Niño because of the less amount of irrigation around. Since 1997-1998, the technological has grown and developed. Now we have irrigation pipes and irragtors for sale for anyone. The cost of an irragtion system is high but the outcome is definitly better than not ~~because~~ being able to water, as production rates will fall. Now we have technology that can predict if we ~~ha~~ are going to have a dry summer or wet winter, so the farmers can be

prepared for the worst.
NZ has had enough rain in our winter so if there was an unexcepted drought, then irrgation would be able to keep production rates going.

ASSESSOR'S USE ONLY

3

Annotations

Achievement exemplar 2016

Subject:	Agricultural and Horticultural Science	Standard:	91297	Total score:	10

Q	Grade score	Annotation
1	3	a) The candidate gives a reason for the fall in land area and a reason for the increase in yield. b) The candidate is able to identify changes in fruit production and offer vague reasons why, before making a prediction for future levels of grape production.
2	4	The candidate recognises that there is pressure on the small amount of productive land available. They are also able to predict the possible effect on the New Zealand economy.
3	3	The candidate recognises the importance of irrigation and the improvements made since the last El Nino.