

Globalization and Food Security: Contribution of Agriculture Mechanization Through “Belt And Road” Initiative China

Gregory E. Yawson, Gremkay International, LLC, USA
Chamber of Agribusiness, Ghana
geyawson@yahoo.com

Epezagne Assamala Ingrid Ruth
Jiangsu University, China, Business Development and Relationships Manager Africa - China – Arab and Asia at African Agribusiness Incubator Network (AAIN), China

Akouatcha Guy-Harold
Jiangsu University China, in Management Sciences and Engineering - *Supervisor of transactions and commercialization of real estate at (GI-CI), China*

Abstract

In this article, we study the influence of globalization on food security. Globalization is the integration of national economies through trade, investment, capital flow, labor migration, and technology. Globalization is undeniable at every level and affect many sector including the agriculture industry. According to the world health organization (WHO) in the state of food security and nutrition in the world 2018, new evidence this year corroborates the rise in world hunger observed in this report last year, sending a warning that more action is needed if we aspire to end world hunger and malnutrition in all its forms by 2030. In a globalization effort across belt and road countries initiated by the Chinese government, many international students have had the opportunity to study in China, and act as a bridge between their respective countries and China. In addition, as home country of great number of manufacturing companies, China promote agriculture mechanization and provide agricultural machinery to belt and road countries. These globalization strategies have an impact in achieving food security worldwide. We speak of food security "when all people, at all times, have economic, social and physical access to sufficient, safe and nutritious food that satisfies their nutritional needs and dietary preferences to enable them to live active and healthy lives" stated by Food and Agriculture organization. For this research, we attempted to show how globalization across belt and road countries contribute to food security.

Key words: Globalization, Agricultural mechanization, China, belt and road, food security.

Introduction

This paper evaluates the correlation between globalization and food security. Currently globalisation has become the focus of debates due to its interdependence to other aspect such as food security. With an increase in population of more than 35% (Foley, 2014) in 2050, world

governments will be faced with the need to feed nine billion people. For this to be achievable, agricultural production should double, significantly surpassing population growth. However, with around 821 million in 2017, compared to around 804 million people hungry in 2016 (UN, 2017) in the world, global food security remain a big challenge. China as a rising economy put in place the «belt and road » initiative in an effort to strengthen international relations and play an active role in solving global issues including hunger which is of the seventeen (17) United Nations (UN) sustainable development goals. This strategy include promotion of agriculture mechanization and engaging with international talents among other plans. With its wide range of protests against various features of the world economy, globalization may provide answers to the question of food security that only few countries seems to have found an answer to.

Literature Review

Currently, since the “belt and road” of the People republic of china is ongoing, is it challenging to find empirical theory that can systematically show the effect of globalization and food security. Therefore, we rely on current implementation road map of “belt and road”, governments’ policies, previous research and books in the area of globalization and food security and make a qualitative analysis to deduce the relation between them.

China “belt and road” initiative



Source: Lowy Institute.

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Launched in 2013 as “one belt, one road” initiative (BRI), it involves China underwriting billions of dollars of infrastructure investment in countries along the old Silk Road.

The ambition is immense. China is spending roughly \$150bn a year in the 68 countries that have signed up to the scheme. In 2018 The initiative has attracted the largest number of foreign dignitaries to Beijing since the Olympic Games in 2008.

The BRI is much more than a series of one-off infrastructure projects. It is a well elaborated project seeking to establish connectivity between Asia, Europe and Africa and in that way to increase trade, development and prosperity. It has five key goals; shown in the diagram below.



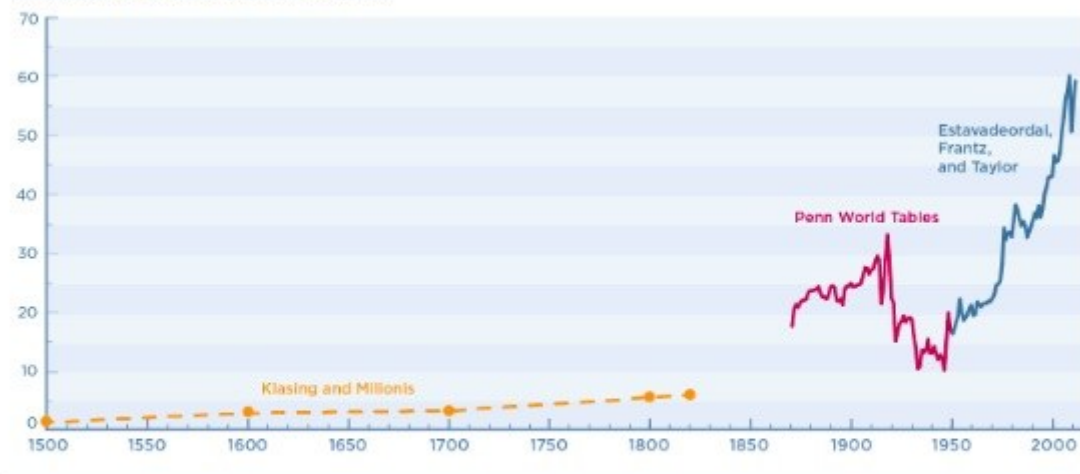
Globalization

Reflecting the world's economic interdependence, globalization is about goods, services, and supply chains. It involves Multinational Corporation, trade agreements, foreign exchange (cultural, academic, and much more).

Multilateral trade agreements became a framework for cooperation and in 1948 the General Agreement on Tariffs and Trade (GATT) was the first multilateral agreement to lower trade barriers. It was later in 1995, replaced by the World Trade Organization.

Trade has skyrocketed in the past century

World trade as percent of GDP (1500-2011)



Note: This chart compiles data from three sources. Data from 1500 to 1820 is the average of the upper and lower bound and only includes the years 1500, 1600, 1700, and 1820. Data not available from 1821-69.

Sources: See footnote 1 at OurWorldinData.org for full citations (<https://ourworldindata.org/international-trade#note-1>).

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Globalization strategies of the People Republic of China involve foreign direct investment, hire global talent and giving scholarship opportunities to international students specifically those from “belt and road” initiative signatory countries.

Globalization present advantages in many areas including food security. International trade directly affects food security through impact on food availability and indirectly through the impact on food accessibility and stability (Diaz-Bonilla et al., 2003; Smith, 1998. Each country faces different opportunity costs for the production of different goods and has a comparative advantage in. According to FAO (2003) and the World Bank (2007, 2012), more open trade policies contribute to food security through competition, specialization and efficiency, and will result in increased food production worldwide. An increased food supply is expected to result in lower food prices, better access to food and improved food security. Efficiency gains should contribute to economic growth and the creation of more jobs, higher incomes and improved access to food for non-farm populations. As a result, trade allows less well-endowed countries to rely on others to provide food for import when their own production is insufficient (World Bank, 2012).

Agriculture mechanization and food security

Mechanized agriculture is the process of using agricultural machinery to mechanize the work of agriculture, greatly increasing farm worker productivity.

Overview: status of agricultural mechanization in some selected countries

Tractors in use in selected countries ('000 Units)

Country	1965	1970	1975	1980	1985	1990	1995	2000	2005	2007
Japan	60	278	721.09	1 471.4	1 853.6	2 142.2	2 123	2 027.67	1 910.7	1 877
China	73	126.4	346.8	747.9	861.4	824.1	685.2	989.1	1 410.6	2 063.5
Thailand	5	7	7	18	31.4	57.7	148.8	439.1	780	830
India	48	100	227.7	382.9	607.8	988.1	1 354.9	2091	2 789	3 149
Kazakhstan	-	-	-	-	-	-	170.1	52.1	44.1	40.2
Egypt	14.5	17.3	21.5	36	51.9	57	89.1	86.3	98.1	102.6
Côte d'Ivoire	0.7	1.4	2.2	3.7	4.3	4.8	5.3	8.4	9.3	9.4
Nigeria	1	2.9	5.7	8.4	11.1	13.9	16.7	19.4	23	24.8
Kenya	5.7	7.3	6	6.5	9	10	11.2	12.2	13.4	14
Tanzania	16.8	17	13.6	10	8	7.4	7.5	16.3	21.5	21.5
U S A	4 800	5 270	5 120	4 726	4 670	4 426.7	4 344.1	4 503.6	4 470.9	4 389.8
Honduras	0.4	1.7	2.8	3.3	3.9	4.5	5	5.2	5.3	5.3
Brazil	114	165.9	323.1	545.2	666.3	728.8	791.2	797.5	789.6	776.9

Source: FAOSTAT-Agriculture website

The disparity is huge between those countries, and we can observe that the productivity of the countries with more machineries are much higher than others.

Research Methodology

Based on the theoretical framework of governments' policies, existing accredited agencies research and scholars work, we conducted this study. In order to gather this data, the main method of research employed was a comprehensive literature review.

The study proposes statement is to determine how globalization contribute to food security through belt and road initiative of the people republic of China. Also understand the different strategies used in executing this initiative and analyze their effectiveness. According to the results, the work conducts discussions, mainly including how the following aspect in agriculture mechanization and student-enterprise collaborations lead to the achievement of food security.

Purpose of the Study

This research is to analyze and deduce the impact of the "belt and road" initiative on the cause of global food security. This study will be guided by three main objectives:

- To understand the "belt and road" initiative of the People republic of China.
- Examine the correlation of globalization and food security, identify the advantages and disadvantages if any.

- To analyze the linkages agriculture mechanization and food security in Belt and Road countries as well as the scale and agricultural practices and implications on food security in this part of the world.

Research Findings

Globalization present advantages in many areas including food security. Domestically, China has announced that BRI is a positive enterprise of connectivity driven by a benign nation. Abroad, precisely in the western nations suspicions abound that china's economic situation is driving BRI. Though views might differ and opinions about can be mitigated, all must acknowledge the positive impact of the undergoing projects on food security. Globalization through "belt and road" initiative involve reaching out to countries in Africa, Europe, America and other parts of Asia.

Some of the majors projects implemented so far are:



Investments

Year	Investor	Quantity (\$ million)	Transaction party	Sector	Subsector	Country
2015	China General Nuclear	5960	Edra	Energy	Electricity	Malaysia
2016	State Grid	4490	CPFL	Energy	Electricity	Brazil
2016	Three Gorges	3660	/	Energy	Hydro	Brazil
2013	Zhejiang Hengyi	3440	/	Energy	Oil	Brunei
2014	CNPC	3000	Refineria del Pacifico	Energy	Oil	Ecuador



Construction contracts

Year	Contractor	Quantity (\$ million)	Transaction party	Sector	Subsector	Country
2014	China Railway Construction	6810	/	Transport	Rail	Nigeria
2013	China National Nuclear	6500	/	Energy	Nuclear	Pakistan
2015	China National Nuclear	4700	Nucleoeletrica	Energy	Nuclear	Argentina
2015	China Energy Engineering	3660	EISA	Energy	Hydro	Argentina
2015	China Railway Construction	3510	/	Transport	Rail	Nigeria

Source: The American Enterprise Institute.

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Discussions

Globalization has had many negative effects in some cases. Historically, Africa is the region most exploited by globalization: during the years of colonialism the world took its resources but gave back little in return. In recent years, Latin America and Russia have also been disappointed by globalization. They opened up their markets, but globalization did not deliver on its promises, especially to the poor. China's average growth over the past three decades has been triple that. These successes are partly due to globalization.

Some questions about the benefit of such cooperation have been raised by many scholars especially those from the West.

- Is the belt and road initiative really beneficial in the long term?
- Is there no hidden counterparties?

As independent nations, “belt and road” countries, have the ability and power to strengthen their internal systems to protect their respective states from some forced agreements in the future.

Promote food security through free trade

Trade between nations could have a positive impact. According to the WTO, trade has many benefits, including the promotion of peace, the reduction of the cost of living, and the adoption of the practice of good governance. In other words, perceiving food security as a policy framework is an example of what James Ferguson (1994) calls "an anti-political device". Transforming the symptom of poverty, it puts an end to politics. Instead, hunger and poverty by extension must be integrated into the specific economic systems of production, according to the modes of representation and powers in place (George, 1984). In 1996, the World Food Summit made a statement in Rome. Commitment Four states "we will strive to ensure that food and agricultural policies and trade as a whole promote food security for all through a fair and market-oriented global trading system" (ibid.). FAO, 1996).

Conclusion

In sum, following the above, globalization is a key factor in achieving food security worldwide and the “belt and road” initiation (BRI) enhance this impact. Trade agreements between china and many countries have been signed since the launch of the initiative. Due to cooperation among foreign and Chinese universities the number of international students in China has drastically increased over the past five (5) years. The benefits of this cooperation are so far numerous. However it is still important to be conscious of inflation treats and political instability. Also there is need to carefully scrutinize the applicants for study in China, and facilitate their social

integration. In addition, the mechanization of agriculture is clearly of great significance for food security because it enables the drastic increase in productivity and eliminates food waste along the agriculture value chain. But, manufacturing companies must ensure that these equipment are environmental friendly and are not harmful to human health in the long run.

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