Aspects of the Australian Food Industry

**H3.1:** Investigates operations of ONE organisation within the AFI.
- Describe the activities carried out in ONE organisation within the AFI.

**H1.4:** Evaluates the impact of the operation of an organisation within the Australian Food Industry on the individual, society and environment.
- Evaluate the impact of the operation of an organisation on individuals, society and the environment.
Aspects of the Australian food industry

- operation of organisations within the Australian food industry with particular attention to:
  - levels of operation and mechanisation, including household, small business, large companies, multinationals
  - research and development
  - quality assurance
  - consumer influences such as value added foods
  - impact on the
  - environment including waste management, packaging practices, production techniques, and transportation
  - economy, eg generation of profit and changes in employment
  - society including lifestyle changes,
  - career opportunities and working conditions

- describe the activities carried out in ONE organisation within the food industry
- evaluate the impact of the operation of an organisation on individuals, society and the environment
Impact on the Environment
Negative Impacts on the Environment

Brainstorm the ways in which the Australian Food Industry impacts negatively on the environment.
How does the AFI impact on the Environment?

- The production of the raw materials (use of chemicals, salinity, soil degradation).
- Manufacturing and transport emissions and the use of fossil fuels.
- Packaging practices.
- Waste management.
- Transportation.

ALL SECTORS OF THE AFI IMPACT THE ENVIRONMENT IN SOME WAY
Conventional Vs Organic Farming

- Conventional farming uses chemicals to control weeds and pests, prevent diseases, regulate growth in animals and fertilise the land.
- This has long-term damage on the environment.
- It is estimated that over half of Australia's farmland needs some kind of treatment to overcome infertility, salinity, and acidification of the soil, repair erosion, and eliminate the pesticide poisoning of wildlife and toxic algae in waterways.
- Over 2500 different farm chemicals are available to Australian farmers. Synthetic herbicides and insecticides are frequently used.

HOWEVER, without synthetic agricultural chemicals, a significant proportion of the world's agriculture would be lost.
Organic Farming

- **Organic farming** uses chemical-free plant and animal production techniques that aim to maintain or improve soil fertility and organic matter.
- Certain requirements must be met before any food item or produce can be labelled as ‘organic’.
- In Australia, organic produce is certified by several organisations that are accredited by the Australian Quarantine and Inspection Service (AQIS).
- While there is growing demand for organic foods in Australia, only 10% of the population regularly buys organic produce because they cost more. At present, organic food is still considered to be a **niche market** (fulfil the needs of a minority of the population).
The Australian Quarantine Inspection Service is responsible for:

A. Certification of agricultural exports.
B. Costing of imports.
C. Correct pricing of exports.
D. Protection of the Australian Retail Sector.
HSC 2012 - QUESTION 20

Which organisation would advise Australian oyster producers when oyster production is severely affected by a parasite?

A. AQIS
B. CSIRO
C. FSANZ
D. WHO
Organic Farming
# Pros and Cons of Organic Farming

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>Less Impact on the Environment.</td>
<td>Lower yields are produced from organic farms as there is no chemical pest control.</td>
</tr>
<tr>
<td>Food produced is safer as it is free from chemicals.</td>
<td>Organic food may cost more because of the higher production costs.</td>
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<tr>
<td>Organic animals are free-range and there’s no use of growth promoters such as steroids or hormones.</td>
<td>Organiser farms are usually smaller.</td>
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<tr>
<td></td>
<td>Organic farmers must pay to have their soil tested and farming practices evaluated before their products can be certified ‘organic’.</td>
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</table>
These logos represent the seven AQIS-approved organic certifying organisations in Australia. They are: a. Organic Growers of Australia (OGA), b. the Bio-Dynamic Research Institute (Demeter), c. Tasmanian Organic-Dynamic producers (TOP), d. Organic Food Chain (OFC), e. Safe Food Queensland (SFQ), f. Australian Certified Organic (ACO, a subsidiary of Biological Farmers of Australia) and g. the National Association for Sustainable Agriculture Australia (NASAA).
How has the AFI Responded?

- Farming practices that reduce the effects of erosion, soil degradation and use chemicals.
- Farming practices have increasingly used science to improve food production without harming the environment.
- Products that are organically farmed have grown in popularity, lessening the use of chemicals in food production.
- More careful disposal of manufacturing waste, reduction of packaging and the increased ability to reuse and/ or recycle material.
Recycling is the return of raw materials into the manufacturing process to make other useful products. Recycling is essential to reduce landfill.

Examples of how the AFI recycles include:

- 70% of packaging paper is recycled into other products.
- 87% of glass is recovered for refilling or recycling into new packages.
- 65% of aluminium is recycled.
- Material minimisation - reduce waste and cost by reducing the weight of packaging but still maintaining its strength.
- Manufacturers employ waste management companies to manage waste.
- Some packaging can now be made from biodegradable material that will decompose through the action of micro-organisms during a length of time.
How is the AFI Reducing Pollution?

Pollution comes in many forms: air, land, water and noise.

To reduce the impact of pollution, manufacturers have formed waste and pollution reduction strategies and recycling programs. Such as:

- Reusing and recycling water.
- Reusing effluent and other waste.
- Minimising the use and weight of packaging.
- Converting refrigeration systems from CFC systems.
Example: McDonald’s

McDonald’s has replaced styrofoam packaging with paper to reduce the emission of harmful environmental gases, and to reduce landfill as paper is recyclable.
Production techniques involve the following environmental issues;

- Energy is used for processing and manufacturing.
- Non-renewable (coal and oil) sources are the main energy used in food manufacture.
- Gases released into the atmosphere during the production of packaging products.

**Solutions:**

- Reusing waste materials; for example, some food manufacturers reuse waste from processing for irrigation of plant gardens.
- Recycling waste materials such as packaging.
- Production of lighter and more efficiently shaped packaged so that more can be transported at the same time.
EXAMPLE: GREEN’S - SUSTAINABLE PALM OIL

Palm Oil is the most commonly used vegetable oil. It is cheap, easy to obtain and large amounts of it can be grown at the one time. In fact, 50% of supermarket products contain palm oil.

Unfortunately, obtaining palm oil results in loss of habitats and homes for both humans and animals.

Green’s is starting to use sustainable palm oil in the production of their foods.

Sustainable palm oil is an approach to oil palm agriculture that aims to produce palm oil without causing deforestation or harming people.

Nutella is another food product that is made from sustainable palm oil.

Owned by Ferrero
Transportation

- The type of transportation used in distribution (air, water, rail or road) is dependent on the type of product, the distance to be covered and the nature of the product.
- Rail is a more environmentally friendly method of transportation, in comparison to road and air.
- Many food companies are establishing warehouses close to rail lines to make use of this mode of transport.
- Transport companies have also fitted filters to the exhausts of transport vehicles to reduce gas emissions.
In recent years, the Australian Food Industry has responded in a number of ways to growing community concern for the environment. In which area has the response been greatest?

A. Microwave processing
B. Food Storage
C. Food Packaging
D. Factory Waste Disposal
Case Study: SPC Ardmona

Water Management

- Recycle effluent water.

Energy Use

- They utilise energy efficient technologies.
- Participate in Greenhouse Challenge - a voluntary agreement in reducing emissions.
- Reduced landfill.
- Uses renewable sources of energy - solar and water energy, as opposed to oil and coal.

Consumer Waste

- Colour Coded Recycling System.
- Recyclable Packaging Materials. A good example is the
## Onsite Disposal methods for used packaging at SPC Ardmona

<table>
<thead>
<tr>
<th>Material</th>
<th>Reused</th>
<th>Recycled</th>
<th>Potential Reuse / Recycle</th>
<th>Landfill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesive label backing</td>
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<td>Corrugated cardboard shippers</td>
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<td>Corrugated cardboard pallet dividers</td>
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<td>HIPS barrier sheet – ERCA cups</td>
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<td>Office paper</td>
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<td>Paper labels</td>
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<td>Paper ingredients bags</td>
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<td>Polypropylene bulk ingredients bags</td>
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<td>Plastic drums</td>
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<td>Plastic drum liners</td>
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<td>Plastic strapping</td>
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<td>Shrink wrap film</td>
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<td>Steel cans</td>
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<td>Steel drums</td>
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<tr>
<td>Stretch wrap film</td>
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</table>
Case Study: SPC Ardmona

Negative Impacts on the Environment

Approximately 15% of the total canning peach crop is left on the trees. This is because SPC Ardmona cannot take more than it is expected to sell, therefore, the extra food goes to waste.

According to an article written by ‘ABC’, titled ‘No market, no future, no more fruit trees’ (2013)