

# Agricultural systems

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Agricultural Systems 1. Page 96-97 Farming Systems and Types and Classification of Types of Farming. You need to know the following key terminology:- - Systems = Inputs, processes, outputs - Arable, pastoral and mixed farming - Commercial and subsistence farming - Extensive and intensive farming

2. Subsistence and intensive rice farming in the Lower Ganges Valley — page 112. The information from page 112 has been summarised in the table below:-

TITLE	TYPE OF FARMING	INPUTS - PHYSICAL	SOILS	RELIEF	CLIMATE	LABOUR	FARM SIZE	TECHNOLOGY	MARKET	TRANSPORT	PROCESSES
Rice farming in India and Bangladesh, SE Asia	Intensive, subsistence, arable and monoculture	Manure from water buffalo adds to fertility	Rich alluvial soils full of nutrients due to annual flooding of the River Ganges.	Flat river flooding plain	High temperatures over 21 degrees Celsius throughout the year which ideal for growing rice.	Labour intensive — lots of family members, including children, will work on the land	1 hectare (the size of a football pitch) and may be divided into 12 or 15 plots	Very little technology — only hand held machinery to use with water buffalo	Generally no market as largely subsistence farming so nothing left to sell. Any extra output will be sold at a local market.	Generally not important as all output is consumed by the family. If there is some extra output and it goes to the local market it will travel by local transportation e. g. water buffalo on poorly constructed and maintained mud roads.	

Rice initially grown in nurseries, transported as soon as the monsoon rain flood the padi-fields — rice needs to be submerged | | in water to grow. | |

OUTPUT | | During the dry season, when there is often insufficient water for rice, either vegetations or a cereal crop is grown. | 3. Commercial and extensive wheat farming in the Canadian Prairies. The information for this case study has been summarised in the table below:- | TITLE | | Commercial and extensive wheat farming in the Canadian Prairies. | | TYPE OF FARMING | Commercial, extensive and arable | | INPUTS - PHYSICAL | | SOILS | Fertile — Grassland vegetation that has decayed over many centuries to give black or very dark | | brown Prairie soils — good for growing wheat | | RELIEF | Undulating — very gentle slopes — ideal to aid use of machinery and transportation of wheat | | CLIMATE | Long, sunny summer to ripen wheat, Winter frosts help to break up the soil. Growing season is | | | short. Precipitation — rain and snow is low — 500mm per annum (year). Chinook wind melts the | | | winter snow to release water. | | INPUTS - HUMAN | | CAPITAL | High amounts of capital used to pay for heavy use of machinery, chemicals and irrigation | |(money) |(watering) systems | | LABOUR | Largely highly mechanised — known as capital intensive — rather than labour intensive. Some | |(workers) | migrant labourers during the harvest season used. | | FARM SIZE | Large fields — 1 square mile each | | TECHNOLOGY | Highly mechanised and computer based technology | | MARKET | Outputs sold nationally — throughout Canada — and Internationally — Saga Flour in Khartoum | | | buys Canadian Prairie wheat | | TRANSPORT | Trans-American Railway takes wheat to the Great Lakes then onto eastern ports for | | | international sea exports | | PROCESSES | | Planting, ploughing, irrigation,

harvesting. | | OUTPUT | | Wheat is the major crop. | | In recent years diversification (i. e. grow more than one crop — which is known as mono (one) culture — diversified crops are | | sugar beet, dairy produce and beef — movement to mixed farming. | | Profit — this is a commercial farming system

| 4. Causes and Effects of Food Shortages Below is a list of sentences about the causes and effects (consequences) of food shortages. Next to each statement indicate whether the statement is a cause or an effect of food shortage. The first one has been done for you. a) Many women in rural India have sold their gold jewellery in order to buy food for their families. effect b) Drought has hit the rural areas of Rajasthan, India thus many farmers have not been able to irrigate their crops resulting in a food shortage for the local population. c) War in Iraq has resulted in difficult food distribution (many of the main roads and bridges have been bombed) to families in the more remote regions of the country. d) Many farmers in rural Bangladesh have been forced to over cultivate their soils in an attempt to try to produce food in times of shortage. e) In Sierra Leone a number of women have turned to prostitution in order to earn enough money to feed their families f) AIDS in Zambia has hit the farming population hard resulting in a lack of food for the local children. g) Many farmers in the Philippines have been forced to deforest hill slopes to grow more rice in response to food shortages. h) Rapid population growth in Bhutan has meant that there is not enough food to feed everyone. i) Soil exhaustion in western Darfur, Sudan has resulted in poor quality soil and thus an inability to feed the local population. j) War in Somalia has meant that many families are hungry as agricultural land has been destroyed by fighting. k) Many people in Darfur, Sudan have been

forced to migrate to Khartoum in order to secure food themselves and their families. l) The flooding of the River Nile in Khartoum, Sudan in October 2006 meant that many farmers lost their crops hence their ability to feed their family. m) Many of the very steep and dangerous roads in the Chilean Andes are too expensive to repair thus it is difficult to transport extra food to all mountain communities thus many families often only have one meal a day. n) The annual tropical cyclones that hit the Bangladesh coastline continue to destroy crops and as a consequence many families go hungry during this time. o) Corruption in rural areas of Ethiopia often means that many local people cannot afford the extremely high prices of local food thus go hungry. p) Local charities in rural Thailand have been forced to set up food camps for local farmers and their families in times of food shortage. q) Low incomes in rural areas of northern Vietnam means that many farmers cannot afford basic machinery in order to produce enough food for their families. r) Many farmers in India have borrowed money in order to feed their families in times of shortage. Debt levels are increasingly rapid. s) Many Brazilians have rioted in the major cities against the government who they consider is responsible for food shortages due to poor land distribution. Having indicated which statements refer to a cause look again and write next to each cause whether it is a natural, economic, social or political cause. 5. Read page 111 — Why do some people in sub-Saharan Africa suffer from malnutrition? 6. The causes of food shortages in Sudan have been summarised below:- 7. The effects of food shortages in Sudan have been summarised below:- 8. Response to food shortages — Land Reform, Green Revolution and HYVs and Appropriate Technology — page 113 — see activity below:- Read the

information below. Fifteen words have been taken out of the information and replaced with a letter. Match the missing word with the letter in the box below:- | dying | western-type | unemployment | | stronger |(FAO) | shortages | | shortages | free | short | | afford | diet | HYVs | | afford | incentive | landless | Green Revolution and High Yielding Varieties (HYVs) - This is the application of modern, A farming techniques. It includes the use of genetically modified seeds known as B and often requires irrigation systems, the use of fertilisers and pesticides and machinery. In many parts of the world, namely India and Bangladesh this measure has significantly decreased food shortages and the range of food crops available hence improving C. However, this measure has a number of disadvantages. For example, many small scale farmers cannot D HYVs, irrigation systems, the use of chemicals and machinery. Many farmers have got into debt trying to use this measure. Also, the use of chemicals is not sustainable. In some parts of the world the use of machinery has resulted in farm worker E and thus forced migration to the cities to find employment. Also, large scale irrigation systems have resulted in widespread water F. Food aid — this is a G term measure to address food shortages. This is often a response in emergency situations when food supply is affected by war or natural disasters e. g. volcanoes, earthquakes, flooding etc. This distribution of food is often by a national or international government or aid agencies e. g. Food and Agricultural Organisation H. The advantage of this measure of addressing food shortages is that it prevents people from going hungry, becoming under or mal nourished and even I from starvation. However, this measure does have disadvantages. For example, a country can become overly dependent

on food aid and thus there is no J to grow food locally. Secondly, food aid is generally given to a country. Local farmers who are able to produce food will therefore not be able to sell their food if the population is receiving K food.

Land reform — There are three aims to land reform: — increasing farm size for those with little land, giving surplus land to L farm workers and putting a limit on the amount of land wealthy families can own. This is the redistribution of land to farmers who previously have no access to land to grow food.

Appropriate technology — this is providing farmers with technology that is suited to their needs, skills, knowledge and level of wealth rather than the transfer of western-style farming technology that is not suitable. E. g. a light hand held plough that a woman or child can use on a farm where the women and child do the farm work rather than an imported German tractor that has been designed to be used by a much larger and M German man.

Micro-credit — This is providing local farmers with low or no interest loans so that they can buy seeds, tools and basic machinery. Many farmers around the world cannot N to grow their own food. If land, as a result of land reform, and micro-credit are both given to local, small scale subsistence farmers then this can reduce food O.

9. Damage to the environment is one way in which agriculture creates problems — read Farming and the Environment — pages 108-9

10. There are, however, many benefits of agricultural development. See the summary list below:-