Coimisiún na Scrúduithe Stáit
State Examinations Commission

LEAVING CERTIFICATE 2011

MARKING SCHEME

AGRICULTURAL ECONOMICS

HIGHER LEVEL

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MARKING SCHEME

AND

SUPPORT NOTES

Marking Scheme and Support Notes for use with the Marking Scheme

In considering the marking scheme the following points should be noted:

- The support notes presented are not exclusive or definitive.
- The support notes in many cases contain key phrases which must appear in the candidate's answer in order to merit the assigned marks.
- Further relevant points of information presented by candidates are marked and rewarded on their merits.
- The detail required in any answer is determined by the context and the manner in which the question is asked and by the number of marks assigned to the answer in the examination paper. Requirements may therefore vary from year to year.

AGRICULTURAL ECONOMICS

HIGHER LEVEL

PART I (120 Marks)

20 QUESTIONS – 15 QUESTIONS TO ANSWER.
ALL QUESTIONS CARRY EQUAL MARKS (8 MARKS)

Outline Marking Scheme

1.	2 @ 4 marks each (2 m + 2 m)	**11**.	8 marks (4 m + 2 m + 2 m)
2.	2 @ 4 marks each (2 m + 2 m)	**12.**	8 marks
3.	2 effects @ 4 marks each	**13**.	True/False 4 m; Expl 4 m
4.	2 methods @ 4 marks each	**14**.	2 methods @ 4 marks each
5.	8 marks (6 m + 2 m)	**15**.	8 marks (4 m + 2 m + 2 m)
6.	8 marks (4 m + 2 m + 2 m)	**16**.	2 actions @ 4 marks each
7.	2 methods @ 4 marks each	**17**.	1 use @ 6 m + 1 use @ 2 m
8.	8 marks (4 m + 4 m)	**18**.	8 marks
9.	3 @ 2 marks + 2 @ 1 mark	**19**.	2 @ 4 marks each (2 m + 2 m)
10.	8 marks	**20**.	2 methods @ 4 marks each

PART II (200 Marks)

4 QUESTIONS TO ANSWER AT 50 MARKS EACH.

1.	**(a)**	Explain linkages		3 @ 7 marks each (4 m + 3 m)	21
	(b)	Explanation of 2 roles		5 m (3 m + 2 m) + 4 m (2 m + 2 m)	9
	(c)	(i)	Factors re what to produce	3 @ 5 marks (3 m + 2 m)	
		(ii)	Factors re how to produce	1 @ 5 marks (3 m + 2 m)	20

[50 marks]

2.	**(a)**	2 explanations	@ 5 marks each (3 m + 2 m)	10
	(b)	4 stages	@ 10 marks each (5 m + 5 m)	40

[50 marks]

3.	**(a)**	Diagram correctly labelled	10 marks	10
	(b)	Impact	10 marks (4 m + 3 m + 3 m)	
		Diagram	5 marks	15
	(c)	Diagram	14 marks	
		Discussion	11 marks (6 m + 5 m)	25

[50 marks]

4.	**(a)**	Total Liabilities	4marks	
		Net Worth	6 marks	10
	(b)	Short-term position	12 marks [2 m + 6 m + 4 m (2 + 2)]	
		Long-term position	12 marks [2 m + 6 m + 4 m (2 + 2)]	24
	(c)	3 types of Insurance	6 m (2 m + 4 m) 5 m (2 m + 3 m) 5 m (2 m + 3 m)	16

[50 marks]

5.	**(a)**	4 contributions @ 5 marks each (2 m + 3 m)		20
	(b)	Diagram	8 marks	
		(i) Impact on demand and supply	12 marks (6 m + 6 m)	
		(ii) Impact on equilibrium price	10 marks [5 m (3 + 2) + 5 m (3 + 2)]	30

[50 marks]

6.	**(a)**	Food Aid	18 marks [6 m (3 + 3) + 6 m (3 + 3) + 6 m (3 + 3)]	18
	(b)	Free Trade	16 marks [6 m (3 + 3) + 5 m (3 + 2) + 5 m (3 + 2)]	16
	(c)	Non-govt. organisations	16 marks [6 m (3 + 3) + 5 m (3 + 2) + 5 m (3 + 2)]	16

[50 marks]

Support Notes

AGRICULTURAL ECONOMICS

HIGHER LEVEL

PART I (120 marks)

1. Define the following factors of production:

(i) **Land**: anything provided by nature which is used in the production of goods and services.

(ii) **Management** (enterprise): that factor of production that organises the other factors to produce goods and services.

2. State two reasons for government intervention in an economy.

- Regulation of the overall level of economic activity
- Promotion of economic growth and employment
- Raising taxes and redistributing income
- Regulating the amount of credit

3. Outline two effects for Irish farmers exporting agricultural produce to the UK market, if the euro (€) increases in value relative to the UK (£) pound sterling.

- The price of Irish produce becomes relatively dearer in the UK
- Exports from Ireland to UK fall / job losses / firm closures.
- Imports to Ireland from UK increase – more competition for farmers.
- Decreased economic growth.

4. State two methods of land transfer in Ireland:

(i) Inheritance
(ii) Purchase

5. **Gross Capital Formation** is a measure of the amount added of land improvement, buildings, machinery and equipment, breeding stock in any time period.

6. In production economics the optimum level of output is the level at which **profit** is maximised. Therefore, under marginal analysis, a farmer can be expected to expand output so long as the **price** of the product is greater than the marginal **cost** of the product.

7. **State two methods Irish farmers use to influence government policy:**

- Formation/membership of farming organisations (e.g. IFA, Macra na Feirme)
- Lobbying of Dail members
- Machinery demonstrations
- Dumping of surplus produce

8. **Farmers are 'price takers'. This means that the demand curve of an individual farmer is** a horizontal straight line which is infinitely price elastic. No matter how much the individual farmer sells, the price received will remain fixed at the market price.

9. **Using the data provided, complete the following table:**

Fertiliser (tonnes)	Total Product (tonnes)	Average Product (tonnes)	Marginal Product (tonnes)
1	6	**6**	**–**
2	8	**4**	**2**
3	9	**3**	**1**

10. **If demand for a good is price inelastic, reduced production will increase total revenue. Explain this statement:**

Total revenue is price multiplied by output.
If demand is inelastic, a 1% increase in production (output) will cause a larger than proportionate (>1%) increase in price, therefore total revenue will rise.

11. **State three types of market structure:**

- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly.

12. **Assume an animal is valued at €800 at the beginning of the year and at €950 at the end of the year. State how should this be recorded in calculating the farm's level of output for the year:**

The animal has increased in value by €150 and this increase should be taken into account in the year's output.

13. **Assuming 'oxtails' are an inferior good, a decrease in consumers' real income will increase demand for oxtails.**

State if this statement is true or false: **True**
Explain your answer: A decrease in real income $\Rightarrow$ decreasing purchasing power and substitution away from luxury food items $\Rightarrow$ increase in demand for inferior food products.
Inferior goods have a negative income elasticity of demand. Less are bought when real income increases.

14. **State two methods of calculating depreciation:**

(i) straight-line depreciation
(ii) declining balance depreciation.

15. **Explain the term 'equity' with reference to a farm balance sheet:**

It is the difference between assets (which can either be fixed – such as land and buildings, or current – such as feed, saleable crops and cash) and external liabilities (such as loans, bank overdrafts).

16. **Outline two actions farmers may consider to overcome difficulties in meeting agreed repayment schedules on their loans:**

- Sell assets
- Reduce living standards
- Extend period of repayments

17. **Outline two possible uses of the data from the 2010 Census of Agriculture, conducted by the CSO.**

- The 2010 Census of Agriculture provides a complete and comprehensive snapshot of the agricultural production sector, which is crucial in determining the development of agricultural policy in Ireland and the EU.
- The Irish Government and the European Commission both use such statistics to help formulate new policy and monitor existing agricultural policy.
- Census statistics are also used by farming associations, economic researchers and even individual farmers / agricultural producers in making decisions.

18. **In conducting a comparative analysis, a farmer is evaluating** the efficiency of his/her farm by comparing its results with averages from similar farms in the district or region.

19. **State two causes of the recent rises in food prices:**

- Increase in input costs – fuel prices – fertilizer costs – add to costs of production
- Higher demand from emerging countries and shifting diet patterns
- Natural disasters / drought / bad weather leading to shortage of food
- Poor crops
- Biofuels – switching of land use to the production of biofuel crops
- Bans on exports in developing and emerging countries
- Speculation
- Food hoarding – restricting exporting in order to safeguard local supplies.

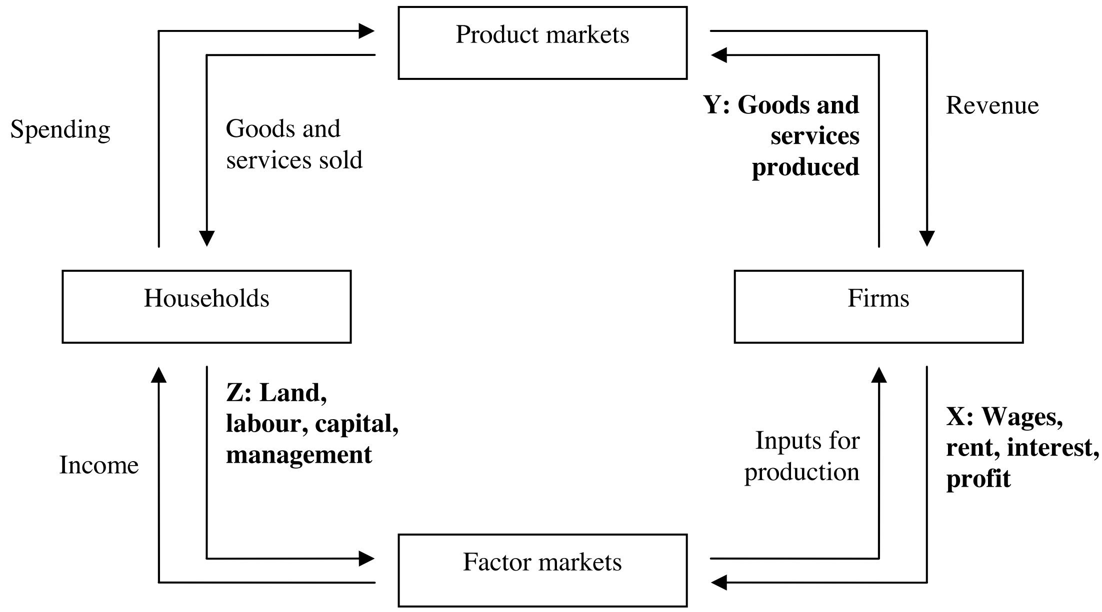
20. **State two methods that can be used to provide guaranteed prices to farmers:**

- Subsidies on production
- Import levies and tariffs
- Production quotas
- Import quotas
- Deficiency payments.

Part II (200 Marks)

QUESTION 1.

The diagram below represents a simplified economic system with two entities, households and firms. It shows how these entities interact through the product markets and factor markets.



(a) Explain the linkages labelled X, Y and Z above.

- X: firms pay for resources obtained from the factor market. Firms pay wages for labour, interest on capital resources, and profit for enterprise.
- Y: Firms supply goods and services to the product/goods markets. Firms use the factors of production to create output, which are supplied to the product market in exchange for revenue.
- Z: Households supply the factor market with resources (land, labour, capital and management/enterprise) in exchange for income.

(b) Two additional entities which could be included in an economic system are (i) the government and (ii) intermediate firms. Explain the role of each.

(i) The government taxes households and provides money to firms through government expenditure.

(ii) Intermediate firms provide goods for other firms, and not for households.

(c) Discuss the factors that affect a firm's decisions in relation to:

(i) **What to produce**:

- the level of consumer demand
- relative costs of production
- future market and price expectations
- the suitability of the land
- farmer's preference
- technology
- reduced risk
- profit maximisation.

(ii) **How to produce**: cost structure of farm, level of competition.

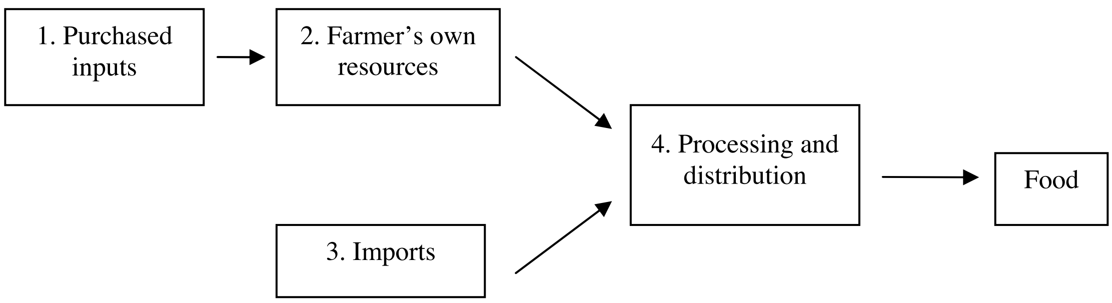
QUESTION 2.

(a) Explain the terms 'cost-push' and 'demand-pull' inflation.

Cost push inflation arises when general price levels are pushed up by increases in costs of production, in the absence of any corresponding increase in productivity. Sources of cost pust inflation are wage increases and import prices.

Demand pull inflation arises when demand is increasing in an economy faster than supply. Excess demand pulls up the price level. "Too much money chasing too few goods."

(b) The diagram below represents a generalised food chain.



Increases in food prices may originate anywhere along the food chain.

Discuss how increases in food prices can originate at stages 1 to 4 on the food chain above, with reference to Irish agriculture:

1. The pre-farm-gate portion of the food chain / purchased inputs:

Any increase in the cost of production for farm suppliers (e.g. energy costs, costs of raw materials, labour) can lead to increased food prices. If this cost is not absorbed by the suppliers of the resources themselves through increased productivity or reduced profit margins, it will have to be passed onto farmers in the price they pay for resources. Examples of this can be seen in the increased energy cost (oil prices) in recent years, or in increased labour costs.

2. The on-farm portion of the food-chain / farmer's own resources:

Increased cost on the farmer (e.g. increased labour costs, increased energy costs, increased feed costs) will create a need to either absorb this increased cost through increased productivity (reduced average cost) or reduced profits. The farmer may also be able to pass on some of the cost in the form of a higher price to consumers, but the ability to do this may be limited as most farmers are a price-taker.

3. Imports:

Imports may enter the food chain in the post-farm-gate sector, requiring processing and distribution before reaching the consumer. The price of imports may rise because:

(i) Changes in international trade conditions (e.g. exchange rates, tariffs, trade barriers), can create an increase in the price of imports. Unless this increase in price is absorbed by processors, it will be passed onto consumers as an increase in price. Fertiliser, fuel and feed are largely imported and global factors can have a disproportionate effect on their cost.

(ii) Exchange rate movement can have a significant effect on the price of imports.

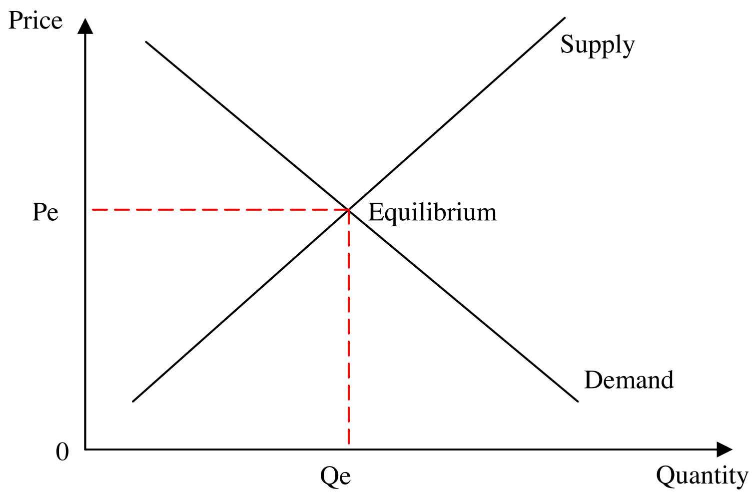
4. The post-farm-gate portion of the food-chain:

In the post-farm-gate sector, costs in processing may rise because of increased wages and salaries to the people employed in processing. Management may be able to absorb cost increases within the firm. If this cannot be done,they will attempt either to pass the increases forward to the distribution sector or backward to the farmer in the form of a lower price for his/her agricultural output. The direction will depend on the state of the market balance at the farm and distribution level.
Increases passed forward to the distribution sector usually end up in the form of a higher price for food to be paid by the consumer.

QUESTION 3.

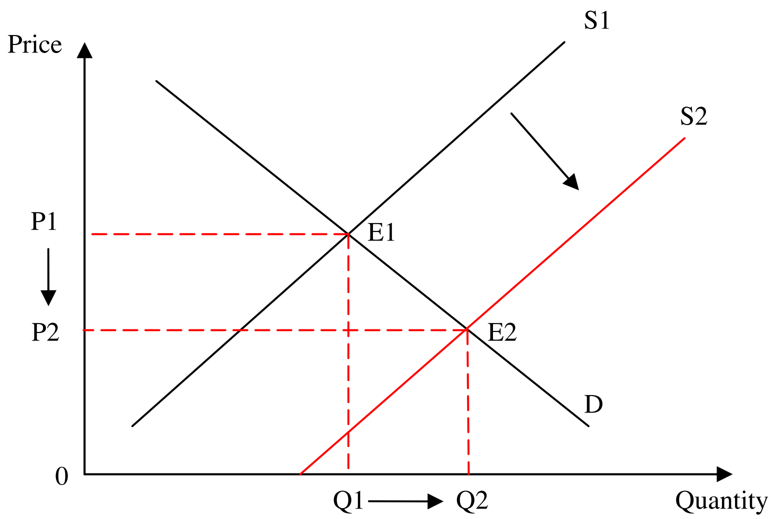
The diagram below shows a supply-demand situation for barley in the Irish market.

(a) **Copy the diagram into your answer book. Label the axes, the demand and supply curves, and the equilibrium price and quantity.**

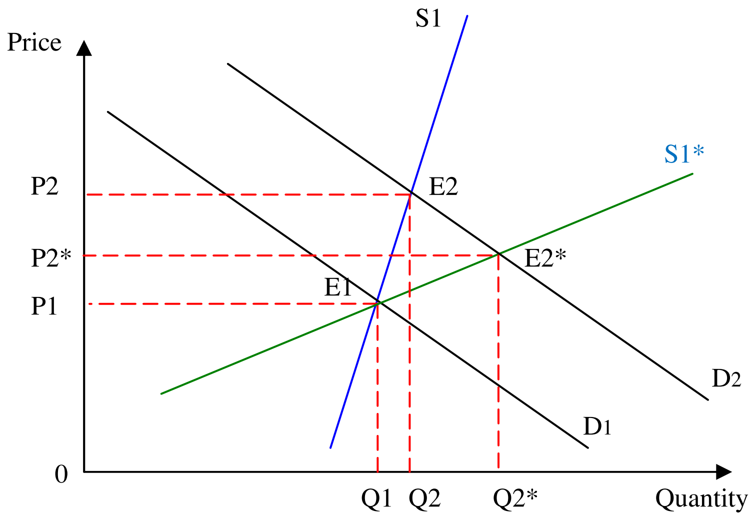


(b) **Assume farmers have experienced an excellent barley growing season. Using the diagram you have drawn, illustrate and discuss the impact this will have on the market equilibrium price and quantity**.

Supply curve shifts to right / supply increases, price falls and quantity rises. New equilibrium shown as E2.



(c) The extent to which a demand shift alters the price of an agricultural product depends on the price elasticity of supply for that product. Discuss this statement using an appropriate diagram.



If supply is inelastic (S1), an increase in demand (E1 to E2) will create a significant increase in price (P1 to P2), but a less significant increase in market quantity (Q1 to Q2).

If supply is elastic (S1*), an increase in demand (E1 to E2*) will create a significant increase in market quantity (Q1 to Q2*), but a less significant increase in price (P1 to P2*)

QUESTION 4.

The following is a Balance Sheet for a farm as at 31/12/10:

Assets €		Liabilities €	
Fixed Assets Land and buildings Machinery and equipment Breeding stock	 450,000 250,000 80,000	**Long-term Liabilities** Loans outstanding for building and machinery	 150,000
Current Assets Trading livestock Feed and fertilisers Forage crops Saleable crops Cash and debtors	 40,000 7,000 15,000 1,000 20,000	**Current Liabilities** Bank overdraft Other creditors **Net Worth**	 20,000 12,000 **?**
Total	**863,000**	**Total**	**?**

(a) **Calculate total liabilities and net worth from the Balance Sheet above.**

Liabilities: €863,000

Net Worth: €681,000 (863,000 – 150,000 – 20,000 – 12,000)

(b) **Assess, using relevant ratios, both the short-term and long-term financial position of the farm. Refer to *liquidity* and *solvency* in your answer.**

Short-term financial position:

Liquidity ratio = liquid assets / current liabilities
= 0.66 : 1 [(20,000 + 1,000) / (20,000 + 12,000)].

This indicates that they may not have sufficient liquid assets to meet current liabilities, if creditors press for payment.

Long-term financial position:

Debt to net worth ratio = 0.27 : 1 [(150,000 + 20,000 + 12,000) / (681,000)].

This indicates that the farm is solvent, although it has liquidity problems, and has sufficient assets to meet its long-term liabilities.

(c) Identify and discuss three types of insurance a farmer should consider

Property insurance can provide full coverage for all farm premises and contents against risks such as fire, flood, storm, burst pipes and theft. A wide range of cover can be arranged for all farming property, including buildings, produce, small tools, machinery and office contents. Business interruption (consequential loss) cover may be added, in order to protect the farmer's income/profits following damage by an insured risk/peril.

Public liability insurance: Ownership or occupation of land creates the possibility of a public liability claim, where a visitor or member of the public has suffered loss or injury as a result of negligence on the farmer's part. This may include the escape of animals from the property.

Employer's Liability insurance: It is a statutory requirement that anyone employing individuals on a full-time, part-time or casual basis, must arrange employer's liability insurance. This protects against claims from any employee due to accidents at work on the farm.

Life assurance: provides compensation to a named beneficiary in the event of the death of the insured person (the farmer). There are different types, including term-life, whole life and endowment insurance.

Health insurance: covers the cost of private health care in the event of serious illness.

Motor insurance: compulsory for any farm vehicle or private car/jeep which uses the public roads.

QUESTION 5.

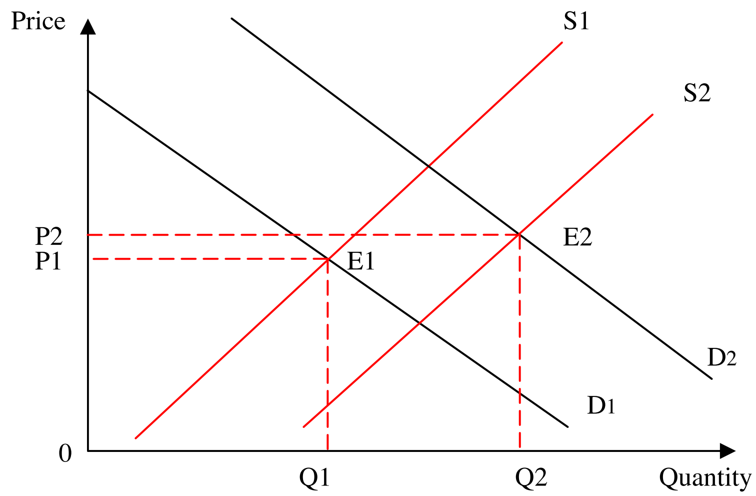
(a) Outline four contributions agriculture can make to a country's economic growth.

- The production of food and raw materials at a relatively low price.
- The release of agricultural labour for the production of other goods and services.
- Excess production of agricultural goods on the domestic market can contribute to exports.
- Increased farmer income leading to improved economic growth.
- Increased output in agriculture will aid growth in related industries e.g. suppliers and food processing.
- Agriculture makes a significant contribution to environmental protection.

(b) Many emerging economies (such as China and India) are experiencing significant population growth and increased real income per capita. These countries are also adopting new agricultural technology and new husbandry methods.

Discuss with the aid of a diagram, the impacts these changes may have on the following:
(i) The demand for food **and** the supply of food in these countries.

(ii) The equilibrium price for food in these countries.



(i) The demand for food and the supply of food in these countries:

Increase in population and real incomes will lead to an increase in demand for agricultural products in developing countries (D1 to D2).

On the other hand, improved technology and husbandry methods will lead to increased supply of agricultural output (S1 to S2).

(ii) **The equilibrium price for food in these countries:**

Where both demand and supply increase, market output will increase (Q1 to Q2), but the change in market price will be indeterminate (increased demand will be inclined to push the market price up, while increased supply will be inclined to push it down).

Where the increase in demand for agricultural output is met by a proportional increase in supply, agricultural output can be expected to increase with little change in prices.

However, for many developing countries, the increase in demand is not being met by increased supply. Thus, food prices can be expected to increase.

QUESTION 6.

Discuss how each of the following contributes to the development of Less Developed Economies (LDCs). In your answer refer to the benefits and limitations associated with each:

(a) The provision of food aid through United Nation's World Food Programme:

Benefits:

- Provides food aid to people who are unable to produce or acquire enough food for themselves or their families
- The direct transfer of food produce from developed to developing countries (where malnutririon may exist) is desirable in terms of equity and justice.

Limitations:

- It is an expensive undertaking because farmers in the developed countries have to be paid to produce the food and transport and distribution may have to be paid for by the donor country.
- Serious logistical problems about delivering the food to the hungry with the result that much of the food never reaches its intended destination.
- Food aid may dislocate commercial trade because exporting countries may feel that commercial markets would exist in some countries if these countries were not getting free food.
- Food aid may dislocate native production because when a country receives free food it might come to depend on such supplies to the detriment of its native production.

(b) The development of free trade in agricultural produce through the World Trade Organisation (WTO):

Benefits:

- Ending of trade barriers in agriculture such as tariffs and quotas, particularly in the EU and US.
- For many LDCs, the production and export of agricultural produce is an important source of income.
- The dismantling of trade barriers will provide an opportunity for LDC food exporters to gain greater access to large markets such as the EU and US.
- Reduction of over-production and market dumping on world markets.
- Preservation of freedom of both the producer and consumer against the supervision and controls of government bureaucrats and planners.
- Developed countries could improve the unfavourable terms of trade of LDCs by paying higher prices for the exports of the LDCs.

Limitations:

- Resistance to free trade measures in EU and US to perceived need to protect domestic agriculture and secure food supply.
- Lower prices leading to lower incomes for farmers.
- Unstable prices and incomes for farmers.
- Small farmers are pushed out of farming.

(c) **The activities of non-governmental organisations such as Concern and Trócaire:**

Benefits:

- Technical and financial aid (including capital goods) with no strings attached.
- Agricultural development, medical aid, educational and social activities all provided – they help to encourage forward planning in LDCs.

Limitations:

- Organisations may have difficulty in securing sufficient funds.
- Logistical problems – transport, black market.
- Difficulties in gaining access to certain countries.
- The need to ensure the security of their workers.
- Supports may not get to the intended recipients.