

93401



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SCHOLARSHIP EXEMPLAR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

Scholarship 2015 Geography

9.30 a.m. Thursday 19 November 2015

Time allowed: Three hours

Total marks: 24

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

Pull out Resource Booklet 93401R from the centre of this booklet.

Carefully read the instructions on page 2 of this booklet.

Answer ALL three questions in this booklet. Each question is worth 8 marks.

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 2–24 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

INSTRUCTIONS

The materials in Resource Booklet 93401R will enable you to become familiar with the theme and contexts of this examination: **Agriculture**.

Your answers to ALL three questions must incorporate a wide range of case studies from around the world, as well as information and ideas BOTH from the materials provided in the resource booklet and from your studies in geography.

Note: Key ideas should not be repeated in your answers to different questions.

Space for planning has been provided on pages 4, 10, and 16 of this booklet that will help you prepare your responses. These notes will not be marked. The questions on page 3 are repeated on their respective planning pages.

Begin your answer for Question One on page 5, for Question Two on page 11, and for Question Three on page 17.

QUESTION ONE (8 marks)

Discuss the importance of agriculture.

Your answer must include and refer to relevant, effective, original visuals.

Use page 4 to plan your ideas, and begin your answer to Question One on page 5.

QUESTION TWO (8 marks)

Justify the most significant challenges facing the agricultural industry today, with reference to different perspectives.

Your answer must include and refer to relevant, effective, original visuals.

Use page 10 to plan your ideas, and begin your answer to Question Two on page 11.

QUESTION THREE (8 marks)

Critically analyse the extent to which the future for agriculture in more economically developed countries (MEDCs), is similar to that for agriculture in less economically developed countries (LEDCs).

Use page 16 to plan your ideas, and begin your answer to Question Three on page 17.

QUESTION ONE (8 marks)

Discuss the importance of agriculture.

Your answer must include and refer to relevant, effective, original visuals.

PLANNING

Food

Employment

GDP

Trade

MET's / LEDC's

Modernisation → technology

Growing population → Food shortages/
security.

Begin your answer for **Question One** here:

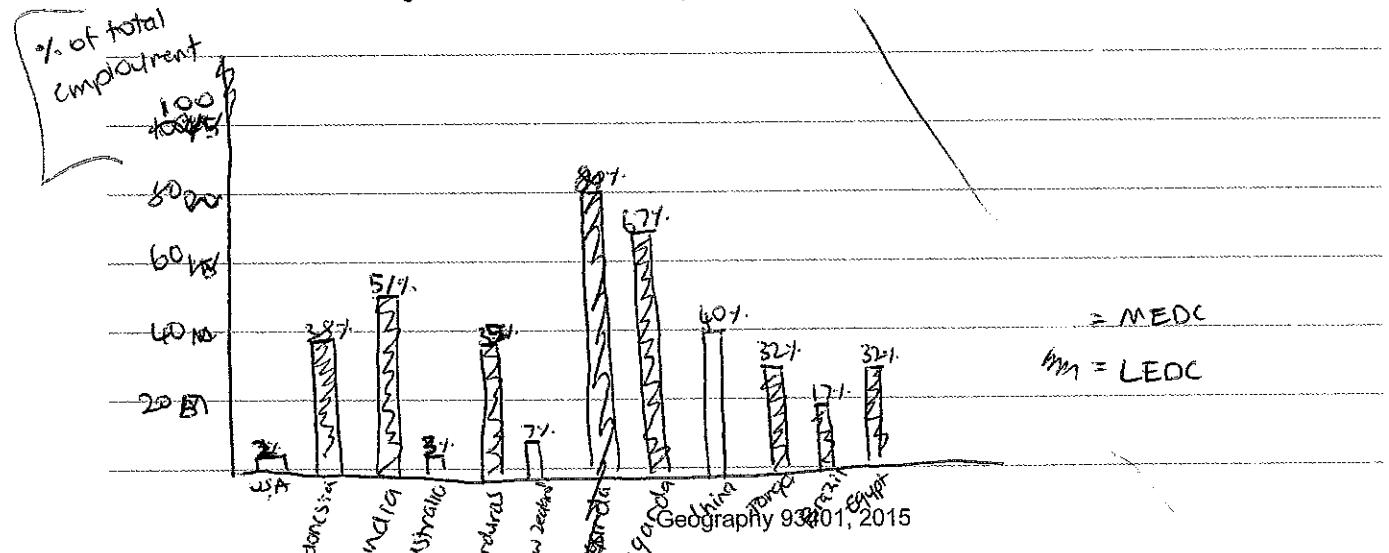
Nearly 90% of the world's food supply comes from agriculture, both crops and animals. Although in the past agriculture was a much larger industry, ~~with~~ with 85% of the global workforce in 1800 being involved in agriculture, it still remains incredibly important to this day as agriculture is relied on for our food production. Agriculture still accounts for millions of jobs and contributes significantly to countries GDP's, particularly in less economically developed countries (LEDCs). With widespread urbanisation and the shift towards service based economies it is easy to see how people's focus has shifted away from agriculture. However with the world's increasing population, ~~and the~~ the declining availability of arable land, ~~and~~ soil degradation and climate change looming, food insecurity ~~is~~ is going to become a prominent ~~issue~~ issue, ~~partic~~ especially in LEDC's.

The world's per capita food consumption has increased dramatically over the past 50 years, and is expected to increase even further. Agriculture is important as it provides humans with the nutrients that we need to survive. ~~This~~ Crops grown or animals reared are either eaten locally ~~or~~ or exported to countries ~~who~~ who are unable to produce enough food on their own to sustain their population. Despite modernisation and technological advances agriculture is relied on just has heavily for food production as it always ~~has~~ has been. As societies such as China have become richer they have

began to demand higher quality and richer foods such as fed meats so the sector has adapted to suit such needs. Agriculture is so important because it produces something that humans always have, and always will, need to survive. Prior to globalisation people had to produce ~~entirely~~ all of their own food however nowadays trade enables people to share their produce making it possible for countries with unsuitable climates for certain crops to have access to them year round. It has also meant that specialisation is possible, so countries can become efficient in the production of a particular agricultural product, such as dairy dairy for New Zealand, (countries) such as African countries are battling food insecurity, so greater agricultural production is going to be required to meet the growing need. As said by Brenda Schoepp 'Every day, three times a day, you need a farmer.'

Agriculture is also ~~employ~~ important due to the employment that it generates across the globe

Fig 1(a). Employment in agriculture in %



As shown in figure 1(a) agriculture makes up a significant percentage of total employment particularly in LEDCs, with the exception of China which still has a large rural population. 34% of the global workforce is engaged in agriculture, a testament to its importance. Millions of people rely on agriculture for not only their food needs but also to provide an income. Without it they would be unable to support themselves or their families. It's the world's largest provider of jobs, employing half the population in approximately 50 countries. China and India together contain 59% of the world's farms, showing why 57% of employment in India is agriculture based and 40% in China as shown in Fig 1(a). Michael Hailu said that 'many young people are leaving the rural areas... as they do not see much of a future in the agriculture industry' In less developed countries the reliance on agriculture for employment is heavy however people are moving away from it in search of a brighter future, despite the fact that agriculture is only going to become more and more necessary to sustain the ever increasing world population. Large percentages of the world's land is used for agricultural production, with deforestation occurring in order to accommodate more farmland. However the amount of arable land available to us is decreasing as a result of overuse of the land without care for sustainability.

Agriculture also makes up 22% of global GDP. Agriculture is also vital for the world's economy, making up a significant amount of countries' GDP's across the globe, one's being more concentrated towards LEDCs. Every country in the world must either produce agricultural products for consumption or import food from other countries, so it is incredibly important to the economies of countries. Some countries, such as NZ, can be extremely affected by changing world prices for food, particularly countries heavily reliant on trade.

To a lesser extent agriculture also produces products such as cloth, leather, wool, jute and cotton which are required to make clothing, blankets and more. These are also things that people need to ~~survive~~ as everyone wears clothing.

Therefore agriculture is incredibly important for the world. Everyone needs food, and it is agriculture that provides us with more than 90% of it. Without agriculture there is no way that humans would be able to sustain themselves as they require. Agriculture also provides a livelihood for a large amount of people, predominantly in LEDC's, making ~~up~~ up 34% of the global workforce.

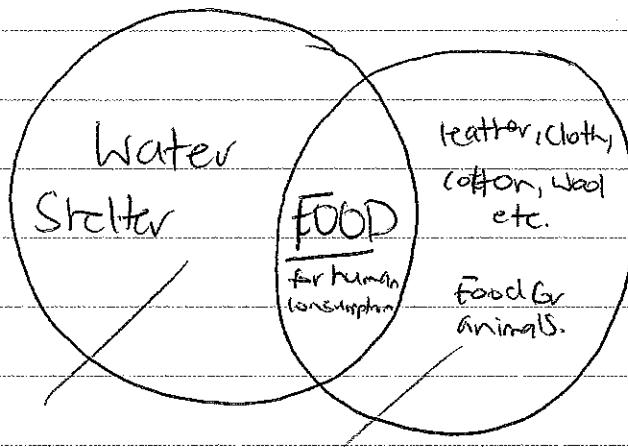
It's vital to the economics of many countries and world trade is also a factor.

Venn diagram

Fig 1(b) showing the importance of agriculture to human survival.

Human needs
to survive

Agricultural
production



J

6
18

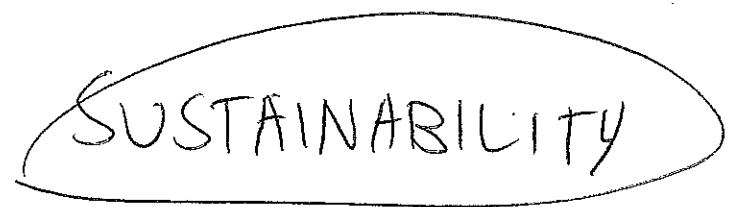
QUESTION TWO (8 marks)

Justify the most significant challenges facing the agricultural industry today, with reference to different perspectives.

Your answer must include and refer to relevant, effective, original visuals.

PLANNING

-tat

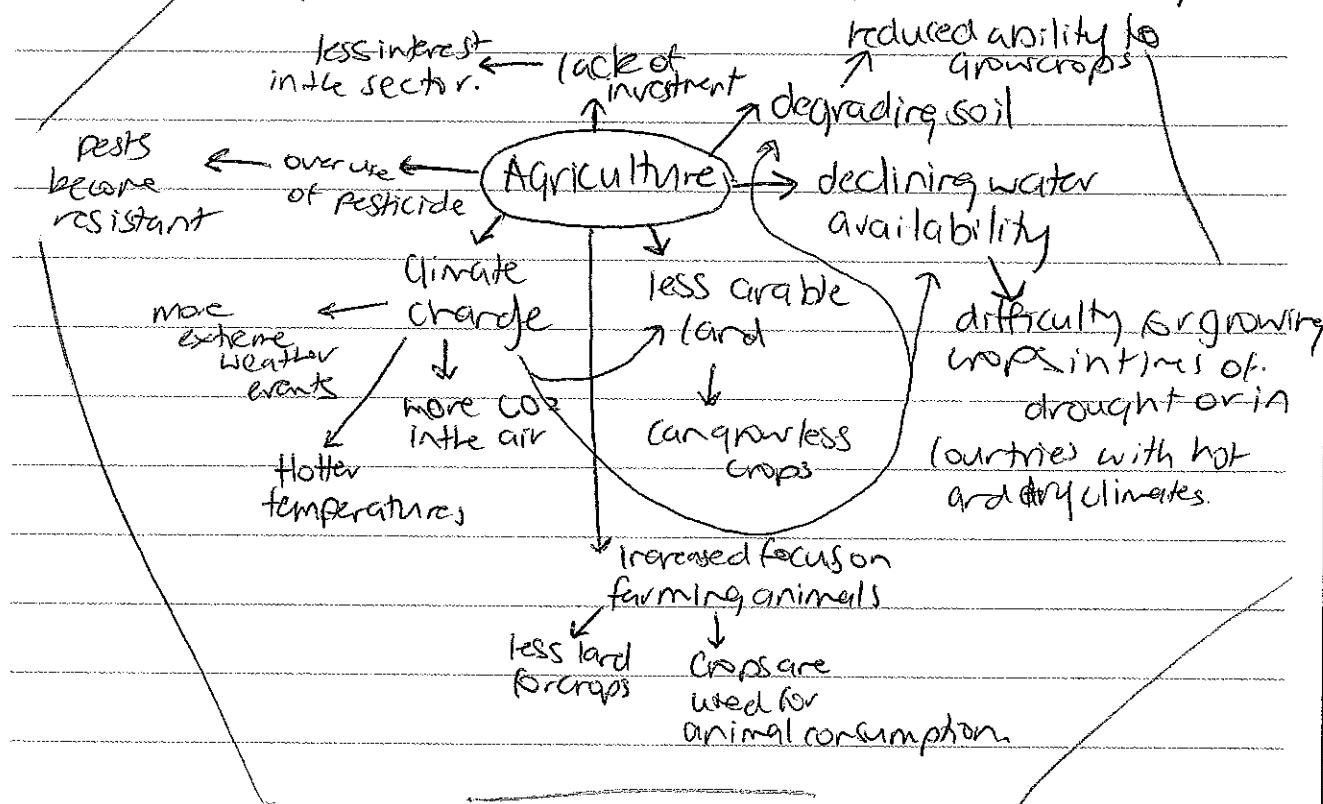


- Lack of arable land.
- Degrading soil
- Water availability
- Rising population.
- Declining investment in the agricultural industry.

Begin your answer for **Question Two** here:

Agriculture today is as important as ever in terms of food production for the global population. As the population is set to increase, agriculture faces significant problems with declining land availability, less available water, the possibility for climate changes to occur, and the lack of a concentrated effort to improve the industry. Unsustainable practices of the past have meant that today agriculture is facing serious issues.

Fig 2(a) Problems for the agricultural industry.



Soil degrading has been recognised as a serious issue today by the UN, who designated 2015 to be the International Year of Soils (IYS). Ansoff described soil as the stomach of the plant, and is one of the 4 elements required to sustain human life (soil, water, air, sunshine). Unsustainable use of soil, expanding cities, deforestation,

Overuse, pollution and overgrazing have declined but our soils in significant danger, and will mean that ~~less~~ smaller yields will come from crops, rather than the greater yields that we need. The UN's perspective is that soils are incredibly important and was therefore this year's focus. The Food and Agricultural Organisation (FAO) have shown their commitment to supporting agriculture, with a specific focus on LEDCs. ~~These~~ These organisations (UN and FAO) have a global perspective and aim to help improve the standard of living for people all over the world. The UN especially has members from both MEDCs and LEDCs. ~~although it is likely the people~~ Soil degradation is a serious issue facing agriculture therefore as it declines our ability to grow crops hard could in turn result in the global reduction of agricultural supply. In order to increase production soil must be cared for and used in a sustainable way. It is the perspective of the UN and the FAO that this is one of the most pressing issues facing agriculture today.

A further problem is a reduction of per capita arable land. In 1950, when the world population was 2.8 billion there were 5100 sqm of arable land available per capita, in 2000 the world's population was 6 billion and 2700 sqm were available.

By 2050 as the population is expected to increase further to 9 billion¹ only by 2000 sqm of arable land per capita of the world's population.

Overuse of land, pollution, urbanisation and degrading soil means that less and less land is available to us constantly. This means that less crops will be able to be produced. As diets have shifted away from basic grains and more towards proteins less arable land has been used for cropland and more for pasture, as shown in figure 5 of the resource booklet. This further limits the ability of people to produce crops.

In some countries innovative solutions have been created, such as terraced fields in Vietnam and Peru in order to make use of mountainous land, and Greenhouses in Maine, USA, which enable year-round crop growth despite the seasons. However from the perspective of the LDCs, African countries in particular, these solutions are not always feasible as money requires investment and technology not available to their rural populations.

and agriculture specifically

A major issue facing the world is climate change. Climate change threatens our ability to ~~and~~ produce crops as temperatures rise, sea levels rise, and the CO₂ levels in the air increase. The possibility also exists for climate change to result in an increased number of extreme weather events such

as floods and droughts. All of these factors will have serious negative effects on the agricultural industry, possibly limiting its ability to produce food. It's the perspective of some countries' governments, such as the USA, that climate change may not be an actual thing. Some scientists either do not believe in it or suggest that the effects would be positive rather than negative for global agriculture. Therefore it is debated whether or not climate change is a significant issue facing agriculture. However in reality it is ~~causing~~ areas a significant contributing factor to other issues facing agriculture (see fig 2(a)). Governments are becoming increasingly aware of the very real ~~issue~~^{danger} that climate change poses, and it is set to be a topic of discussion and future meetings of world leaders and the UN.

Another major challenge facing agriculture is declining investment and interest in the sector. As our economies become more advanced and westernised, the tend to move away from agricultural production. Urbanisation has meant that now the majority of the world's population live in cities, with the focus shifted towards service-based industries instead of agriculture. The agricultural industry is not seen to be one that holds the potential for future profits so investment is decreasing, and the amount of people employed in

the agricultural industry as well as its contribution to countries' GDPs has decreased dramatically since 1950. This means that even though we require more food, no significant changes have been made to increase production but instead people are moving away from the industry.

From the perspective of most scientists and international organisations such as the UN and FAO, agriculture is facing serious challenges such as degrading soil and climate change. It is unsustainable ways of the past that has resulted in these problems. However the perspective of some governments and much of the western population is that these problems are not as bad as we think and do not require urgent attention.

Agriculture is required to sustain the world's population, however the issues listed as well as more, combined with the increasing world's population food insecurity is likely going to occur, especially in LEDCs. A concentrated effort is required from governments across the globe in order to combat these challenges however the likelihood of this occurring at this point in time is still low.

 In 1950 for instance 67% of worldwide employment was in agricultural compared to only 35% in 2010, the percentage having almost halved.] Geography 93401, 2015

QUESTION THREE (8 marks)

Critically analyse the extent to which the future for agriculture in more economically developed countries (MEDCs), is similar to that for agriculture in less economically developed countries (LEDCs).

PLANNING

MEDCs

Modernisation

Technological solutions

LEDCs

Begin your answer for **Question Three** here:

the need for increased agricultural production is only going to become more prominent in the future. This means that agriculture in both MEDCs and LEDCs will have to adapt to the challenges it faces and somehow increase yields to sustain the earth's population. This will look similar in MEDCs and LEDCs to the extent that more modern and advanced solutions may be required however it is MEDCs that will have the ~~capac~~ ability to invest in technological solutions, whereas LEDCs will be ~~capable~~ unable to advance on their own.

Currently LEDCs are much more reliant on agriculture than MEDCs in terms of employment and ~~the amount~~ of its share of countries GDP. For instance in Australia agriculture makes up 3% of total employment and 2% of their GDP (2010) whereas in Uganda the corresponding figures are 67% and 26%. More than 52% of the workforce in Africa is employed in agriculture compared to a mere 4.2% in MEDCs. However as more governments of MEDCs begin to realize that a focus on agriculture is required to enable increases in production to sustain the population, it is likely that investment in this sector will occur. As there is ~~demanded~~ demand for more farming in the future, it is

predicted that MEDCs will rise to meet this demand within their own countries as there are profits to be made within this sector. This means that in MEDCs the trend of declining employment in the agricultural sector may change and see slight increases. Once people in years to come realise the importance of agriculture to our lives it is hoped that people in MEDCs will work to address the issue.

However due to the wealth of MEDCs it is not likely going to be them that ^{will} truly suffer from the effects of not enough food. It is the poor nations in Africa, South/Central America and South East Asia that will be faced with food insecurity, as they often rely on imported food to sustain them (Figure 10) yet ~~these~~ this may become unaffordable as it becomes more scarce. Like MEDCs, these countries will have to adapt in order to increase their own food production, however unlike MEDCs they will not have the funds required to do so. Some countries such as those in the middle east and Northern Africa have unsuitable climates for crop growth so will ~~be~~ likely be unable to increase their production significantly. The only way for these countries to increase their produce is for investment to come from MEDCs. Help in the form of specialists and others with an advanced knowledge of agriculture need to

go to these places in order to teach the people sustainable and efficient farming practices. Organisations such as World Vision already do this to an extent, but the future of agriculture in LEDCs is reliant on the help of MEDCs.

As former British Prime Minister Gordon Brown said "we must then build a proper relationship between the richest and the poorest countries based on our desire that they are able to feed for themselves with the investment that is necessary in their agriculture." If LEDCs can be helped, then it would be the hope that one day they would be able to support themselves.

Another way in which the future of agriculture in MEDCs is different to that of LEDCs is that more technological advanced solutions are feasible in MEDCs. Already technology such as GPS and harvesting machines have increased productivity and efficiency in farms in MEDCs. They have made farming easier but also more productive. These sorts of innovations will only become more prominent in MEDCs in order to combat global food shortages in the future. Genetically modified foods and other foods may also be further researched and used in order to create ^{resilient} crops that produce greater yields from less land. The use of hydroponics and urban-based farmin

may also play an important role in the future of agriculture.

However in LEDCs these sorts of solutions are not possible. They do not have funds, education nor ability to have such technology and use it, nor will they be able to create innovations required. Low-tech solutions will be the answer in LEDCs, such as basic irrigation systems which can be used to turn previously unusable land inland that can be used for crop growth. With the help of MEDCs, LEDCs will be able to increase their production but this will look different from the high-tech solutions employed in the richer nations.

Therefore the future of agriculture in MEDCs looks similar to that of LEDCs in the way that they will need to be increased towards a concentrated effort made to increase production. However in MEDCs this will look like high-tech solutions whereas LEDCs will be reliant on the help of MEDCs in order to advance their industry and combat food insecurity.

Flowchart of the future agriculture
Fig 3(a) MEDCs and LDCs face food insecurity due to increased price of food

MEDCs → Investment and assistance from MEDCs

Invest in agriculture

Create innovative food solutions

Increase focus on agriculture to problems faced by agriculture

Increase agricultural production

Increase education in LDCs

Find low tech solutions

Increase efficiency and productivity

No food insecurity

Candidate argues that urbanisation and service industry has made agriculture less important in MEDC's but ~~but~~ agriculture remains important in LEDC

Candidate refers to the resource booklet.

Page 5

Logical development and clarity of ideas presented.

Page 6

Candidate uses statistics from the resource booklet and creates an original visual. Refers to it ~~is~~ over the page.

Reference to resource booklet case study material.

Argument developed here - analysis and critical thinking.

Page 7

Resources from the booklet used in a generalised way

Page 8

Planning pages used. List of challenges - most significant challenge circled.

page 10

Most significant challenge identified.

Written answer is enhanced by relevant, original and effective visuals.

Candidate includes a diagram - original visual.

Page 11 ↗
↖

Candidate refers to different perspectives regarding challenges facing agriculture.

Integrates and applies a range of different perspectives to present a supported argument.

↗ ↗
↖ Page 12

Candidate justifies positions of different groups and the challenges they believe are faced by the agric. industry.

Referring to material in the resource booklet

p13

application of knowledge, and ideas ^{skills} to complex situations.

Identification of different perspectives and justification of their positions.

integration and synthesis of ideas.

p14

Critical analysis

Analysis and critical thinking

p15

Analysis continues throughout the next two pages.

p18

analysis and critical thinking

p19

Justification of the argument.

Critical thinking

p20