UNIVERSITY OF FORT HARE

AGRICULTURAL DEVELOPMENT

AGE 405

SUPPLEMENTARY EXAMINATIONS

NOVEMBER 2025

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Time:	3 HOURS
Subject:	AGRICULTURAL DEVELOPMENT
Subject code:	AGE 405
Marks:	100

This question paper consists of 8 pages including the cover page

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INSTRUCTIONS

Answer all questions in both Part A and Part B.

PART A

{65 points}

Question 1

[10 points]

1.1 Define agricultural value added and explain how it differs from agricultural output. [4 marks]

1.2 Discuss why agriculture's share of GDP often declines over time, even when output increases. [6 marks]

Question 2

[5 points]

Suppose you are presented with a series of agricultural value added for South Africa from 1980 through 2024 in 'current prices'. You realise this is of little use to you, so you want to control for inflation to create another series in terms of 'constant prices'. Describe the main steps for doing so.

Question 3

[10 points]

Discuss the relationship between mechanisation, agricultural development, and agricultural employment.

Question 4

[10 points]

4.1 By 'agricultural employment', we typically mean both agricultural self-employment, and wage employment on farms. Discuss these two forms of agricultural employment as they relate to what agricultural sectors typically look like in developing countries versus developed countries. [6 points]

4.2 Now consider the case of South Africa, in which settler colonialism created an agricultural sector with a distinct structure, i.e. not typical of either developing countries or developed countries. Comment on the implications for the predominant type(s) of agricultural employment. [4 points]

Question 5

[15 points]

5.1 Outline two key differences between customary and statutory tenure regimes in the context of sub-Saharan Africa. [5 marks]

5.2 Explain how tenure security affects agricultural investment, and the relationship between tenure security and tenure regime. [10 marks]

Question 6

[15 points]

The South African government introduced the Cannabis Masterplan some years ago, with Version 5 released in July 2023. The Masterplan is overseen by the Department of Trade, Industry and Competition (DTIC), and aims to transition South Africa from informal and fragmented cannabis cultivation to a regulated, economically-driven cannabis and hemp industry.

At present, only two legal routes for farmers exist: 1) medical cannabis cultivation, which requires one to meet strict regulatory, operational, and legal requirements, while paying a licensing fee of R25 200; and 2) industrial hemp cultivation (hemp is a variety of cannabis grown for its fibre), which also requires one to meet strict regulations, not least that one's hemp plants have below 0.2% THC. (THC is the chemical that gives cannabis its hallucinatory properties.)

Currently, South African farmers are not permitted to grow cannabis for sale to the recreational market. While private cultivation, use, and possession are allowed under the Cannabis for Private Purposes Act (signed in 2024), commercial sale and distribution of recreational cannabis remain illegal, and may remain so.

You are in the policy unit of the Eastern Cape's Department of Agriculture. Your HOD has tasked you to draft an analysis to assist the Department to come up with a clear position that it can use to influence national policy. You are asked specifically to focus on the fact that, at present, there appear to be approximately 40 000 smallholder cannabis farmers in the Eastern Cape who produce cannabis commercially, and therefore illegally.

For purposes of this exam, you must:

6.1 Outline 3 distinct policy options that could be considered regarding smallholder cannabis production. [9 points]

6.2 Identify two disadvantages of each of these 3 policy options you have identified, taking care to consider externalities. [6 points]

PART B

{35 points}

Consider the brief profiles of the two countries below, and then address the questions that follow.

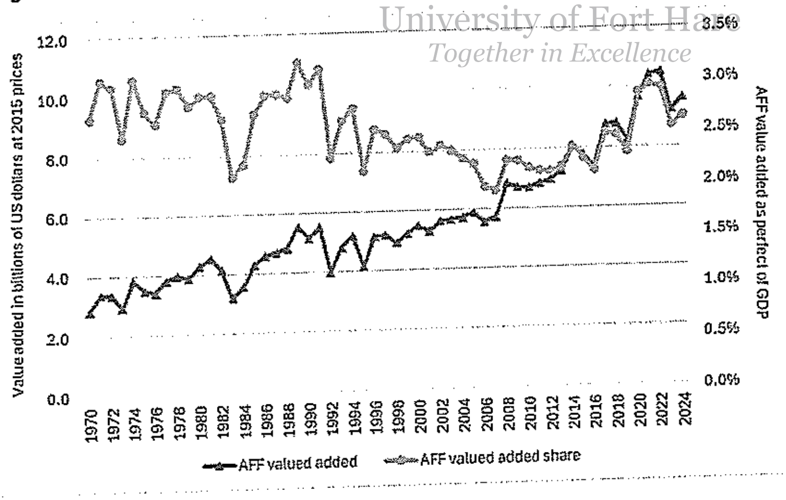
South Africa

South Africa is a country in Southern Africa. As of 2022 the population was estimated at about 62 million people, of whom 44% are younger than 25 years-old, and of whom 68% are urban.

Although South Africa is regarded as a middle-income country with a GDP per capita of about $7000, the country is also characterised by extreme inequality, which continues to have a strong racial dimension despite the move to multi-racial democracy in 1994. Moreover, although there has been some growth in the past decade, it has barely kept pace with population growth, such that per capita GDP has remained flat (not shown). In fact for the period 2010 to 2019, average annual growth of the economy was only 1.7% in real (inflation-adjusted) terms.

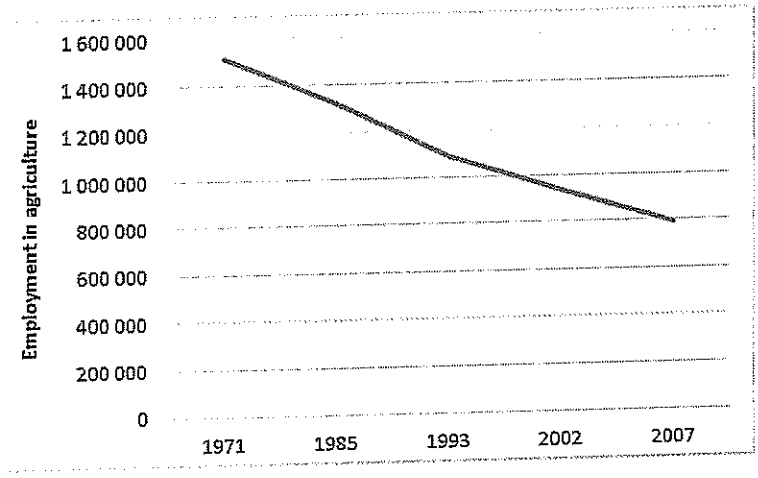
Although agriculture continues to grow in inflation-adjusted terms, it accounts for less than 3% of GDP, and yet its share of GDP continued to slowly decline until about 2006, whereafter it increased somewhat. (See Figure 1.) At present agricultural value added amounts to about $9 billion per year (at 2015 prices).

Figure 1: South Africa's agricultural value added and value added share



Employment levels in the agricultural sector at present are somewhat uncertain due to weak and inconsistent statistics. As far as we know, the agricultural sector employs about 800 000 to 900 000 people in wage jobs, of which about half are seasonal and the other half are 'permanent'. This amounts to about 5% to 6% of total wage employment in the country. Despite some uncertainty about current levels and recent trends, the long-term trend is quite clear, as seen in Figure 2.

Figure 2: Employment in South African agriculture sector



However, it is important to note that there are in addition about 2 to 2.5 million households involved in small-scale agriculture, which is mainly subsistence-oriented (i.e. for own consumption). This number appears to be slowly declining. (Note that in many counties, it is common to combine 'employment' and 'self-employment' in agriculture into one trend, given the prevalence of small, family farms and the fact that employment and self-employment are not necessarily very distinct categories; in South Africa, however, the dualism of the sector is such that the convention is to distinguish wage employment on large-scale commercial farms from self-employment in small-scale farming.) Overall, South Africa has an on-going unemployment crisis, whereby more than 30% of the labour force is unemployed. A large number of households in South Africa depend on social transfers (eg grants) in order to survive.

South Africa is a relatively dry country of which only 14% of the land area is suitable for cultivation, of which one sixth is within the former homelands. Livestock and livestock products account for about half of agricultural gross income, while field crops account for 21%, and horticulture for 29%. Statistical evidence shows that the livestock sector employs very few people, while a hectare of irrigated farmland on average absorbs about 10 to 15 as many workers as a hectare of non-irrigated arable farmland. The main crops are maize, wheat, fruit and wine, sugar cane and potatoes. The main livestock species by production value are cattle, poultry, sheep and goats, and pigs.

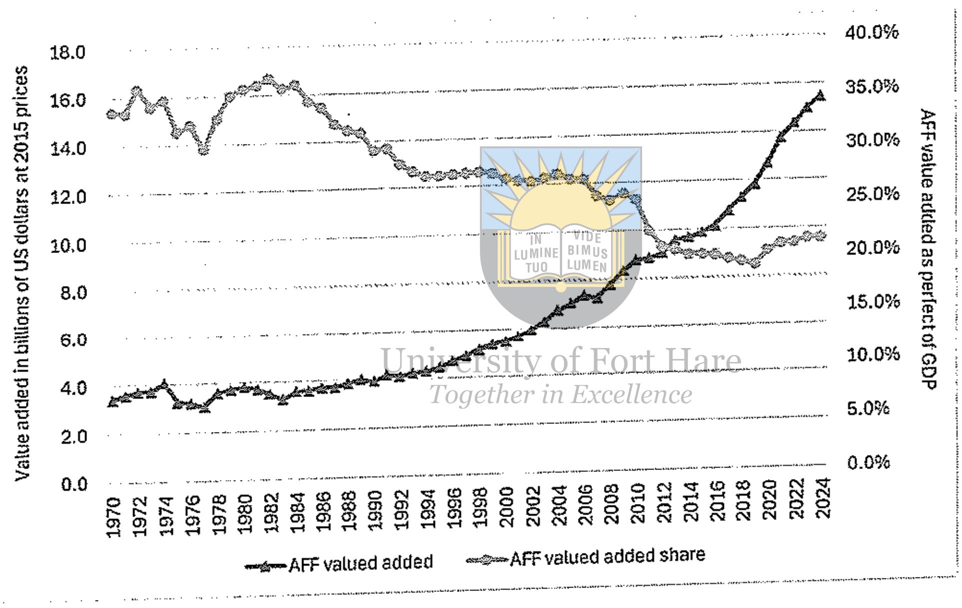
The vast majority of the measured economic contribution of agriculture is attributed to the large-scale commercial farming sector. This sector is characterised by private freehold tenure, in which owners have more or less exclusive rights based on title deeds. Average farm size is in the order of 2000 hectares, of which the majority is extensive grazing. The majority of small-scale farmers, on the other hand, reside in so-called 'communal areas' where most land is held in terms of customary tenure with somewhat limited rights. Arable plots are typically 2 hectare or less, while households also have access to communal grazing, which tends to be highly congested.

South Africa's agricultural trade balance is positive; over the period 2015-2022, on average the value of agricultural exports exceeded that of agricultural imports by 55%.

Ghana

Since 1970, Ghana's agriculture sector has grown in absolute terms by a factor or 4; however, almost all of this growth occurred since the mid-1990s, meaning over the past 3 decades. Meanwhile, agriculture's share of national GDP has steadily declined. Agricultural output and productivity have increased modestly, with the sector averaging around 3% to 4% annual real growth since the late 1990s, below the ambitious targets set in national strategies but nevertheless contributing substantially to poverty reduction and food security.

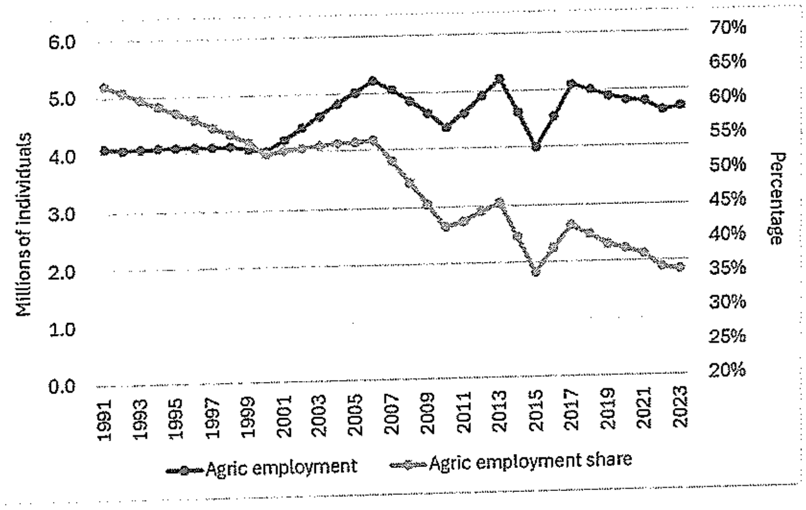
Figure 3: Ghana's agricultural value added and value added share



In addition to the robust growth of its agricultural value added, in the past few decades Ghana has managed to develop its export-oriented agro-processing sector in relation to products derived from cocoa, horticulture, and oil palm. However, even these subsectors remain dominated by primary production. Moreover, most smallholders remain locked in low-value, low-input systems (Diao et al., 2019). Droughts, floods, and climate variability, particularly in northern regions, continue to cause periodic output volatility.

Agriculture remains the most important sector for employment. Over the past 30 years, the absolute number of people in agriculture has ranged between 4 and 5 million, with little discernible trend up or down (see Figure 4). At least 95% of those employed in agriculture, are self-employed, on small-scale farms based on family labour. However, in terms of the share of those employed who are employed in agriculture, there is a strong downward trend, from over 60% in the early 1990s, to 35% in 2023.

Figure 4: Ghana's agricultural employment in absolute and relative terms



Roughly one-third to two-fifths of Ghana's agricultural land is arable. Ghana's main crops are highly diversified by agro-ecological zone. Ghana is the world's second-largest cocoa producer, exporting beans and value-added products. Cocoa – which is produced in the wetter, southern forest belt – accounted for 13% of all exports in 2023. Other cash crops include oil palm, groundnuts, cowpeas, oranges, pineapples, cashew, cotton and tobacco. In terms of staples, in the south and central parts of the county, tubers are especially important, such as cassava, yam, cocoyam and sweet potato; maize is widely grown nationwide, followed by rice, millet, and sorghum, especially in the north. A key challenge is that bad roads and limited transport options restrict access to markets, causing high post-harvest losses.

Livestock production is concentrated in the drier north, constrained by tsetse fly in the south and low-quality forage elsewhere. Main species include cattle, goats, sheep, chickens, and pigs.

Ghana's land tenure landscape is dominated by a complex mix of customary and statutory systems. Over 80% of land is held under various forms of customary tenure, managed by traditional authorities. Around 60% of these farms are less than 1.2 hectares; another 25% are between 1.2 and 2 hectares. The vast majority of staple production as well as cocoa production comes from the smallholder sector. Customary tenure is generally secure for community members but typically lacks formal documentation. As in other parts of West Africa, migrants from the drier north frequently seek to settle and farm in the south, where rainfall is more stable and market opportunities are more abundant; they typically rent land from local community members, sometimes as sharecroppers; conflicts are not uncommon due to the informal nature of these arrangements.

Formal, documented tenure applies mainly to medium and large commercial farms, many of which are in peri-urban areas. Medium and large-scale farms can range from 10 hectares to several hundred hectares. The biggest farms in Ghana are mainly found in the northern and transitional ecological zones and are owned by a mix of foreign companies, local elites, upscaling commercial farmers, and sometimes managed as outgrower partnership models; nearly all rely on long-term leases from customary landowners, sometimes leading to disputes if local residents feel they were not consulted regarding arrangements that result in local land scarcity.

Despite significant agricultural exports (led by cocoa), Ghana imports a significant amount of food. In 2023, agricultural exports were about USD 3.2 billion, but food imports were at least USD 3.0 billion. On top of that, Ghana imports in the order of USD 200 million per year in agricultural inputs (mainly chemical fertilisers), and exports very little in the way of agricultural inputs.

The Ghanaian government has promoted agricultural modernisation through input subsidy programmes, irrigation investments, extension, and interventions like "Planting for Food and Jobs." Results have been mixed – there are measurable productivity gains, but little discernible transformation at scale.

[18 points]

Question 7

Consider the following three aspects of the agricultural sectors of South Africa and Ghana. For each, of these three aspects: i) outline the similarities and differences between the two countries, and ii) explain why the similarities or differences exist. For instance, how do farm sizes and tenure compare and contrast between South Africa and Ghana, and what accounts for these similarities and/or differences?

The three aspects upon which you must comments are as follows:

7.1 Agricultural value-added and value-added share [6 points]
7.2 Agricultural employment trends [6 points]
7.3 Agriculture's contribution to the trade balance [6 points]

[17 points]

Question 8

Suppose you are appointed to be an advisor to Ghana's Minister for Agriculture. The Minister is especially keen to hear your advice on formulating a new, comprehensive strategy aimed at the country's smallholder sector.