

First Bank 2018 Agriculture Expo

Innovating for a Sustainable Green Economy



The United Nations Environment Programme (UNEP) defines the **green economy** as one that results in improved welfare of human beings and social equity, while significantly reducing environmental risks and ecological scarcities.

In its simplest expression, a green economy can be thought of as one which is

- I. low carbon
- II. resource efficient and
- III. socially inclusive



Agriculture

Low-carbon
Industrialization

Recycling and Waste
Management

Biodiversity

Forestry
Plantations

Eco-friendly Real
Estate

Renewable Energy



Why Focus on Agriculture?



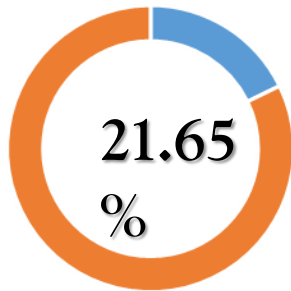
Markets Practice ...filling information gaps

Agriculture is a major contributor to Output and FX earning

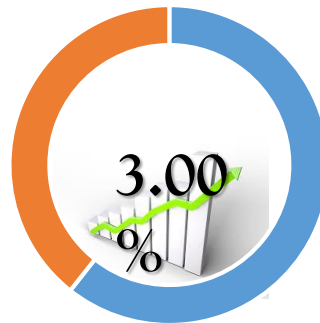
Top 5 Agriculture products (Production in thousand tonnes)

Landmass: 923,768
km²
Arable land - 82.0
million hectares

Cassava	Yam	Maize	Sorghum	Millet
66,258	44,661	17,124	16,360	11,388



Contribution to GDP



Real Growth Rate

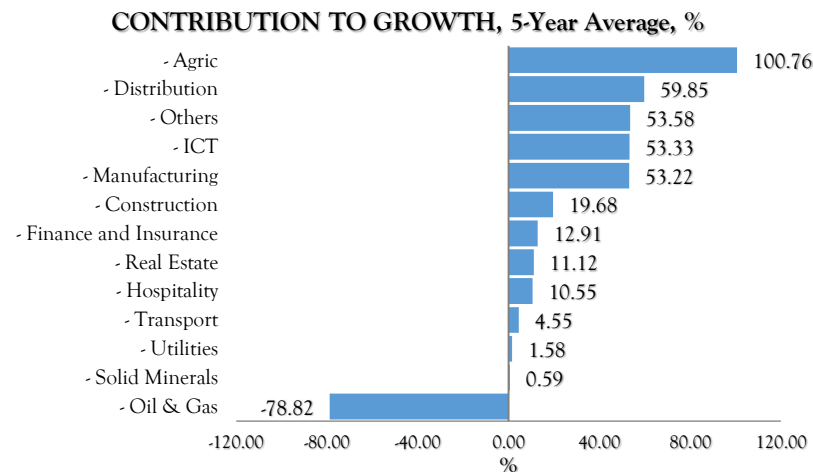
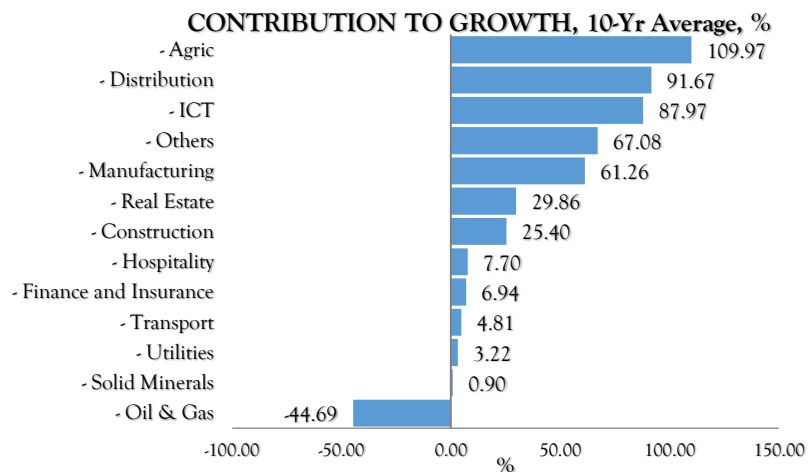
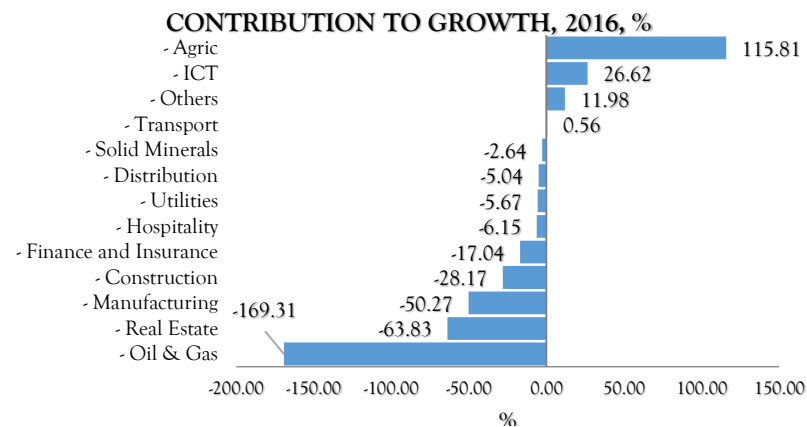
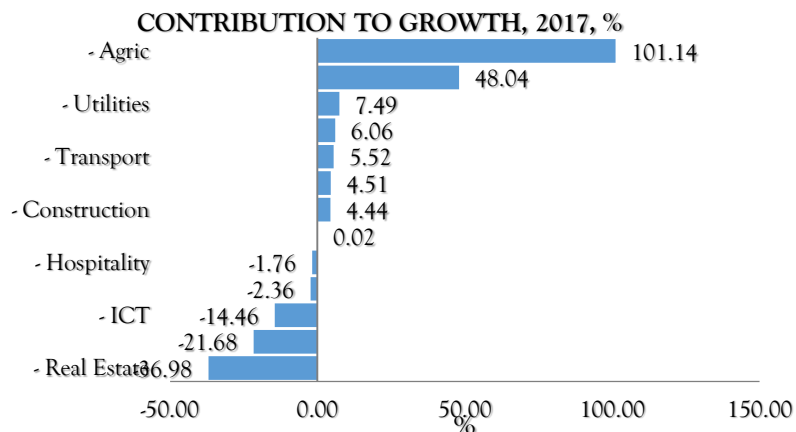


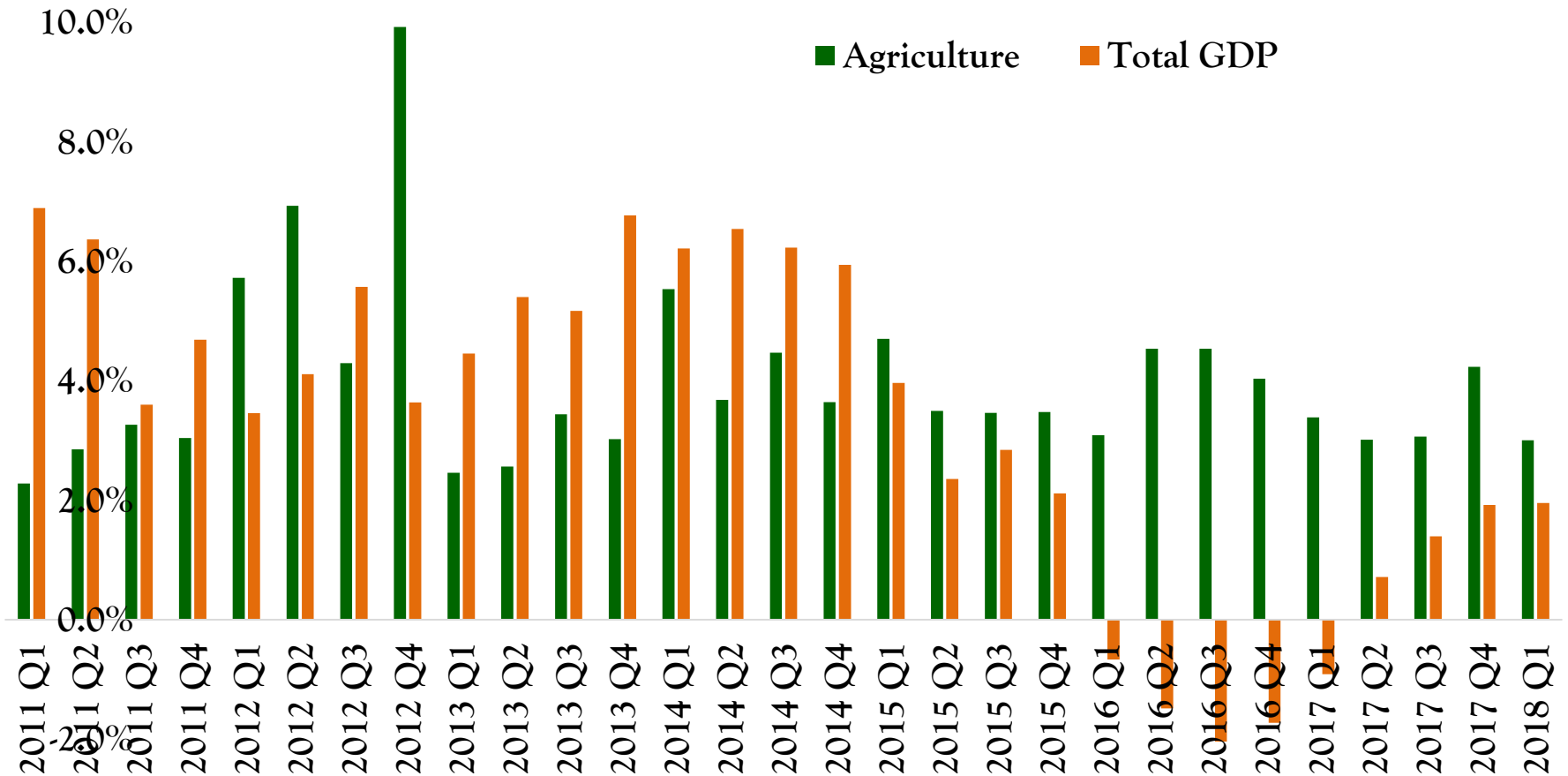
Agricultural Export
earnings



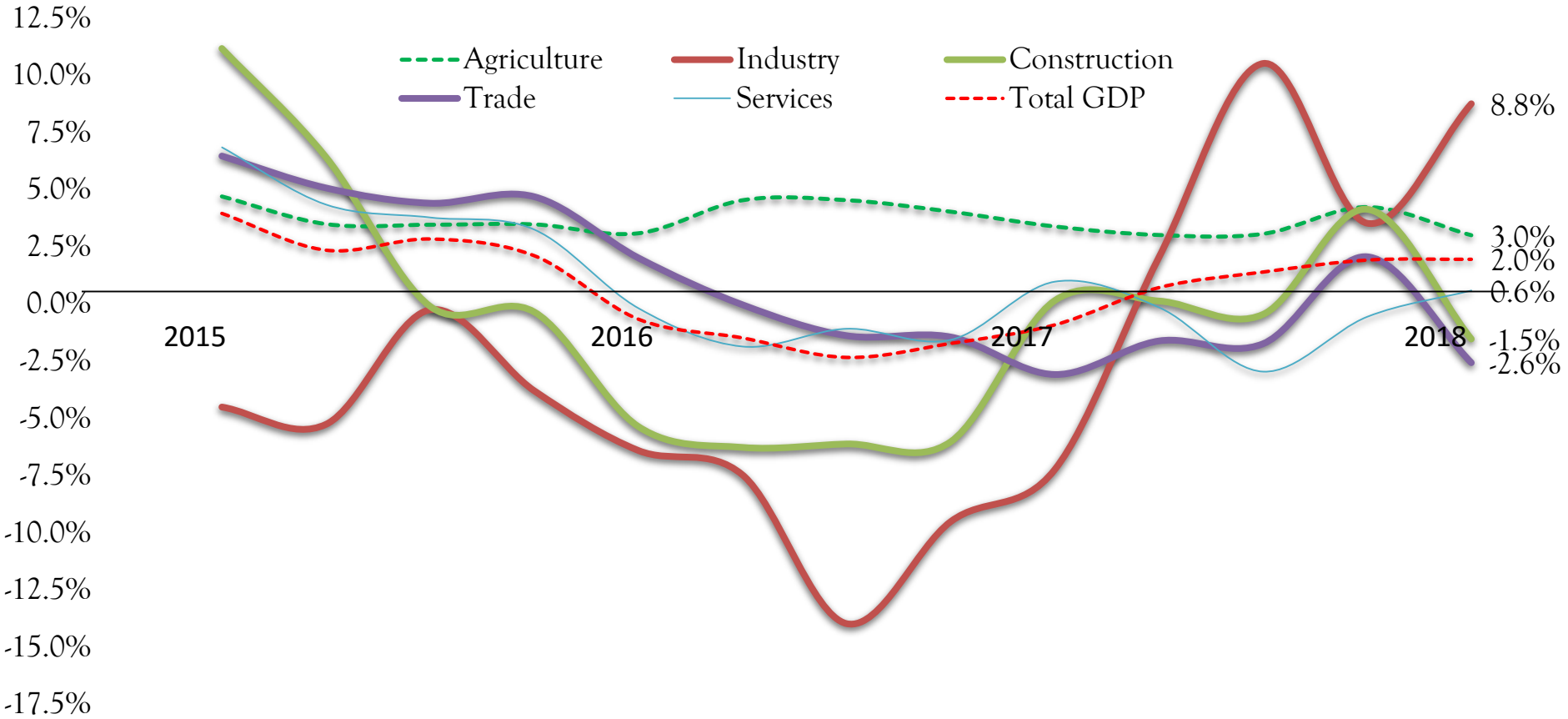
Food import
bill

The patterns of sectoral Contribution to Growth illustrate the primacy of the Agricultural sector as the economy's output mainstay

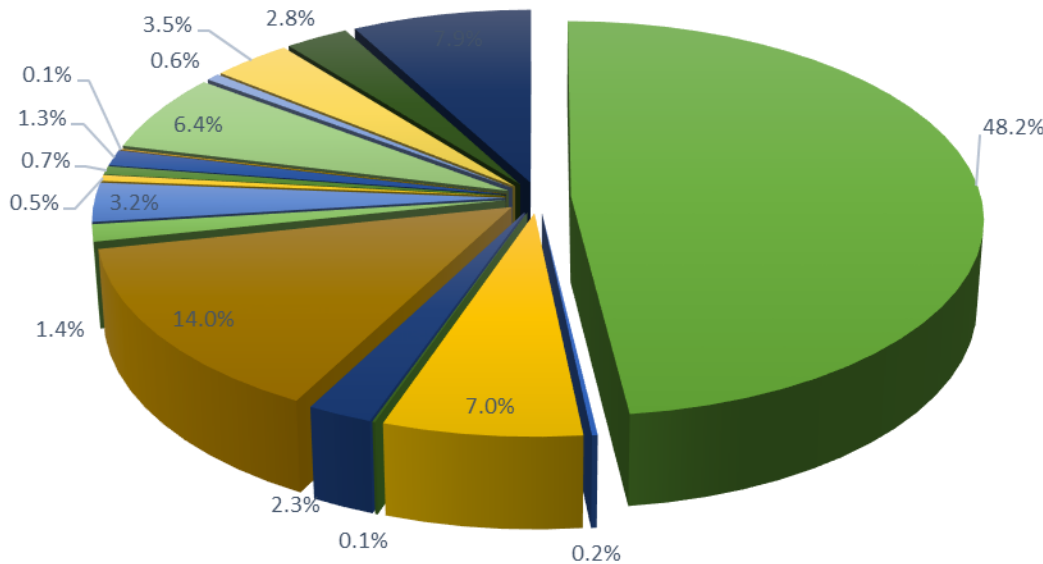




Size & Stability



Job Creation by Sector of the Economy



- Agriculture
- Oil, Gas and Solid Minerals
- Manufacturing
- Utilities
- Construction
- Trade
- Hospitality
- Transport
- ICT
- Arts, Entertainment & Recreation
- Finance and Insurance
- Real Estate
- Professional, Scientific & Technical Services
- Administrative & Support Services
- Education
- Health
- Other Services

2010

Labour Force: 61.5mn
 Employed: 48.5mn
 Unemployment Rate: 21.1%

2017

Labour Force: 85.1mn
 Employed: 77.5mn
 Unemployment Rate: 18%

Agricultural sector makes a limited contribution to our trade balance

Top 5 Agriculture exports - Exports in US\$ million

Cocoa	Oil Seeds	Fruits & nuts	Milk	Spices
698	216	156	68	48



Top 5 Agriculture imports - Imports in US\$ million

Fish	Wheat	Sugar	Milk	Oils
1,461	1,070	373	295	250



Sources: World Bank, NBS, FMARD & UNCTAD



The case for innovation?

Markets Practice ...filling information gaps

Population Growth

- By 2050 we will need to produce almost 50% more food, feed and bio-fuel than we did in 2012
- Increase in population of middle class, and change in dietary patterns will fuel increase in demand

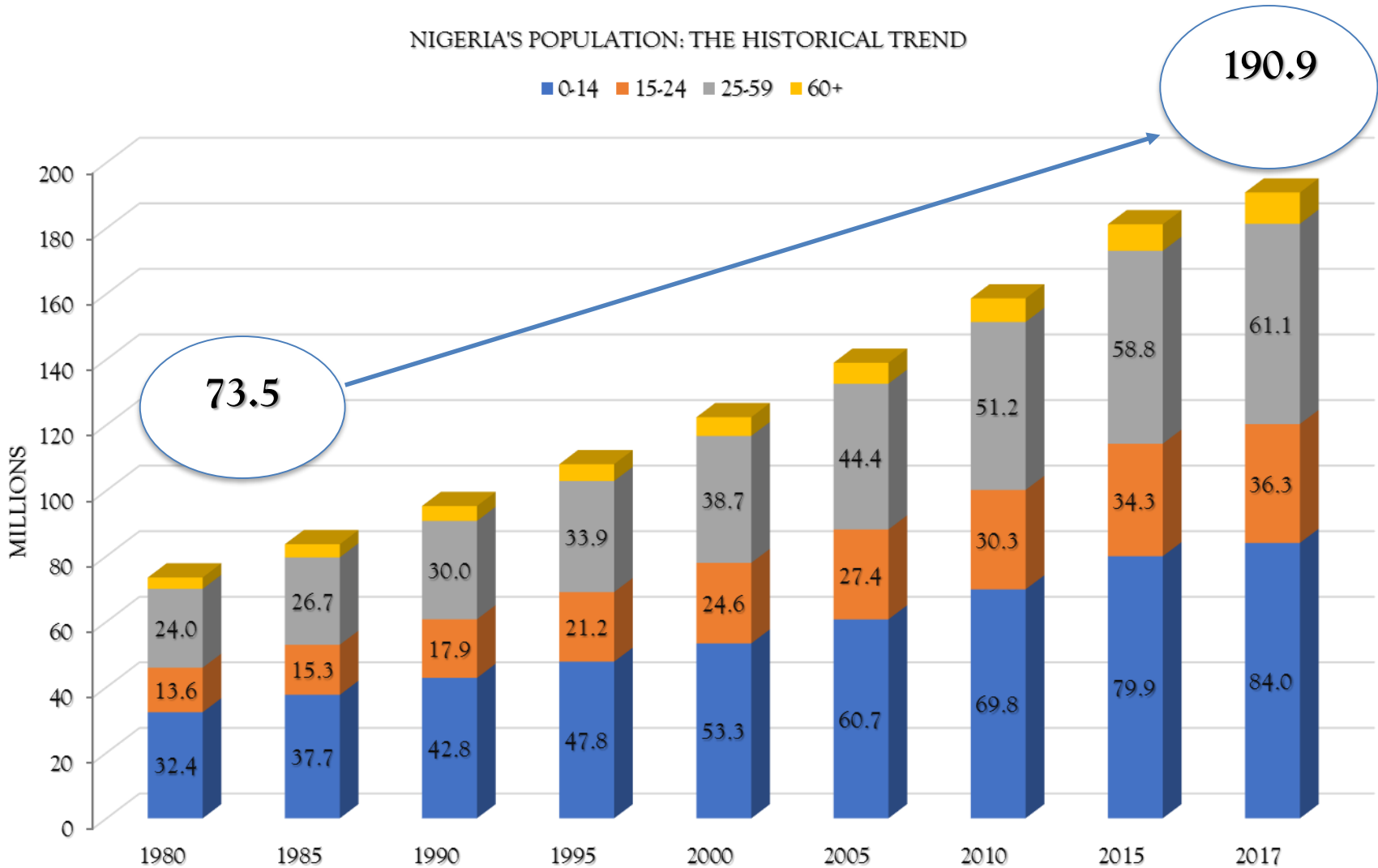
Urbanization

- More people now live in cities than in rural areas, affecting both food supply and demand
- By 2050, 66% of the world population will live in urban areas; an increase from current 54% and 40% 35 years ago – Nigeria no exception

Ageing

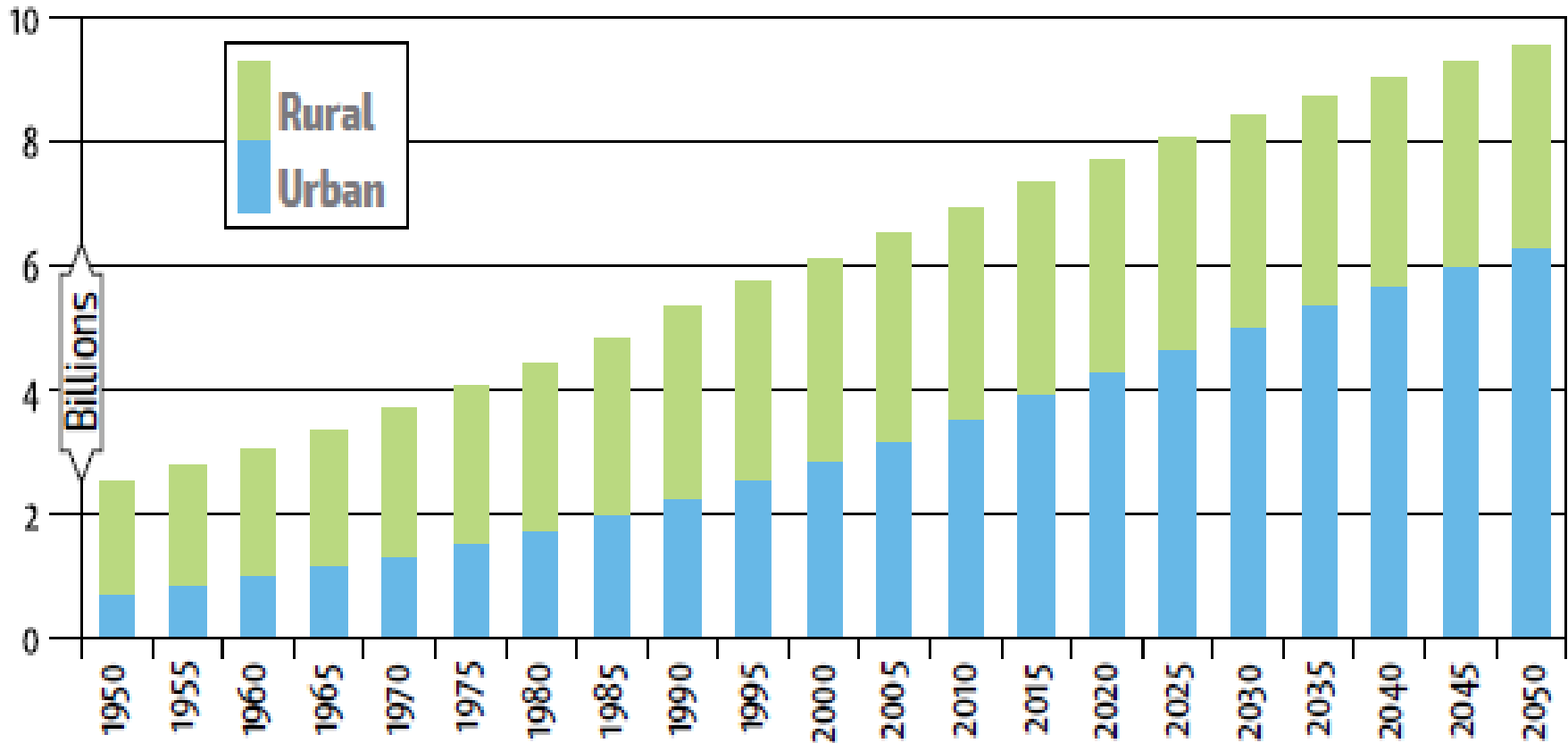
- 1950- 2015 the share of children below the age of five declined from 13.4 percent to 9.1 percent, and the proportion of older (65+) people rose from 5.1 percent to 8.3 percent – United Nations
- By the end of the century, the share of young children could decline to 5.8 percent, while the proportion of older people is forecast to rise to 22.7 percent

NIGERIA'S POPULATION: THE HISTORICAL TREND



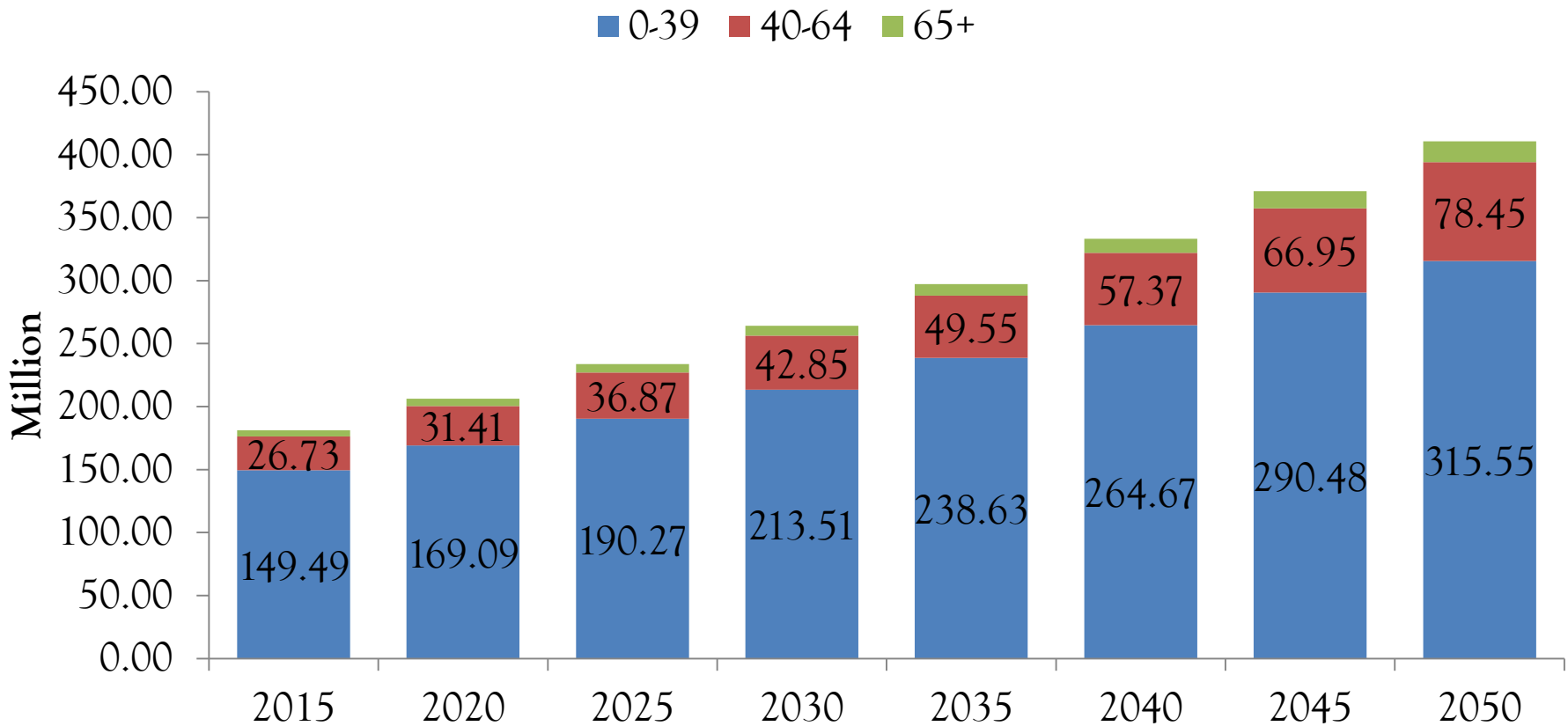
Population Growth, Urbanization and Ageing ...

Growth in global urban and rural populations to 2050



Population Growth, Urbanization and Ageing ...

Nigeria Population by Age Group



❑ Conflict Driver of Food Insecurity and Malnutrition in the World

- Conflicts are a major driver of food insecurity and malnutrition, they reduce food availability, disrupt access to food and healthcare, and undermine social protection systems, the 2016 Global Peace Index Report (IEP, 2016) concludes that the world became less peaceful in 2015, confirming the underlying trend of declining peace over the last decade.

❑ Herder-Farmer Conflicts

- The conflict between herdsman and farmer which has been in existence for long has spread to southern communities due to lack of grazing land for their cattle because of desert encroachment which is experienced in the northern Nigeria.

❑ Countries with the highest levels of hunger are usually those with conflicts

- Countries with the highest levels of under-nourishment tend to be those engaged in, or recently emerged from, violent conflict. High risk of conflicts is a key characteristic of 'fragile states', and the prevalence of hunger rises exponentially with the degree of fragility, and vice-versa.

SECTOR	SHARE OF 2010 EMPLOYED %	SHARE OF Q3 2017 EMPLOYED %	Change (%)
Agriculture	30.5	48.2	17.7
Oil, Gas and Solid Minerals	0.3	0.2	-0.1
Manufacturing	11	7.0	-4.0
Utilities	0.5	0.1	-0.4
Construction	2.4	2.3	-0.1
Trade	24.9	14.0	-10.9
Hospitality	5.6	1.4	-4.2
Transport	4.1	3.2	-0.9
ICT	1	0.5	-0.5
Arts, Entertainment & Recreation	0.8	0.7	-0.1
Finance and Insurance	0.4	1.3	0.9
Real Estate	0.1	0.1	0
Professional, Scientific & Technical Services	1.6	6.4	4.8
Education	3.2	3.5	-0.3
Health	1.5	2.8	1.3
Other Services	11.1	7.9	-3.2

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...But that concentration may mean vast segments of the consumer class are stuck in low-paying employment

OUTPUT PER WORKER, PER CAPITA GDP BY SECTOR (₦)

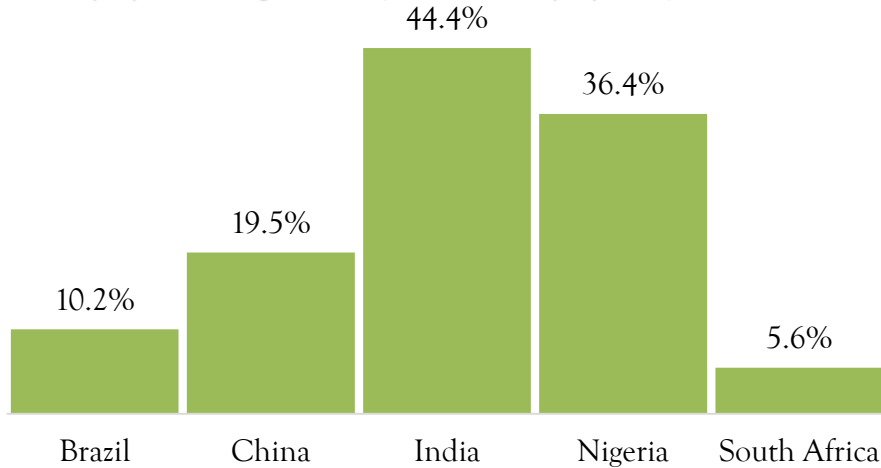
SECTOR	2010	2017	Change	% Change
Agriculture	879,442.16	640,975.12	-238,467.05	-27.12
Oil, Gas and Solid Minerals	57,714,995.04	80,871,100.73	23,156,105.68	40.12
Manufacturing	670,534.33	1,856,431.60	1,185,897.27	176.86
Utilities	928,469.76	8,210,119.84	7,281,650.08	784.26
Construction	1,374,948.47	2,453,066.53	1,078,118.06	78.41
Trade	743,366.91	1,991,108.96	1,247,742.05	167.85
Hospitality	90,012.04	935,458.34	845,446.29	939.26
Transport	345,798.17	717,909.06	372,110.89	107.61
ICT	12,683,481.97	27,625,579.88	14,942,097.91	117.81
Arts, Entertainment & Recreation	79,264.43	468,604.06	389,339.62	491.19
Finance and Insurance	11,136,357.71	3,791,720.76	-7,344,636.95	-65.95
Real Estate	60,089,788.64	123,592,664.75	63,502,876.11	105.68
Professional, Scientific & Technical Services	2,196,712.32	957,133.12	-1,239,579.20	-56.43
Administrative & Support Services	13,320.23	57,927.55	44,607.32	334.88
Education	530,712.07	964,844.71	434,132.64	81.80
Health	447,286.87	366,027.64	-81,259.23	-18.17
Other Services	207,470.52	705,180.32	497,709.81	239.89

Innovation Levers for a Sustainable Green Economy

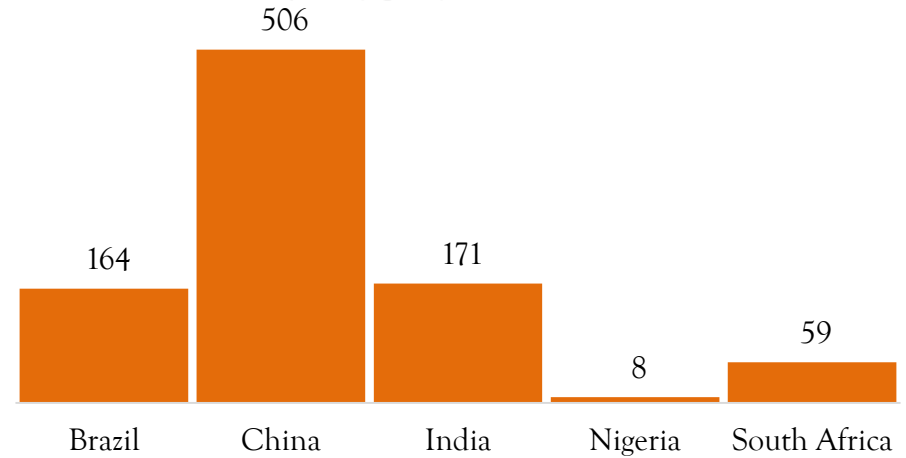


Markets Practice ...*filling information gaps*

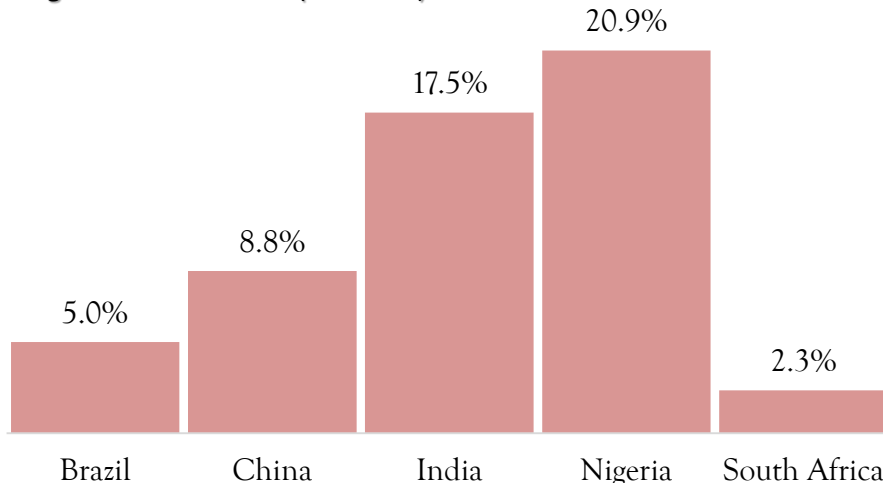
Employment in Agriculture (% of Total Employment)



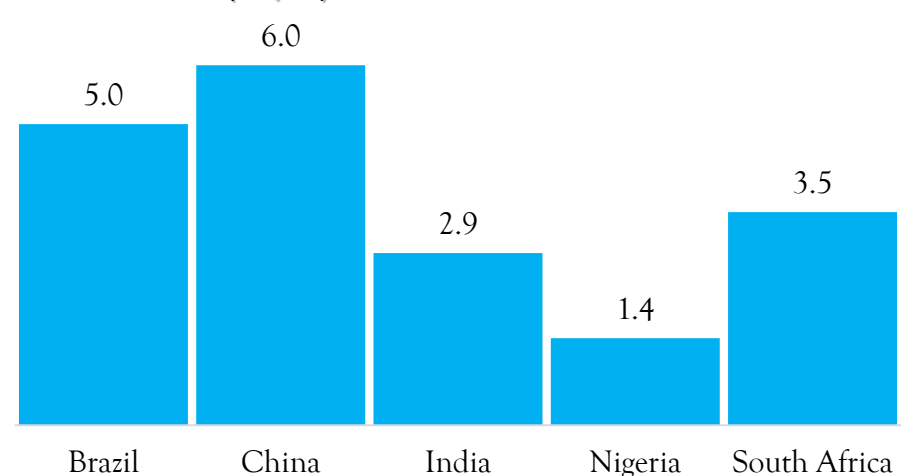
Fertilizer Consumption (Kg/Ha)



Agriculture Value Add (% of GDP)



Cereal Yields (MT/Ha)





❑ Research for Development

- Year-round production
- Improved Input Varieties, BioTech
- Improved Agronomy Practices
- Commercialization of Research

❑ Value Chain Management

- Big Data
- Agricultural Services
- Financial Inclusion, Access to Credit
- Markets and Price Discovery

❑ Storage & Processing

- Quality Assurance Infrastructure
- De-risking Agric by encouraging primary processing and production services
- Cold Chains, Packaging
- Farm to Fork – integrating supply chains
- Trade Finance



Potential Impact of Agricultural Innovation



Value Optimization



Lessons from Other Lands





- Israel, a small Middle-Eastern country with a population of 8.3 Million people is a world-leader in agricultural technologies and a major fresh produce exporter.
- Israel's climate is not conducive to farming- more than half the land area is desert and only 20% of the land is naturally arable.
- Making optimal use of scarce water, harsh land and a limited labor force has led to revolutions in agricultural methods. The search for water-saving techniques spurred the development of many types of computer-controlled irrigation systems.

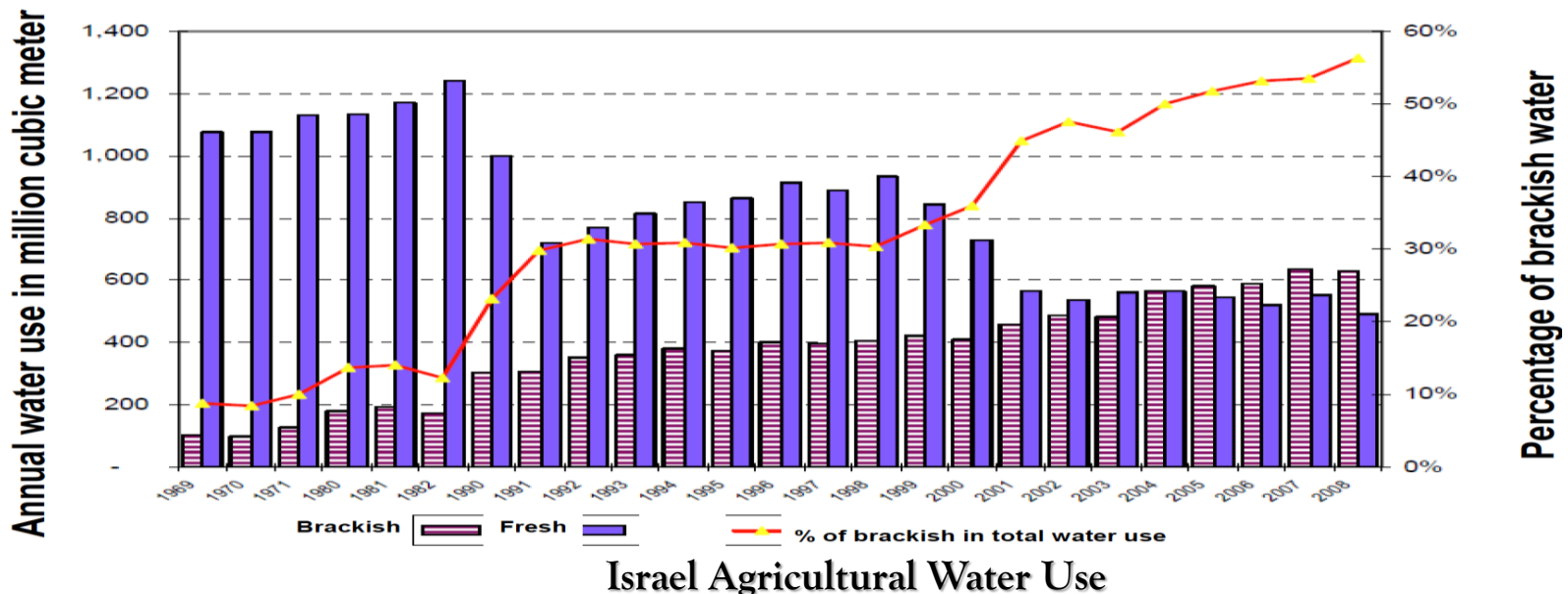




- The main water source for agriculture is pressure drip irrigation systems. Drip irrigation has the highest water efficiency rate in agriculture, reaching a 70 to 80% rate, versus open irrigation, which achieves 40%.
- Research and development expenditures since 2004 account for about 17 percent of the country's budgetary allocation for agriculture, underscoring the importance of cutting edge agricultural technology to Israel's future



- Consecutive droughts leading to a sharp decrease in fresh water allocation for agriculture led to innovations in the collection, treatment and recycling of treated wastewater.
- Between 1970 and 2004, irrigation water to Israel's agriculture moved from being dominated by fresh water to almost 50% irrigation with saltier water, mainly as recycled municipal wastewater





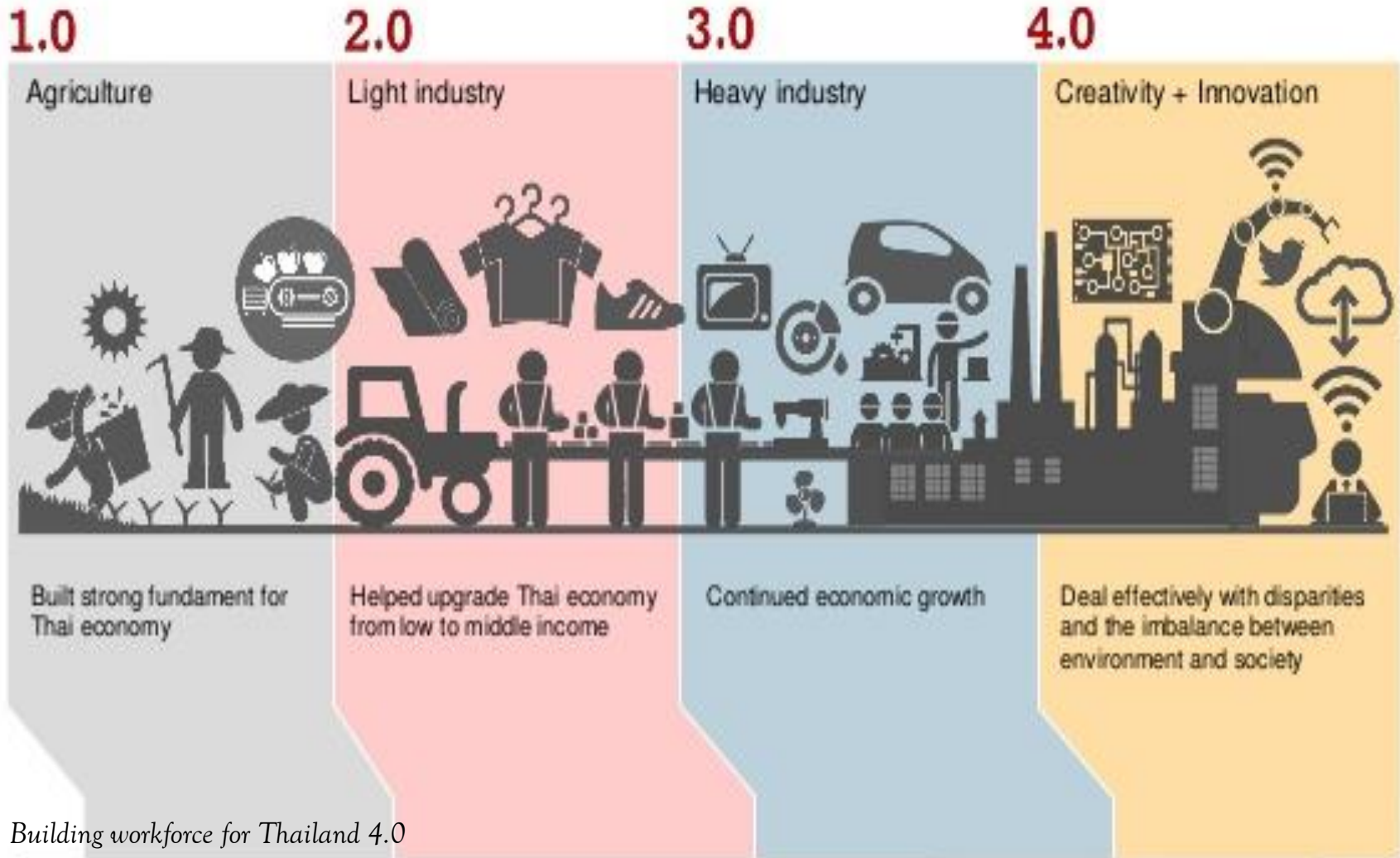
- 49% of Thailand's labor force is employed in agriculture, however this is less than the 70% employed in 1980.
- Unemployment is at 1.2% as year 2010, with estimations of falling to 1% by the year 2012 therefore Thailand has one of the lowest unemployment rates in the world. Decades of economic growth reduced poverty in Thailand.
- Thailand enjoys one of the lowest poverty rates in Asia. As far back as 2010, Thailand, along with Japan, South Korea, Taiwan, Brunei and Malaysia were the only countries in Asia with less than 2% of the country's total population living under \$1.25 per day.
- Agriculture has been experiencing a transition from labour intensive and transitional methods into a more industrialised and competitive sector. Rice is the country's most important crop; Thailand is the #1 exporter in the world rice market. Other agricultural commodities produced in significant amounts include fish and fishery products, tapioca, rubber, grain, and sugar. Exports of processed foods such as canned tuna, pineapples, and frozen shrimp are on the rise.



- In 1985 Thailand officially designated 25 percent of the nation's land area for protected forests and 15 percent for timber production. Protected forests have been set aside for conservation and recreation, while production forests are available for the forestry industry. Between 1992 and 2001, exports of logs and sawn timber increased from 50,000 cubic meters to 2 million cubic meters per year.
- In 2007 industry contributed 43.9% of gross domestic product (GDP) but employed only 14% of the workforce. This proportion is the opposite of the one applying to agriculture. Industry expanded at an average annual rate of 3.4 percent during the 1995–2005 period. The most important subsector of industry is manufacturing, which accounted for 34.5 percent of GDP in 2004.
- Thailand is becoming a center of automobile manufacturing for the Association of Southeast Asian Nations (ASEAN) market. By 2004 automobile production had reached 930,000 units, more than twice as much as in 2001. Two automakers active in Thailand are Toyota and Ford. The expansion of the automotive industry has led to a boom in domestic steel production.



- Thailand's labor force was estimated at 36.9 million in 2007. About 49% were employed in agriculture, 37% in services, and 14% in industry. In 2005 women constituted 48 percent of the labor force and held an increasing share of professional jobs. Less than 4% of the workforce is unionized, but 11% of industrial workers and 50% of state enterprise employees are unionized.
- Although laws applying to private-sector workers' rights to form and join trade unions were unaffected by the September 19, 2006, military coup and its aftermath, workers who participate in union activities continue to have inadequate legal protection. According to the U.S. Department of State, union workers are inadequately protected. Thailand's unemployment rate lies at 1.5% percent of the labor force.
- After the 2001 downturn, the Federal Reserve kept priming the pump to encourage job creation and, in doing so, it created the conditions that led to the housing bubble and the subsequent financial meltdown.





Is Nigeria Ready for Innovation ?

Thank You