Assignment: Food Security and the Wheatbelt Agricultural Region

DUE DATE: Wednesday 20th September

Background information:

The Wheatbelt surrounds two sides of the Perth Metropolitan Area and has proximity to the growing demand for food resources in the Asian market. It is a world export leader in grain and livestock and has a strong sense of place which promotes community values. The Wheatbelt has developed in an environmental biome that has been altered significantly by farming practices, however, and this impact has created challenges for wheat farmers that need to be overcome in order to continue to provide food for the world.

![Map of the Wheatbelt Agricultural Region]

Your Task:

- You are to conduct research according to the instructions on this task sheet and complete a report on the ‘Food Security and the Wheatbelt Agricultural Region’.
- Your report should be neatly presented, preferably typed, and include a title page, maps, diagrams, photographs or other visual images to support your writing.

Referencing:

Copying from sources directly, without referencing, is called plagiarism. In later years, you may lose considerable marks for doing so. At Year 8 level, it is expected that quotation marks are used for phrases/sentences/ideas that are not your own, and a list of all sources used should appear at the end of your report. This list should give the Author, Title, Date and Publisher, if possible, and all web sites named should also include the URL (web address). The most important thing is to use your own words whenever possible, in order to show that you understand what you are writing.
Research Topic:

*Food Security and the Wheatbelt Agricultural Region of WA*

1. **Describe** the location and population distribution of this region and the types of farming located in this region.

2. **Explain** the climate, vegetation and soil characteristics of this region and relate to the factors that affect climate.

3. **Discuss**, in paragraphs under the following headings, the environmental impact farming has had on the region:
   a. Salinity
   b. Erosion
   c. Loss of biodiversity and habitats
   d. Impact of waterways (e.g., algal blooms)
   e. Climate change

4. **Sustainability.**
   Imagine that you owned a farm in Western Australia's wheat-belt. Identify **three** strategies that you would use to mitigate the effects of your farming on the environment, while maintaining production levels, and **explain** how they would be implemented on your farm. One of your chosen strategies must come from each of the categories below:
   a. **Physical changes to the landscape**
      E.g., tree planting, windbreaks, contour banks, fencing of waterways, keyline design, soil amendment, weeding regimes
   b. **Use of new technologies, science and equipment**
      E.g., direct seeding, satellite controlled machinery, solar/hydro/geothermal power sources, targeted spraying, water-table pumps, drought-resistant or heat-tolerant species, genetically modified crops, natural pest predators, nutrient use efficiencies, robot farming, irrigation, computer-modelling, 'unlocking the soil bank'
   c. **Changes to the way you would farm – the processes, or even the product**
      E.g., other livestock instead of sheep and cattle, different crop rotations, cover crops, crop diversity, managed grazing, recycling waste, new crops - such as legumes or mallee, no-till farming

Your explanation may include writing, maps, diagrams or pictures.

5. **Reference list**
   List the sources of information you have used, including, if possible, the title, author and publishing details – including web address if applicable.
## Marking

<table>
<thead>
<tr>
<th>Level</th>
<th>Score /25</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>8-12</td>
<td>Student is able to locate and describe some of the features of the Wheatbelt Region. They can identify some of the impacts of farming in the region. Their work is incomplete and contains errors but shows some evidence of organisation and research.</td>
</tr>
<tr>
<td>C</td>
<td>13-16</td>
<td>Student has a sound knowledge of the Wheatbelt region and the impacts and strategies to improve the sustainability of the agricultural industry. Their work is mostly complete and demonstrates organisation and research.</td>
</tr>
<tr>
<td>B</td>
<td>17-18</td>
<td>Student has a strong understanding of the impact of a farming activity on the environment. They identify and explain in detail the reasons for this impact, as well as a number of the methods used to adapt and mitigate its impact, while maintaining yields. The report is well-presented and complete, with a minimum of content and expression errors. Research from more than one source is evident, and copying is avoided.</td>
</tr>
<tr>
<td>A</td>
<td>19-25</td>
<td>Student understands costs and benefits of farming in the Wheatbelt region. That is, they are able to evaluate the methods used to combat the negative environmental impact of farming whilst increasing yields. Their report uses sophisticated writing, excellent organisation and presentation, and demonstrates wide research. References are used appropriately and listed clearly.</td>
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Comment: