

Write your name here

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**Edexcel GCE**

Centre Number
1 4 4 2 7

Candidate Number
5 3 9 7

# Geography

## Advanced

### Unit 4: Geographical Research

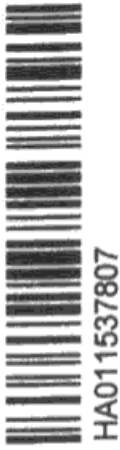
Wednesday 23 January 2013 – Afternoon  
Time: 1 hour 30 minutes

Paper Reference  
**6GE04/01**

You do not need any other materials.

Total Marks

**68**



### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **ONE** question only.
- Answer the question in the spaces provided – *there may be more space than you need.*

### Information

- The total mark for this paper is 70.
- The quality of your written communication will be assessed in your responses – *you should take particular care on this question with your spelling, punctuation and grammar, as well as the clarity of expression.*

### Advice

- You are expected to write a report style essay with clear sections and referencing.
- You are advised to use the first page of the answer space on page 3 to plan your answer.

Turn over ►

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**PEARSON**

**Answer ONE question only.**

**It is essential you use your own research to support your arguments.**

**OPTION 1: Tectonic Activity and Hazards**

- 1 Assess the significance of plate margins in the spatial distribution of tectonic hazards.

**(Total for Question 1 = 70 marks)**

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**OPTION 2: Cold Environments – Landscapes and Change**

- 2 Assess the importance of the values and attitudes of interest groups in determining how different cold environments are used.

**(Total for Question 2 = 70 marks)**

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**OPTION 3: Life on the Margins – the Food Supply Problem**

- 3 'Currently, drylands are the areas most vulnerable to the threat of food insecurity.' Discuss.

**(Total for Question 3 = 70 marks)**

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**OPTION 4: The World of Cultural Diversity**

- 4 Evaluate the relative importance of the different factors which contribute to the development of cultural landscapes.

**(Total for Question 4 = 70 marks)**

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**OPTION 5: Pollution and Human Health at Risk**

- 5 To what extent is health risk strongly related to the level of economic development?

**(Total for Question 5 = 70 marks)**

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**OPTION 6: Consuming the Rural Landscape – Leisure and Tourism**

- 6 Assess the reasons why different strategies are used to manage leisure and tourism in rural areas.

**(Total for Question 6 = 70 marks)**

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Indicate which question you are answering by marking a cross . If you change your mind, put a line through the box  and then indicate your new question with a cross .

Chosen Question Number:

Question 1

Question 2

Question 3

Question 4

Question 5

Question 6

10 SecAD

15 SecAR

20 SecAA

14 SecAC

9 SecAQ

You are advised to use this page to plan your answer and then begin your answer on page 4.

PLAN

① INTRO - D - food insecurity  
drylands

\* vulnerable

Diagram of factors - food insec.

structure - Drylands v. Somalia

Niger

Drylands NV. Australia

Non Drylands - Haiti

~~Myanmar~~  
Myanmar

② Methodol.

③ Analysis SEM - gov, Drought, POP.

N - loc. + POP - Millet + Sorghum.

A - pockets - Baseline, 4th.

H - WB - food prices, earthquake II - 90% SH crops.

M - cyclone may 08 - rats. rice + maize

dis - 100,000

killed 40,000

4000+

④ conclusion



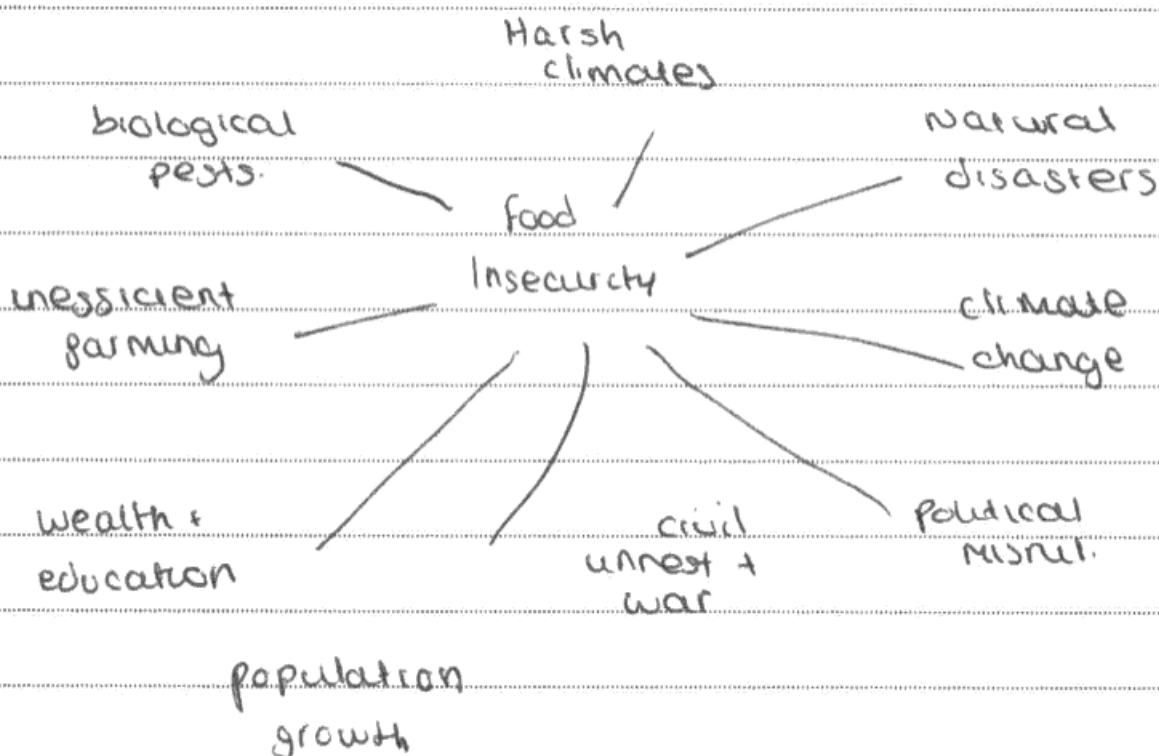
## 1. Introduction.

The FAO defines food security as "when people don't have access or availability to good safe and nutritious food in order to lead a safe and active lifestyle." There are two types of food insecurity

1) Chronic - long term sustained period of time without the amount of food needed to meet minimum food requirements e.g. poverty. 2) Transitory - short term temporary period where there is a sudden drop in the access to food eg. crop fail in a certain year. Food

insecurity is a global issue with many complex and interrelated human and physical factors, some which can be seen in the diagram below.

Figure 1 : factors contributing to food insecurity



Drylands are an example of a harsh climate. Dunn et al. defines them as "areas with ~~low rainfall~~ in which there are low rainfall amounts and high evapotranspiration potential." Dryland areas cover around 41% of global land and are home to almost 37% of the world's population. Some Drylands are more vulnerable to food insecurity meaning they are exposed to the possibility of physical or environmental harm or attack.

I am going to split this report up into 3 main sections. The first I will look at drylands that are vulnerable to food insecurity e.g. Somalia and Niger. The second I will look at ~~an~~ Australia which is a dryland area that is not food insecure and the third section I will look at non-dryland areas that are also vulnerable to food insecurity such as Haiti and Myanmar. All these examples have both human and physical factors that are contributing to their level of vulnerability.

## 2. Methodology

For this report I have used a ~~wide~~ vast range of sources. ~~The first~~ I chose to use the book "Edexcel ~~Ge~~ A2 Geography" by Dunn et al. I know



This is a reliable source as it was written by a geographer and would have been peer assessed by other professionals before being published. The second book I ~~has~~ used was the AS/A2 Geography "Food and famine" by Michael Wetherick who has had over 20 years experience as a chief examiner. The book is full of contemporary relevant case studies. I has used Online Geojiles. The first was titled "Causes of desertification" by John Rutter. The second was "Global Hunger - an update" by Gareth Nagle. Due to the fact these are licenced articles which would of been reviewed by other professionals before being published, I know these are a reliable source. I got some information of a BBC online article written by Mark Kinsky who is a science and environmental reporter, so I know that, most probably, the information has been backed up by detailed research however, I still need to consider the fact that this article could be biased. Finally I used information from the World Health Organisation online website. I know that anything on here would have come from academic or scientific sources and research and is therefore a good, useful source to use.



### ③ ANALYSIS.

3.1. ~~Somalia~~ Dryland Areas that are vulnerable to food insecurity.

#### 3.1.1 Somalia.

Somalia is a LDC situated in the Horn of Africa. ~~It is~~ According to the Maplecroft Index (a concept looking at the FSI (Food Security Index) of each country depending on ~~the nutrition and health levels and the~~ 12 key factors), Somalia is within the top 10 most food insecure countries in the world. This is due to a number of different causes. In 2006 it was released that 2.1 million people were in ~~Human~~ ~~causes include~~ urgent need of food aid and in south Somalia 1.7 million people were reliant on food aid.

Human factors ~~to~~ contributing to this include there being no effective government since 1991 when the dictatorship was overthrown. The Alshabab now control many rural areas. They often ~~for~~ intercept food aid and cause it to be unevenly distributed. In 2011 they rejected food aid



and could be using this as a weapon to help with civil war and cause famine. Another factor is the rapid growing population that can't be controlled. Somalia has one of the highest birthrates in the world at 44.24/1000 per year. This is due to lack of contraception or lack of access to it. So growing population means more mouths to feed.

Physical factors include drought and a very hot climate. The horn of Africa has the worst drought in 22 years in 2006 ~~is~~ severely affecting Ethiopia and Somalia. Crops were unable to grow meaning a loss of income and nomadic farmers who owned cattle found that their cattle were unable to survive meaning a loss of income and also loss of support for those communities depending on it.

### 3.1.2. Niger.

Niger is a country in West Africa. In 2005 it was very unlucky to experience two natural disasters at the same time - biological pests of locusts invasion and overpopulation.

At the end of a rainy season in 2004 there was





a huge huge invasion of locusts that destroyed ~~the huge~~ large areas of grassland and crop growth. Not only this but due to lack of rainfall Millet ~~crop~~ and sorghum crops failed to finish growing meaning a huge loss of crop yields - even more so than the locusts caused. This caused severe local food insecurity and meant a demand for food aid. This occurred in Northern Niger.

Along side this problem down in south Niger ~~here is~~ which is a more watered and wealthy region, there was rapid population growth.

The small ~~off~~ agricultural plots of land were getting smaller due to population pressure and many farmers were beginning to sell use crops for exports in conjunction with the growing, neighbouring Nigerian market. Smaller, poorer farmers who couldn't afford this had to sell their land.

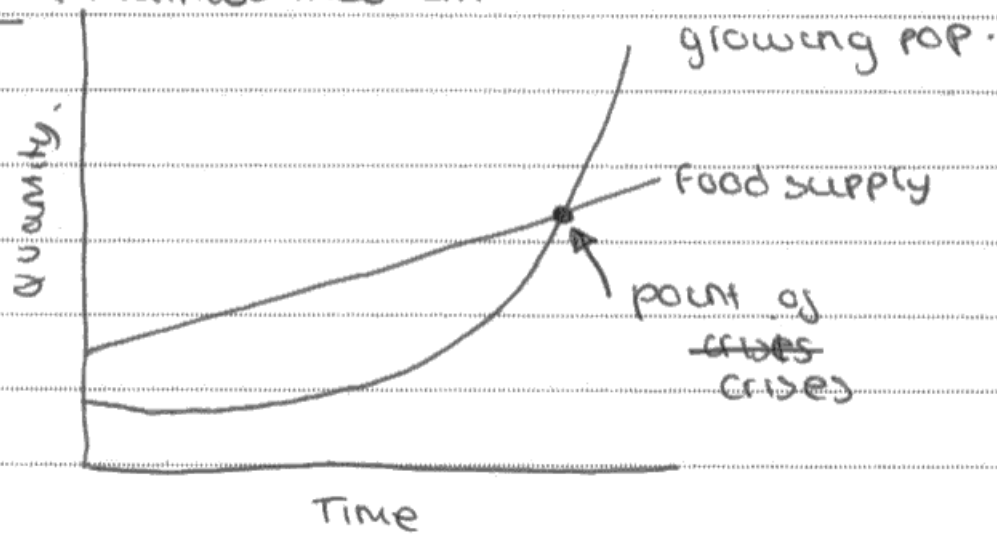
### Sub 3.1.3 Malthus theorem.

It could be argued that both these examples support Malthus' theorem that ~~a~~ with a rapidly growing population often food supply cannot reach the demand causing famine



of civil war

Figure 2: Malthus' theorem



### 3.1.4 sub-conclusion.

From these two examples we can see that the food insecurity is a cause of both human and physical factors however, I think that they are worsened by the fact that they are dryland areas with a harsh climate.

### 3.2 Dryland area that is not food insecure.

#### 3.2.1 Australia.

Australia is a dryland area however, it is not food insecure. According to Maplecroft Index it is the 4th most food secure country in the world with only 4% or less being



undernourished. The reason for this is that they don't rely on agriculture or farming for their income, they have alternative sources e.g. tourism, global trade.

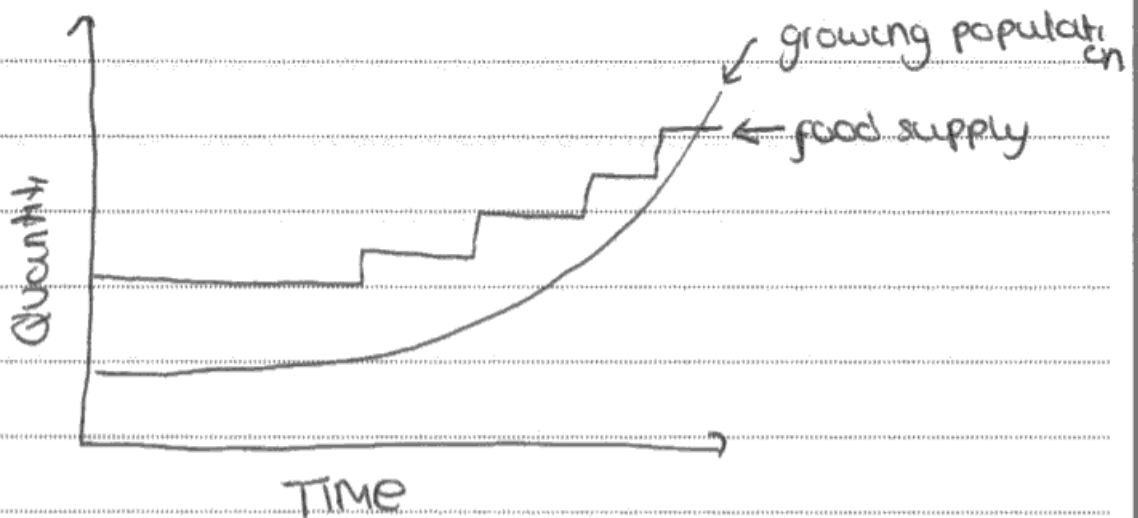
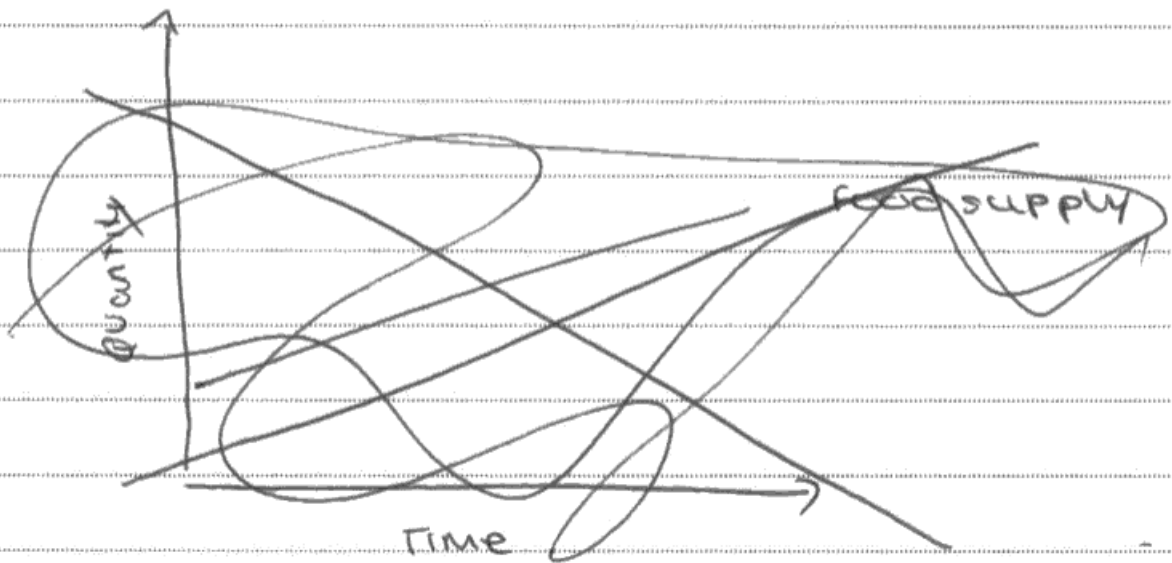
Although they have pockets of food insecurity, they are a significant food exporter with surplus levels of exports than imports. ~~One~~ ~~scheme~~ food and livestock exports than imports. ~~There~~ one successful ~~st~~ scheme they have is the Snowy Mountain scheme where water is collected from the high mountains and redirected into rivers that irrigate farmland ~~to~~ and supply water to communities. However, if there is low rainfall or irrigation levels it can cause the problem of salinisation.

### 3.2.2 Baserup.

Australia could be an example of a country that supports Baserup's theory that a growing population could improve food supply systems. The education and wealth of Australia allows this to happen.



Figure 3 : Boserup's theorem.



### 3.2.3 sub-conclusion

I think that Australia is a good example of how currently, drylands are not always vulnerable to food insecurity because with good wealth and income from alternative sources and also a stable government, it allows a country to find ways to avoid this problem.



### 3.3 Non-Dryland Areas that are vulnerable to food insecurity.

#### 3.3.1 Haiti.

Haiti is an example of an area country that suffers from severe food insecurity. It is 133rd poorest country in the world. In some parts of Haiti 80-90% of incomes are spent purely on food and in the poorest parts this figure increases to 100%.

Firstly one of the big issues is the global rise in food prices. Because of this the world Bank estimated that 100 million <sup>more</sup> people <sup>globally</sup> are facing severe poverty and famine because they can't afford this rise. In Haiti food prices have doubled in the past 3 years. Maize has gone up 100%; rice up 70%. People can't afford this and in some areas this is causing food riots and malnutrition.

Alongside this there was the earthquake which occurred in 2011. This destroyed 90% of crop yields and land in southern Haiti and left over 20,000 families displaced. There was



a high demand for foreign aid because there was no food available making many even more food insecure than they already were. Haiti is a country that is at risk ~~to~~ from natural disasters such as earthquakes or tsunamis so ~~so~~ there is always a chance that they could suffer more and more facing severe chronic food insecurity.

### 3.3.2. Myanmar.

Myanmar is another non-dryland country ~~is~~ badly affected by food insecurity. In May 2008 there was Cyclone Nargis. This flooded huge areas of the country destroying large areas of crops and land. ~~4000~~ more than 4,000 people were killed and over 100,000 were displaced. It meant that there was a huge demand for foreign aid however the military controlled government rejected aid or wouldn't give it to those areas that needed it most. In addition to this, they ~~they~~ wouldn't allow some of the neighbouring countries to help despite offering.

4 months after the cyclone ~~at~~ Myanmar experienced a plague of rats. This was due to ~~be~~ the



bamboo plants producing a fruit that attracted the animals. The rats came and destroyed areas growing rice and maize leaving many families, farmers and communities without money and on the brink of starvation.

The chin region was one of the worst affected with over 20% of the population in severe need of food aid but even despite many appeals the military government (who came into power in 1962) still refused to provide them with any, worsening the state of food insecurity within the region.

### 3.3.3. Sub-conclusion

From the two examples of non-dryland areas it is clear to see that there are other significant factors such as biological pests or natural disasters that can cause a similar, possibly worse, state of food insecurity ~~that~~ to that of dryland areas and these two regions both experience the interconnected impact of human and physical factors where one may worsen the other or speed up the negative impact that it is having.

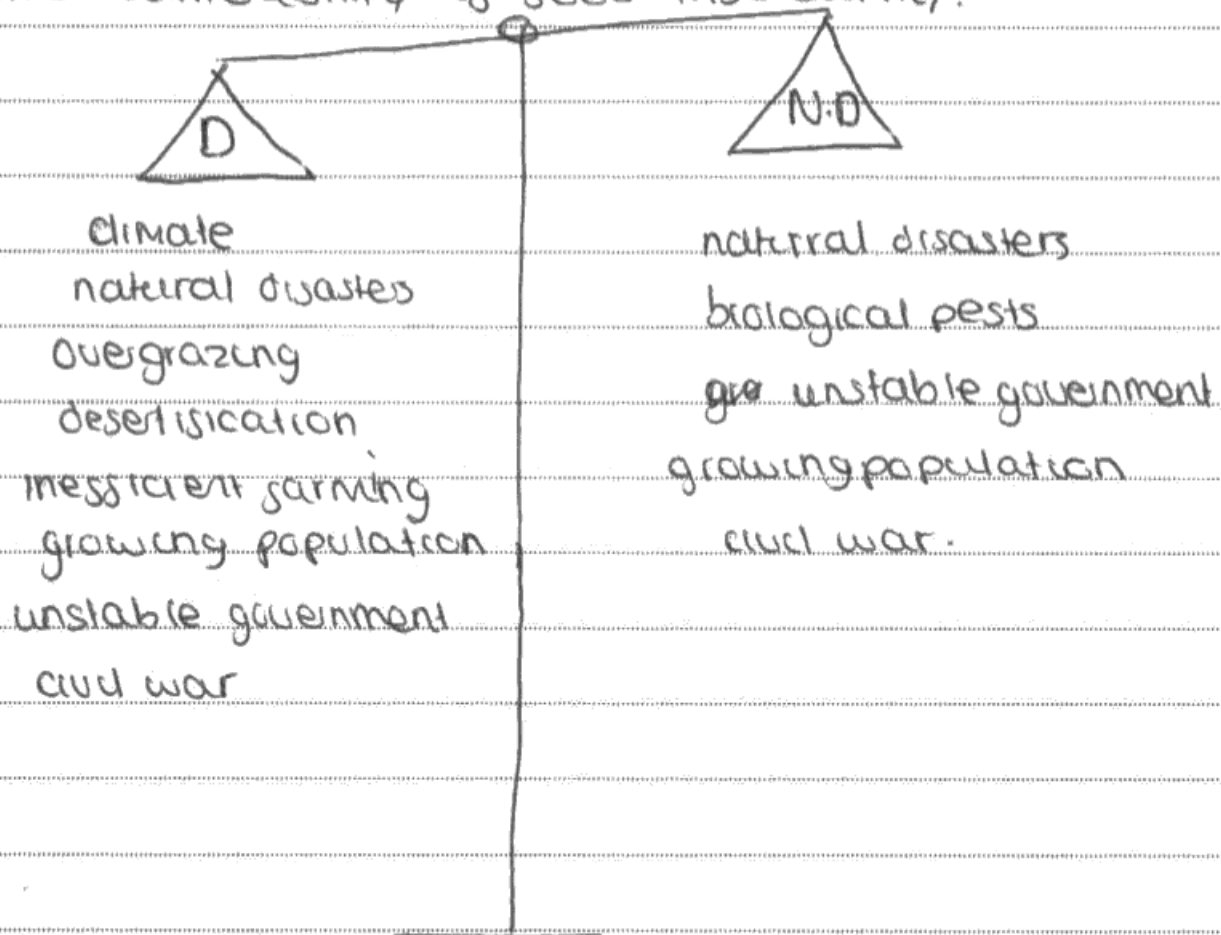


#### ④. Conclusion.

When looking back at the title of drylands being the areas ~~being most~~ currently being most vulnerable to the threat of food insecurity,

I think it is also obvious that this is not always the case. \* The main argument against this \* related to the examples of non-drylands facing a similar severity of food insecurity. The diagram below weighs up the factors of these two areas that cause the vulnerability

Figure 4 : Weighing scales showing factors of Dryland + non-dryland areas contributing to the vulnerability of food insecurity.





From the case studies used I would argue that the dryland areas are slightly more vulnerable because the climate is constantly going to worsen other problems. In Somalia the government are also having an impact but I think the drought has a more intense and severe impact on the country and many other countries in the horn of Africa.

Within the non-dryland areas I think that the natural disasters cause the food insecurity issue to become much worse on a more immediate bases e.g. the earthquake in Haiti and the cyclone in Myanmar. These types of disasters will bring long term affects. This could also be a factor that worsens with the issue of climate change and global warming.

Overall, I believe that drylands are most vulnerable to the threat of food insecurity but have exceptions like Australia where good wealth and a stable government allow them to avoid the problem, still, Australia still have pockets of food insecurity.



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TOTAL FOR PAPER = 70 MARKS **68**



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