

AGRICULTURAL SYSTEM

For an example of a farm or agricultural system, at a named location, describe the farming system. Farm or agricultural system

Content Guide:

- Natural inputs e.g. **rainfall, soil, relief, land, temperatures**, sunshine etc.
- Human/economic inputs e.g. **labour, machinery, fertilisers, government incentives, seeds**, etc.
- Processes e.g. ploughing, sowing, feeding animals, harvesting etc.
- Outputs e.g. meat, wool

Place specific reference: Named areas within country/area chosen, Statistics etc

For an example you have studied, describe and explain the land use of a farm or agricultural area.

Content Guide:

(can describe any type of agricultural land use)

- Relief
- Climate
- Soil type/ fertility
- Capital/ availability of finance
- Workforce
- Market availability/ demand/price
- Accessibility
- Government policy
- Tradition

Place specific reference: Named soil types, Specific climatic details, Details of markets, Specific government policies, Specific details of sources of inputs/outputs

For a named farm or agricultural area you have studied, explain how the natural environment (climate, relief and soil) has influenced how the land is used.

Content guide:

- Relief

- Precipitation
- Temperatures
- Sunshine
- Natural hazards
- Crops or animals must be specified

NOTE: Do not credit negative impacts of natural hazards on farming e.g. drought, but only credit positive responses e.g. using drought resistant crops etc.

Place specific reference: Specific details / statistics of farm, of soil / climate etc.

Note: The factors are natural.

Type of farm or agricultural system- Wheat cultivation (commercial agriculture)

Name of area- CANADIAN PRAIRIES

Size of land

- The Canadian Prairies is one of the largest cereal producing regions.
- Wheat cultivation in the Canadian Prairies is an example of extensive farming: it covers around 75% of Canada's farmland.
- The average farm size in the prairie provinces of Saskatchewan, Alberta and Manitoba is over 600 hectares.
- Farmer's make large profits due to these large farms, however, yield per hectare is low.

Human inputs: capital, relief, labour, seeds, fertilisers

- Wheat farming is capital intensive: A large proportion of expenditure goes toward machinery, chemicals and other equipment.
- There is a heavy reliance on machinery for ploughing, planting, spraying the crop and harvesting.
- Machinery is effectively used, so only a small but highly skilled workforce is required to handle the combine harvesters and harrows. One or two extra helpers are usually hired during planting or harvest time.
- GM seeds require lesser water requirements, so they are used in drier Northern areas.
- Fertilisers are used, but in less quantities.

Physical inputs: relief, soil, climate

- Wheat cultivation requires flat, gently undulating land, which extends around 1500km from East to West, to support the use of large machinery like combine harvesters.
- The Canadian prairie area used to be a natural grassland and a black humus-rich soil called chernozem had developed beneath the grass, providing natural fertility with minimum input of fertilisers.
- This area experiences a large annual range of temperature: ranging from warm temperatures of about 18°C in summer that allow optimum growth during the growing season, to harsh cold winters that kill pests.
- Rainfall is generally light, and most areas receive around 250-500 mm of rain per year, except in the drier North and South.

Processes

- The crops are sown in spring, grown through summer, harvested in autumn, and then stored in grain elevators (silos) next to railways - There are 2000 railway shipment points in the prairies that increase accessibility to ports for export.

Additional information:

- Generally in May, after the snow melts and the ground thaws out, the fields are ploughed using large tractors.
- The seeds are planted using large machines, and germinate within a week.
- As the wheat grows, it is fertilised and sprayed to control pests and diseases.
- The wheat ripens between the end of August and early September - the crop turns a golden yellow colour.
- Wheat must be harvested quickly before colder weather causes frost, which can damage the plants and reduce yields.
- Combine harvesters are used to cut the crop and separate the grain from the rest of the plant.
- The wheat is then transported by truck to the nearest grain elevator (silo).

Access to market, demand/price

- Canada's grain sector is a major contributor to its economy, with increasing demand for export grain products from global markets.
- In May 2022, Marie-Claude Bibeau, the Minister of Agriculture announced that AAFC (Agriculture and Agri-Food Canada) will invest \$4.4 million to increase market access for Canadian grain, and help various organisations to develop relations with global markets.

- For example, industries based in Winnipeg, Manitoba (a prairie province) contributed about \$32.3 billion in 2021, with exports that would have set a record value of more than \$24.5 billion.
- Spring wheat area for May 2022-23 is seen rising to 17.6 million acres (up 7% each year); durum wheat area is seen rising to 6.2 million acres (up 13% each year).

FOOD SHORTAGES

For a named country or area you have studied, explain the causes of food shortages.

Content guide:

Natural causes

- **Drought**
- **Flooding**
- Tropical storms
- **Pests**
- Disease
- **Infertile soils**
- **Soil erosion**
- Natural disaster: tsunami, volcanic eruption, etc.

Other causes

- **War/civil unrest**
- **Political issues/ corruption**
- **Uneven distribution of food**
- **Poverty / Country cannot afford to import food**
- Focus on and export of cash crops
- **Population increase**
- Lack of government investment
- Loss of land to urbanisation

Place specific reference: Locational details, Named places, Specific details/statistics about natural events, Specific plant diseases or pests.

SUDAN & SOUTH SUDAN

Background

- The countries of Sudan and South Sudan, have suffered from food shortages for decades.
- South Sudan split from Sudan in 2011 - It is the world's youngest nation.
- Over 4 million people (40% of population) were short of food in 2013.
- Over 7.1 million people (half the country's population) are facing extreme and deadly hunger.
- The nutrition situation is critical in many areas, affected by severe food insecurity with 1.2 million children under 5 years of age severely malnourished.
- Increases in acute malnutrition are due to severe food security, widespread conflict and displacement, poor access to services, high morbidity, extremely poor diets, and poor sanitation and hygiene.

The Civil War

- Has lasted for more than 20 years, between the government in Khartoum and rebel forces.
- 70,000 died from hunger and related diseases during the civil war.
- Food stocks were depleted: Cereal production has steadily declined since the start of the conflict. By 2017, it declined by approximately 25% below pre-conflict levels.
- Over 7.1 million people (half the country's population) are facing extreme and deadly hunger. The situation is getting worse with the war.
- High military spending of \$1 billion also reduced the government investment.

Increasing population:

- Relatively high fertility rate: 4.43 births per woman.
- Sudan has a low contraceptive prevalence of just 9%.

Poor distribution networks/ Lack of food aid

- With funding for other causes dwindling, the U.N.'s World Food Programme (W.F.P.) has been forced to cut food aid to South Sudan.
- At times, the UN World Food Program stopped deliveries of vital food supplies, because the conflict situation was considered too dangerous for their suppliers.

Political problems / corruption

considered one of the most corrupt nations in the world. On Transparency International's 2021 Corruption Perceptions Index, Sudan ranked 164th out of 180 countries

Drought, infertile soil, floods, soil erosion, desertification

- The number of people in hunger increased due to the destruction caused by floods and droughts.
- The country was hit by drought in early 2019, which caused desertification and infertility of soil.
- The drought was then followed by catastrophic floods and soil erosion in October.
- The government had declared these floods an extreme state of emergency in 3 main regions: the floods affected nearly 1 million people and destroyed 73 thousand metric tons of harvest.
- 1000s of cattle and goats were wiped out, threatening the livelihoods of those who depended on these animals for survival.

Pests

- Along with this, pest infestations also hampered crop production.
- South Sudan reported an outbreak of fall armyworm pest in its Equatorial region - including Magwi, Yei and Juba in July 2017.
- Fall armyworm is a new pest in Africa that feeds on maize, sorghum, millet and vegetables, which are staple foods in the country.

Hunger is expected to deepen mainly due to depleted food stocks and high food prices. Overall, the cumulative effects of flooding and related population displacement, localised insecurity, economic crisis, low crop production and prolonged years of asset depletion continue to keep people hungry.

For a named country or region you have studied, describe the effects of food shortages on the people who live there.
Content guide: - Malnutrition/starvation - People cannot feed their families

- **Price increase**
- No surplus for sale/export
- Migration
- **Dependence overseas food aid**
- **Increased death rates & lower life expectancy**
- **Children cannot concentrate in school -Reduction of future output**
- **Weakness/inability to work -People become unproductive**

Place specific reference: Specific details of settlements/areas affected, Named groups/tribes living in the area, Names of places and schemes within chosen region.

SWAZILAND

Background

- Swaziland is a food deficit country with low agricultural productivity.
- Anywhere between 1/4th and 3/4th of its population require food assistance.
- The country's erratic weather also produces widespread water insecurity. Upto 40% of Swazis have faced acute water shortages in periods of prolonged drought.
- Lack of water infrastructure is a major problem in Swaziland's rural areas.
- Swaziland has the world's highest prevalence of HIV/AIDS. More than half the country's children are undernourished.
- Waterborne diseases are endemic in some communities, where sanitation and water supplies are of poor standard.

Malnutrition

- A quarter of children suffer from stunted growth due to malnutrition.
- The Hhohho region has highest prevalence of underweight children (8.2%).
- Malnutrition is passed on from generation to generation.

Infant mortality: Malnutrition is responsible for 8% of child mortalities.

Death rates: Swaziland loses 783 million per year due to hunger-related illnesses.

Diseases, need for more healthcare

- Swaziland has the highest HIV prevalence in the world- 32% of adults are currently living with HIV.
- Due to Swaziland's patchy health system, one-third of ill children do not receive medical care, the survey found, while 69% of cases of child undernutrition are not treated.

Increased food prices: Cost of food in Swaziland increased 12.50 percent in October of 2022.

Lack of education

- Malnutrition affects the child's educational development and country's economic growth.
- Children can't keep up with their studies as they constantly fall ill.
- The parents don't have money to pay school fees, because of the rising food prices and the children stop education.

Poor economic development

- 40% of adult Swazis are stunted, due to malnutrition at an early age.
- The levels of illness and physical impairment caused by stunting have caused a major crisis for the small country of about one million people.
- The 37 million working hours lost due to malnutrition-related mortalities in 2009 cost the country US\$40 million, or 1.4% of its GDP.

Dependence on international aid, food imports

- Many Swazis are chronically food insecure- in 2011 one in four Swazis required food aid from the World Food Programme.
- Compared to a total national consumption requirement of 188,000 tonnes, the import requirement is 111,000 tonnes.

Food shortages

Eswatini (Swaziland)

- May 2009: crop output was 71000 tonnes, whereas the country's requirement was 140,000 tonnes.
- Around 20% of the population are estimated to be facing acute food insecurity and required urgent humanitarian assistance in September 2023.

Natural causes

Drought:

- The regions with the highest prevalence of food insecurity are Lubombo and Shiselweni, the areas most affected by drought.
- From 2015 – 2016, the El Niño drought hit Swaziland; the worst drought since 1992.
- Farmers couldn't produce good harvest, and around 80,000 cattle died across the country.
- Over 20% of the population was suffering from acute food insecurity.
- The drought of 1992 caused parents to give up farming and be dependent on aid. As a result children didn't learn farming, which reduced output further.

Soil erosion

- A serious problem that has worsened over the past 20 years.
- Soil erosion and heavy rains have created deep gullies in the soil in several regions like Nceka, increasing the food insecurity.

Flooding:

- Prolonged rains in February 2021 due to Cyclone Eloise resulted in flooding in most areas, causing crop damage and poor yields.

Pests:

- Stem borer larvae are responsible for up to 88% cereal yield losses; invasive fall armyworm pest is also posing severe threat to crop production

Other causes

HIV/AIDS

- Eswatini has the highest prevalence of HIV/AIDS: 27% of Eswatini's adult population has AIDS.
- As HIV spreads across the country, adults are dying, leaving behind their children who become vulnerable to malnourishment and hunger.
- 50% of children under 17 are orphans, and around 59% of children have lost their parents to HIV/AIDS.

COVID-19:

Prolonged impact of COVID-19 caused an increasing level of unemployment, and food insecurity.

War/ civil unrest/ political issues

- Large-scale protests for political reforms and democratisation of government caused severe unrest in 2021 and 2022.

- Social unrest has led to the destruction of businesses in urban and peri-urban areas, which played a significant role in supplying food from urban to rural areas.
- The impact of the Russia/Ukraine conflict resulted in fluctuation of key commodity prices. 2021-2023, protests for democratisation against the monarchy turned violent.

Poverty

- Eswatini has one of the highest poverty rates in Southern Africa: 59% of the rural population lives below the national poverty line, with 20% considered extremely poor.

Farming practices:

More subsistence/small scale farmers now grow cash crops like cotton, and sugarcane, which has reduced the output of food crops.

Impacts

Malnutrition

- About 31% of children under the age of 5 are stunted in growth.
- Wasting (low weight-for-height) prevalence was 2.5% in 2017.
- Hhohho region is the most affected by wasting.

Increased food prices: Food inflation has grown at double-digit levels since August 2022 and was 15.7% in May 2023.

Lack of education

- Malnutrition affects educational development of children and overall economic growth.
- Children can't keep up with their studies as they constantly fall ill.
- Parents don't have money to pay school fees, due to rising food prices.
- People become unproductive as they cannot work .

Dependence on international aid, food imports

- The World Food Programme (WFP) has been present in Eswatini since the 1960s.
- WFP provides emergency assistance to 70,000 people in the most drought-affected areas.
- It provides a monthly household ration of cereals, beans and oil.