

Egypt's Reliance on Imported Wheat: Concerns, Challenges and Opportunities

Raghu Kandagatla¹ and Lal K. Almas²

¹Graduate Student and ²Associate Dean & Regents Professor

¹West Texas A&M University, Canyon, Texas 79016

Abstract

This study explores different aspects of food security in Egypt and provides insights and valuable information about challenges and opportunities for Wheat production and consumption in Egypt. With a population of 96 million and annual population growth at 2.27%, Egypt is considered one of the fastest-growing nations in the African continent. Egypt is the major producer of wheat in Africa with 8.8 million tons in 2017. Egypt is also the second-largest wheat importer in the world with 10 million tons alone in 2017. This study focuses on the country's wheat production, reliance on imports and consumption in the light of current population growth by using statistical procedures to forecast the wheat consumption given the projected population of the country by 2050. It also provides an overview of gap in wheat demand and supply as well as opportunities and challenges facing agricultural production and consumption to ensure food security in Egypt.

Introduction

Egypt has a total land area of 1,000,450 sq. km of which 3.6% is used for agriculture. Today, agriculture plays a major role in the Egyptian economy, contributing 14.5% of the country's gross domestic product. The agricultural sector accounts for 28% of all jobs. The main challenges for agriculture in Egypt are lack of area available for farming and water. Egypt is in need for perennial solutions to lower its dependency on the Nile water supply and to find sustainable alternatives such as desalination (Infomineo, 2020).

Data and Methods

The data on important economic indicators has been obtained from published sources that include Food and Agriculture Organization Corporate Statistical Database (FAOSTAT), Data Atlas, World Stat Info, Nations Encyclopedia and Encyclopedia Britannica. The data include variables such as production, consumption, imports of the wheat commodity in Egypt and population and the demography of Egypt for the period of 1961-2017. Data Analysis in Microsoft Excel was used to for linear regression analysis and forecasting through year 2050 Results are organized and presented in graphs and tables. Sensitivity analysis was also conducted for two scenarios at a 2% increase and decrease for population as well as production, consumption of wheat commodity.

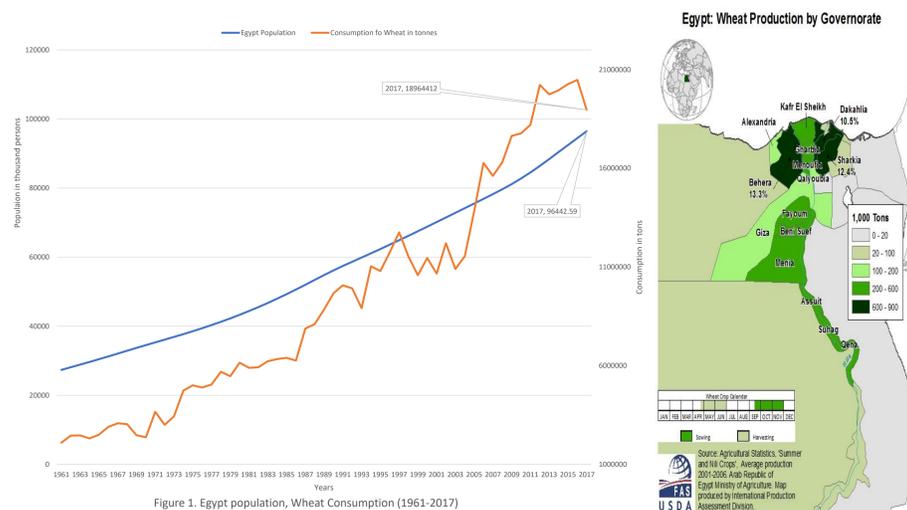


Figure 1. Egypt population, Wheat Consumption (1961-2017)

Results and Discussion

Results of historic population growth and wheat consumption in Egypt for 1961-2017 suggests that consumption was proportional to the total population of the nation and has shown an upward trend over time. The period for 2009-2017 has a significant increase in terms of the overall consumption of the wheat between 17 and 20 million tons. Whereas the population has shown an upward trend, Figure 1.

Results suggest that the population of Egypt in 2017 was around 97 million and at the current growth rate by 2050 the population would reach 169 million. Assuming the growth rate declines by 2%, the population estimates for 2050 would reach 166 million and if it increases by 2% rather than the current population growth rate by 2050 it is estimated to reach 172 million as shown in Figure 2.

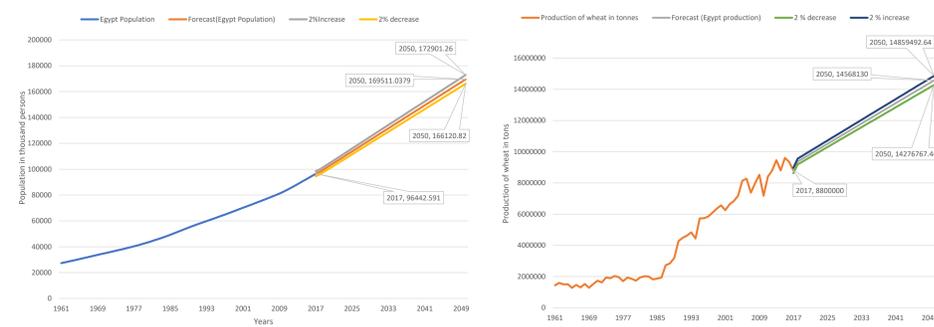


Figure 2. Population growth over time

Figure 3. Wheat production growth over time

It is observed that the production of wheat in 2017 was 8.8 million tons and would reach 14.5 million tons by 2050. With a 2% decline annually it would reach 14.2 million tons and with a 2% rise annually it would reach 14.8 million tons by 2050 as shown in Figure 3.

On the other hand wheat consumption in Egypt for 2017 was around 18.9 million tons and by 2050 the consumption would reach 40 million tons. Assuming the consumption of wheat declines at annual rate of 2% by 2050 it would reach 39 million tons and if the consumption increases by 2% by 2050 it is estimated to reach 41 million tons as shown in Figure 4.

Table 1 shows the data for population, production and consumption data for the baseline study period. The results suggest that there is an increasing food gap over time. The food gap estimates the necessity of wheat to feed the growing population of the nation and Egypt has a negative food gap indicating that Egypt has been importing more wheat to feed its population. As per estimates the wheat import would reach over 26 million tons by 2050. Therefore, a dire need exists to address Egypt's reliance on imported wheat to ensure food security in the country.

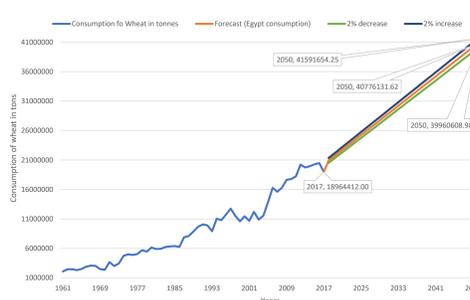


Figure 4. Consumption increase over time

Year	Population 000	Production MT	Consumption MT	Wheat Food Gap MT
1990	56,134	4,268,049	9,668,049	-5,400,000
2000	68,832	6,564,053	11,460,053	-4,896,000
2010	82,761	7,177,399	17,770,905	-10,593,506
2020	102,584	9,695,755	22,153,649	-12,457,894
2030*	124,893	11,319,880	28,361,143	-17,041,263
2040*	147,202	12,944,005	34,568,637	-21,624,632
2050*	169,511	14,568,130	40,776,132	-26,208,002

Conclusions

Wheat supply demand analysis from this study helps to understand the effect of ever growing population on the food security aspects in the country. Egypt should be focusing on increasing the availability of land for agriculture and increasing investments in the agriculture sector. As the population grows the requirement to feed the population increases. Egyptian government and all stakeholders should also focus on stabilizing the population and maintain a balance between the domestic production and consumption. It needs to explore alternative water resources to reduce its dependency on the water from Nile River for irrigated agriculture.

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Acknowledgment

Partial funding support has been provided by the Binational Fulbright Commission in Egypt (BFCE) under Fulbright Alumni Activity: Egypt Food Security Research Project (EFSP) grant, 2019-2020.



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