



# **Agricultural productivity growth, employment and poverty in Egypt**

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# Introduction

- **Objective:**

**to investigate the importance of agricultural productivity growth in generating employment and in alleviating poverty in Egypt.**

# Questions to be addressed

- 1. How important is agriculture for income and employment generation in Egypt?**
- 2. What is the relationship between agricultural productivity and poverty reduction?**
- 3. What are the contributions of agriculture to income and employment in rural areas?**
- 4. What needs to be done to increase the contribution of agriculture to rural development?**

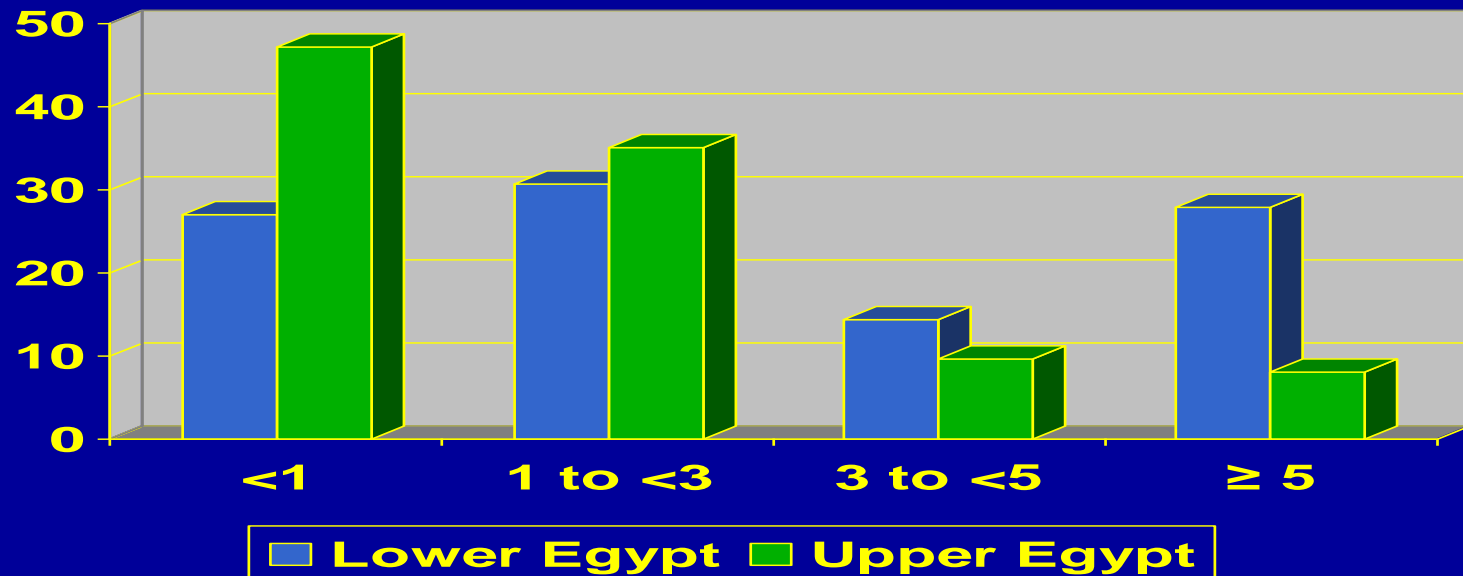
# **0. Overview of Egyptian agriculture**

- Importance of agriculture.**
- Cropping seasons and pattern of agriculture.**
- Old lands (85%) and newly reclaimed lands (15% of cropped area).**
- Focus is on old lands of the Nile valley and delta.**
- The analysis is based on the results of two surveys:**
  - the Agricultural Farm Income Survey (AFIS), 2000/2001,**
  - the Household Income and Expenditure Consumption Survey, HIECS, 2004/2005.**

# 0. Overview of Egyptian Agriculture

- Old lands are characterized by small landholdings

Percentage distribution of farms by size of landholding in Lower and Upper Egypt



Source: Moursi et al. 2004, based on AFIS, 2000/2001.

# 0. Overview of Egyptian agriculture

**Important differences in factor and input use – due to variations in the structure of production and factor endowments - between north and south are observed.**

**In general:**

- **Low share of *physical capital stock* in costs particularly in Upper Egypt.**
- ***Labor intensive techniques*, reliance on family workers in smaller landholdings supplemented by salaried workers in larger farms.**
- ***Draft animal power* is a substitute for human labor, particularly in the south.**
- ***Irrigation water* is a non-cash factor that is uneconomically utilized.**
- ***Purchased inputs* prices are higher in Lower than in Upper Egypt, evidence of quality differentials in favor of the north.**

# 0. Overview of Egyptian agriculture

**Based on net farm income (NFI) estimates, farmers who grow non-traditional crops are more capable of raising their income.**

**Area and NFI shares for traditional and non-traditional crops in Lower and Upper Egypt (percent)**

	Area		NFI	
	Lower	Upper	Lower	Upper
<b>Traditional crops</b>	<b>57.4</b>	<b>92.9</b>	<b>39.7</b>	<b>87.6</b>
<b>Non-traditional crops</b>	<b>42.5</b>	<b>6.8</b>	<b>60.3</b>	<b>12.2</b>

Source: Moursi et al. 2004, based on AFIS, 2000/2001.

# **1. How Important is agriculture for income and employment generation in Egypt?**

- One way to assess the contribution of agriculture to poverty is to look at its share of total household income and of employment in rural Egypt.**



# 1. How important is agriculture for income and employment generation in Egypt?

- **Source of Income**

**Income shares by quintile, sources of income and employment status in rural Egypt, 2005 (percent)**

Quintiles	Agriculture			Non-agricultural activities			Other sources
	Wage	Self-empl.	Total	Wage	Self-empl.	Total	
<b>1</b>	<b>13.8</b>	<b>33.0</b>	<b>46.8</b>	<b>33.6</b>	<b>10.4</b>	<b>44.0</b>	<b>9.2</b>
<b>2</b>	<b>8.9</b>	<b>36.7</b>	<b>45.6</b>	<b>34.2</b>	<b>11.3</b>	<b>45.4</b>	<b>9.0</b>
<b>3</b>	<b>5.7</b>	<b>38.5</b>	<b>44.2</b>	<b>35.0</b>	<b>10.9</b>	<b>45.9</b>	<b>9.9</b>
<b>4</b>	<b>4.0</b>	<b>36.2</b>	<b>40.2</b>	<b>35.2</b>	<b>13.0</b>	<b>48.2</b>	<b>11.6</b>
<b>5</b>	<b>2.0</b>	<b>31.3</b>	<b>33.3</b>	<b>32.4</b>	<b>15.9</b>	<b>48.3</b>	<b>18.4</b>
<b>Total</b>	<b>5.4</b>	<b>29.6</b>	<b>40.0</b>	<b>33.9</b>	<b>13.1</b>	<b>47.0</b>	<b>13.0</b>

Source: Calculated from HIECS, 2004/2005.

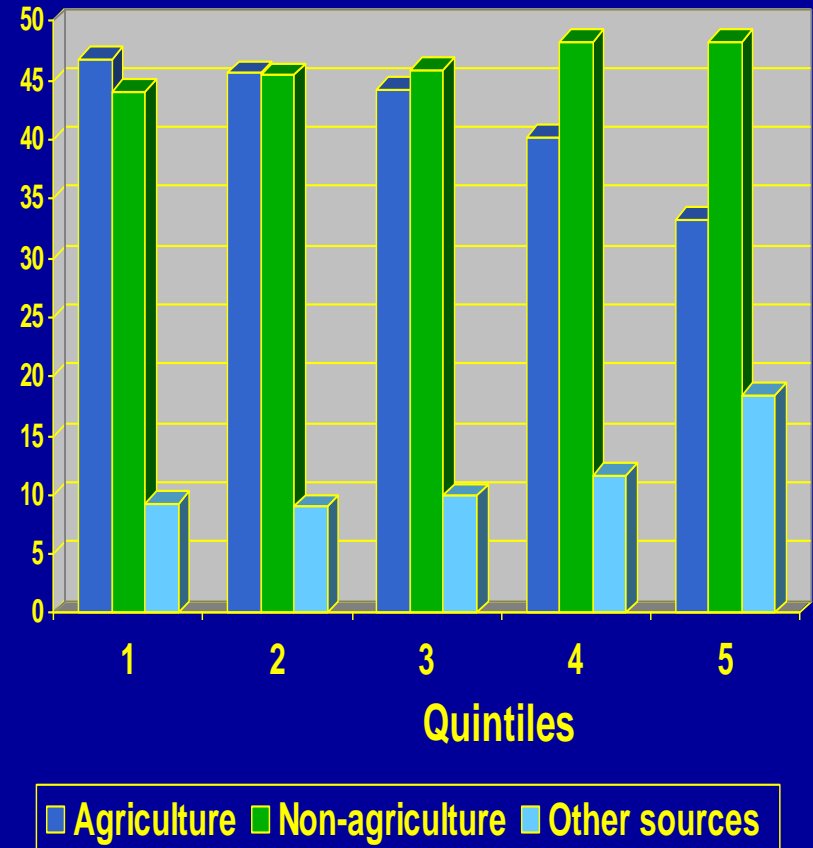
# **1. How important is agriculture for income and employment generation in Egypt?**

- Although agriculture does not provide the only source of income to the rural poor, it remains the most important source, followed by wages earned in off-farm activities.**
- Agriculture is an important source of income even for the highest quintile, which derives a significant proportion of income from non-farm sources.**
- Agriculture appears to be a more important source of income in Upper rural Egypt (44.7%) compared with its share in Lower rural Egypt (37%).**
- Non-agricultural activities provide almost half the incomes earned in the north, as opposed to a share of 42.3% in the south.**

# 1. How important is agriculture for income and employment generation in Egypt?

- The shares of other sources of income are almost equal in the two regions (13%).
- In both regions, agriculture has a higher contribution to income in the lowest three quintiles with a share significantly higher in rural south than in the rural north.

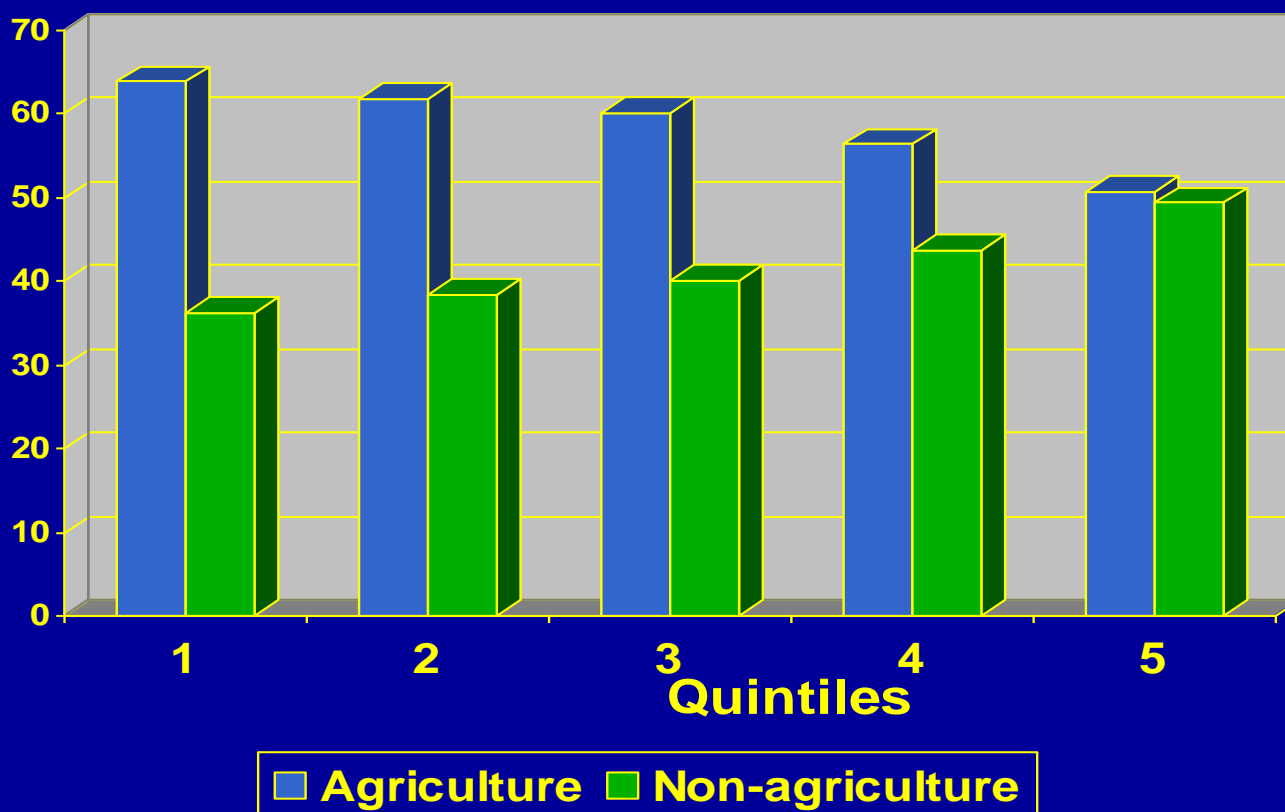
Income shares by quintile,



# 1. How important is agriculture for income and employment generation in Egypt?

## • Distribution of rural employment

Distribution of Employed by activity, working status and expenditure quintiles in rural Egypt, 2005 (percent)



# 1. How important is agriculture for income and employment generation in Egypt?

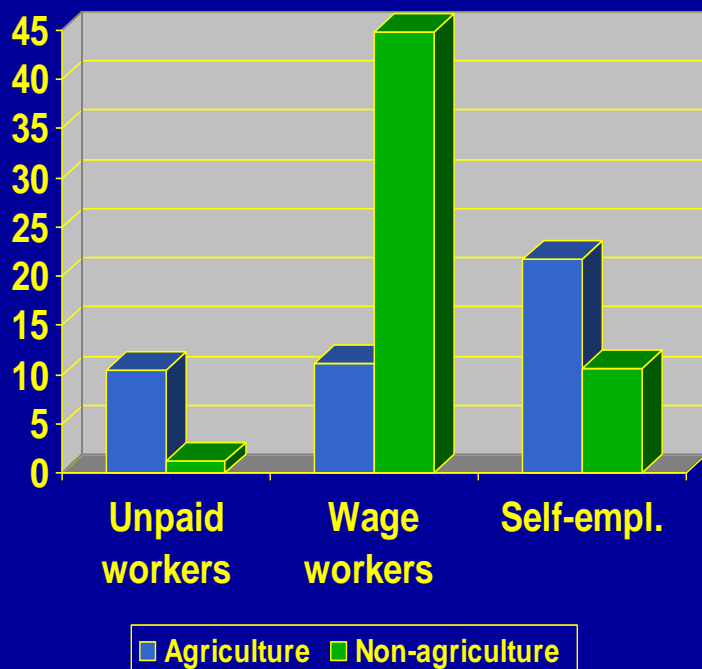
- **Agriculture provides a high share of employment in rural Egypt exceeding 57.9%.**
- **Around 20% of the workers are engaged in unpaid farm activities.**
- **Off-farm activities provide employment to 42.1% of the employed. Their importance increases with the level of income.**
- **Comparing the distribution of employment and the shares of income by quintile, confirms that poverty incidence is higher in agricultural occupations.**
- **Agriculture is a more important field of employment in the south (62.4%) than in the north (54.8%), yet the shares of income in agriculture are much lower.**
- **Unpaid workers are mostly concentrated in farming activities, they are believed to have the highest rates of poverty.**
- **The relatively high concentration of poor employed in the two regions in farming justifies the focus on agriculture for poverty reduction.**

# 1. How important is agriculture for income and employment generation in Egypt?

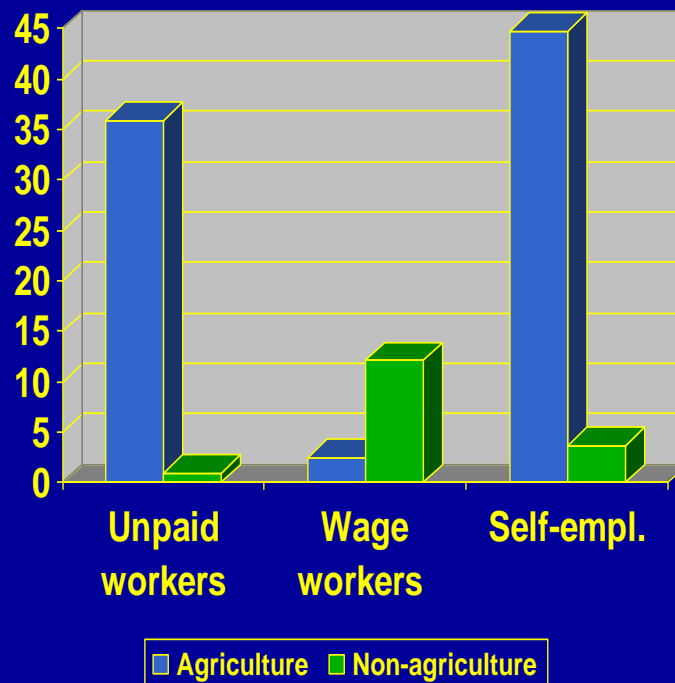
- Gender differentials
- Significant differences by gender are also noted in the pattern of employment by economic activity and work status.

Distribution of employment by economic activity, and gender (percent)

Males



Females



# **1. How important is agriculture for income and employment generation in Egypt?**

- Agriculture provides employment to 83.2% of females which are mostly engaged in non-wage work (36%) or as farm self-employed (45%), smaller percentages are engaged in agricultural wage work (2.5%).**
- Conversely, less than half rural males are engaged in agriculture (43.3%), predominantly as self-employed on-farm (22%), or as wage workers (11.1%) or unpaid family workers (10.5%).**
- Non-agricultural activities provide employment to more than half rural males (56.7%), mostly as wage workers (44.8%).**
- Females in off-farm activities are relatively scarce (16.8%); they are mostly engaged in wage work (12.1%).**

## 2. What is the relationship between agricultural productivity and poverty reduction?

- Productivity (output per unit of input) is the indicator used to evaluate the performance of a production unit or activity.
- It may be used in partial terms:
  - Output per agricultural worker or labor productivity,
  - Output per unit of land or land yield,
- Or in terms of total factor productivity (TFP).
- Output per agricultural worker output per unit of land  $\times$  land/labor ratio.



## **2. What is the relationship between agricultural productivity and poverty reduction?**

- **Five models have been estimated, regressing successively the logarithm of poverty incidence on**
  - 1. the logarithm of labor productivity.**
  - 2. the logarithm of land productivity.**
  - 3. the logarithm of land productivity and the logarithm of land to labor ratio.**
  - 4. an index of inequality, the Gini coefficient has been added to the previous model.**
  - 5. the logarithm of TFP.**
- **The results suggest that: agricultural labor productivity, land labor ratio, and TFP are significant determinants of poverty.**

## 2. What is the relationship between agricultural productivity and poverty reduction?

### Impact of agricultural productivity on poverty incidence in Rural Egypt

Variables	Expected Sign	Estimated Coefficients				
		Model 1	Model 2	Model 3	Model 4	Model 5
VA/Labor	Negative	<b>-0.930</b>				
VA/Land	Negative		<b>0.630</b>	<b>-0.272</b>	<b>-0.101*</b>	
Land/labor	Negative			<b>-0.992</b>	<b>-1.074</b>	
Gini	Positive				<b>1.545</b>	
TFP	Negative					<b>-0.191</b>
Constant		<b>6.677</b>	<b>-2.059</b>	<b>1.183*</b>	<b>-1.369*</b>	<b>5.125</b>
Sample size		<b>2864</b>	<b>2864</b>	<b>2864</b>	<b>2864</b>	<b>2864</b>

\* Starred items are not significant.

Source: Calculated from the AFIS, 2000/2001 and the 2004/2005 HIECS.

## **2. What is the relationship between agricultural productivity and poverty reduction?**

- Reestimating the models with regional dummies to test for regional differences between north and south rural Egypt confirms the importance of raising labor productivity in both regions to reduce poverty incidence.**
- Raising on-farm land labor ratios are also expected to reduce poverty incidence.**
- However, elasticity of agricultural employment with respect to growth in agricultural value added (0.29) and with respect to GDP (0.28), suggest that growth is not likely to highly stimulate agricultural employment.**
- Yet, the presence of farm / non-farm linkages may stimulate off- farm growth.**

### **3. What are the contributions of agriculture to income and employment in rural areas?**

- **Three levels of contributions: the farm, the rural economy and the national economy.**
- **The farm level:**
  - **influence of agricultural growth on poverty,**
  - **impact on the labor market.**
- **The rural economy:**
  - **Production linkages,**
  - **Consumption linkages,**
  - **Gains in welfare and in human capital,**
  - **Social capital formation,**
  - **More public investment in infrastructure,**
  - **Reducing food price.**

### **3. What are the contributions of agriculture to income and employment in rural areas?**

- **The national economy:**
  - **Decrease in price of food,**
  - **Transfer of resources,**
  - **Contribution to net foreign exchange,**
  - **Release of labor to other sectors with higher productivity jobs.**

## **4. What needs to be done to increase contribution of agriculture to rural development?**

- Global experience suggests that the main ingredients for agricultural and rural development are based on three pillars:
  - **Providing comprehensive farmer support services,**
  - **Strengthening farm / non-farm linkages,**
  - **Promoting rural SMEs.**

## **4. What needs to be done to increase contribution of agriculture to rural development?**

- **Comprehensive farmer support services include:**
  - **Investing in human development,**
  - **Investing in agricultural research and technological innovation and diffusion,**
  - **Developing well targeted extension services,**
  - **Investing in infrastructure: irrigation, roads and storage to improve access to remunerative markets,**
  - **Agricultural credit,**
  - **Supporting farmers organizations (agricultural cooperatives and farmers associations).**

## **4. What needs to be done to increase contribution of agriculture to rural development?**

- **Strengthening farm / non-farm linkages:**
  - **Promoting agroindustrial business in rural areas**
  - **Decentralization of decision making, strengthening local government and involving civil society**
  - **Supporting use of local inputs.**
- **Promoting rural SMEs requires multidimensional interventions including:**
  - **Facilitating access to credit**
  - **Disseminating information**
  - **Connecting small and isolated markets to larger markets**
  - **Strengthening SMEs through business development services**



**Thank You**