

FOOD SECURITY IN NIGERIA'S CHANGING CLIMATE

A woman wearing a large, wide-brimmed straw hat and a red and blue patterned dress is bent over, working in a rice field. The field is filled with tall, golden-brown rice stalks. The background shows a line of trees under a cloudy sky.

AN INFOGRAPHIC REPORT



The threat of climate change to Nigeria's economy and food systems is compounding Nigeria's fragility risks. Deteriorating crop yields and poor agricultural capacity continue to fuel a growing dependency on food imports. With its estimated population of 180 million projected to balloon to 400 million by 2050, Nigeria's food security challenge requires urgent attention in order to avert a major food crisis.

Produced with support from the **European Union** and **Open Society Initiative West Africa**



The Yar'Adua Foundation was established by the friends, family and associates of Shehu Yar'Adua to honour the legacy of one of Nigeria's foremost contemporary leaders and inspire future generations with his life of service. Our mission is to promote national unity, good governance and social justice by creating platforms to engage citizens, policy makers and stakeholders in national conversations that foster an inclusive and prosperous Nigeria.

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NIGERIA'S CLIMATE CHALLENGE

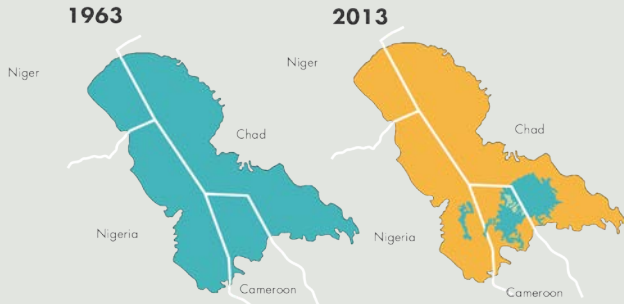
Extreme weather patterns – fiercer, longer dry seasons and shorter, more intense rainy seasons – are exacerbating challenges confronting communities. The nature of these impacts vary from place to place but the net effect is the depletion of environmental and food resources in every part of the country.



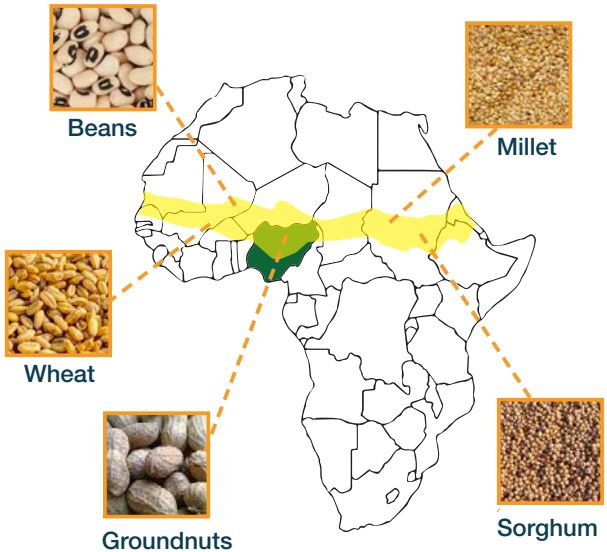
**They have nothing to do. The fisherman cannot fish anymore.
The farmers cannot farm anymore.** Dr. Micheal Egbebike, Ameritek Engineering

NORTHERN NIGERIA

The shrinking of Lake Chad over the past 40 years has led to poverty and displacement of farm and fishing communities **factors which experts believe contributed to the rise of Boko Haram.**



The Sahel region is a major producer of livestock, cereals and crops rich in plant protein.



Rapid desert encroachment is contributing to escalating conflict between farmers and herders resulting in food insecurity.

SOUTHERN NIGERIA



High intensity rainfall has resulted in floods causing **DEATH** and **DESTRUCTION**.

2012 FLOODS



363
Killed



2.1m
Displaced

2017 FLOODS



3
Killed



110k
Displaced

In Southeast Nigeria, heavy downpours have accelerated erosion, destroying land and fertility of soil, forcing members of affected communities to **RELOCATE**.



40%

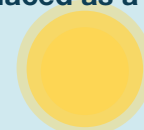
Anambra State
is threatened
by erosion

You go to Brass, you go to Odioma, Kulama, you see the same thing. Ocean encroachment. Eating up the land. And they told me that about 7 poles of electric lines have just gone into the ocean.

Morris Alagoa
Environment Rights Action

Along the coast, communities are being displaced as a result of rising sea levels.

The Niger Delta
loses 0.6 sq km
yearly to coastal
erosion



Coastal fresh
water fish are
threatened by
salinization



CLIMATE PROJECTIONS

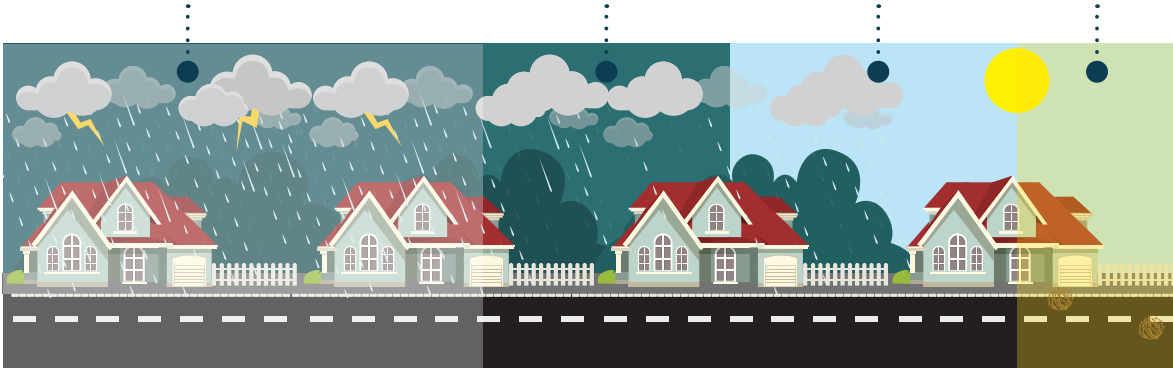
Precipitation - 2050

41% higher intensity rainfall

20% stable rainfall

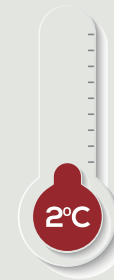
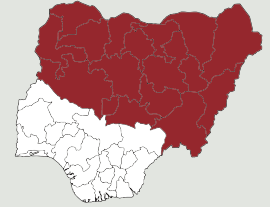
25% uncertain

14% less rainfall



Average Surface Temperature

Northern Nigeria will be most affected

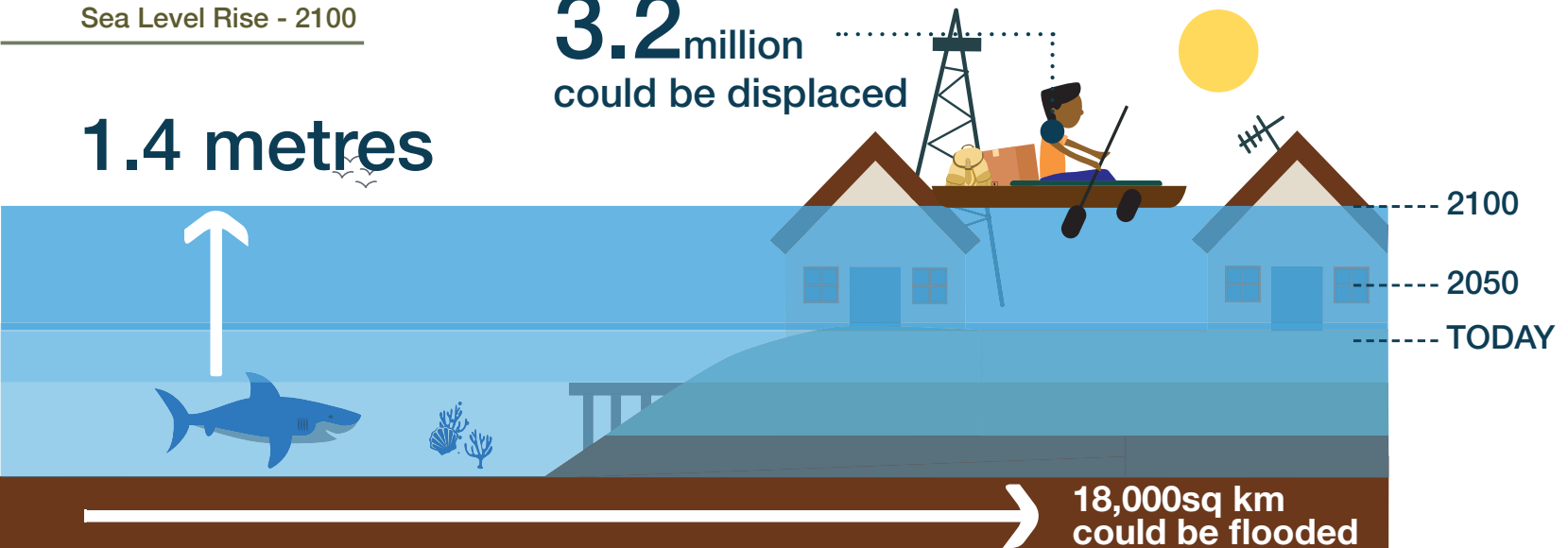


Expected to be 2 degrees higher in 2050

Sea Level Rise - 2100

1.4 metres

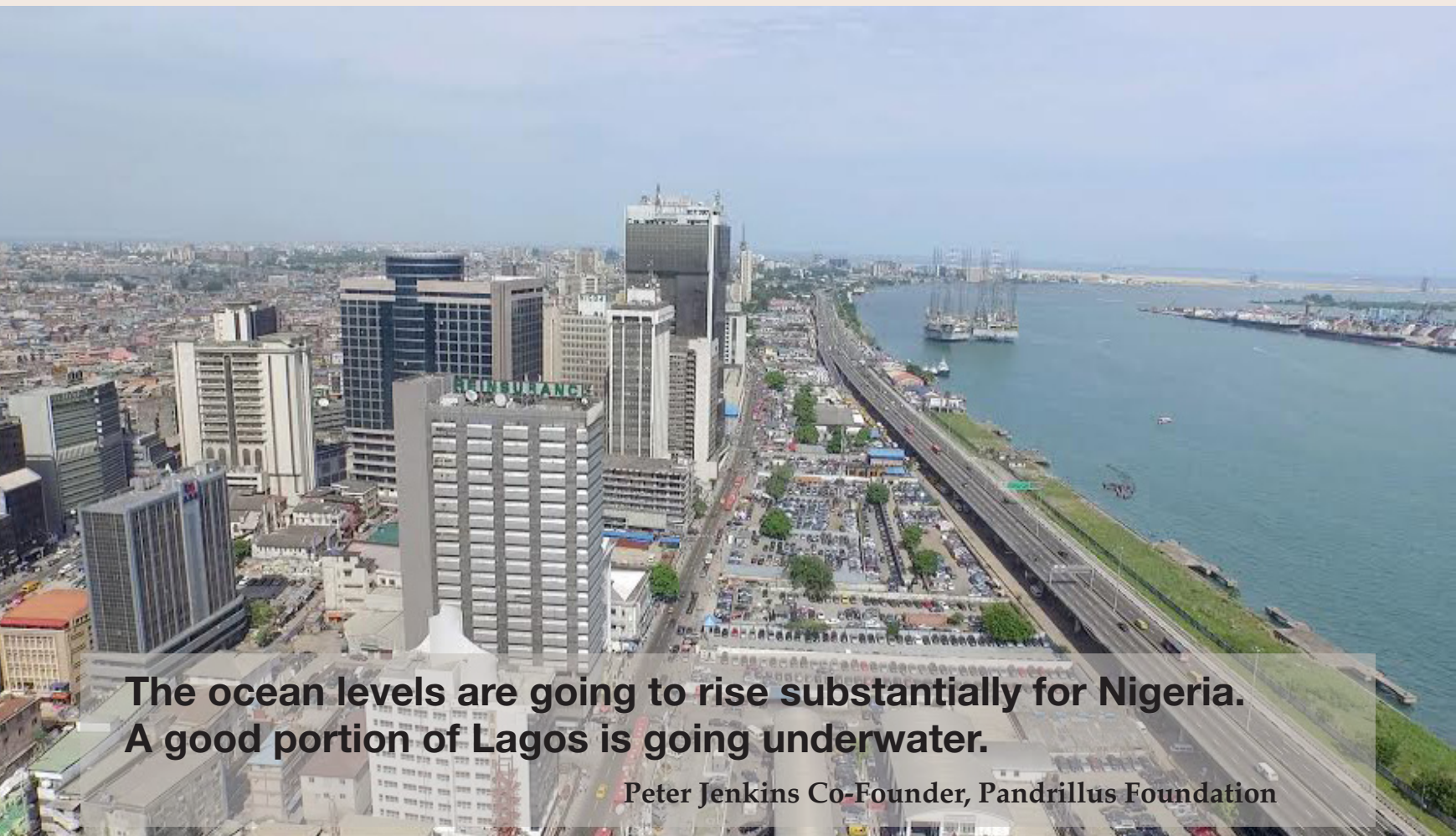
3.2 million could be displaced





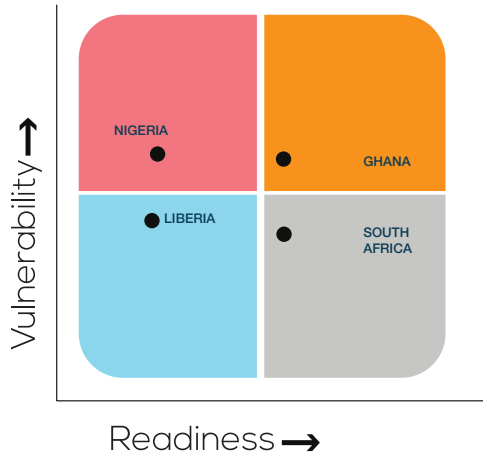
NIGERIA'S VULNERABILITY TO CLIMATE CHANGE

Out of 181 countries surveyed, Nigeria is considered 58th most vulnerable and the 22nd least ready country to adapt. Vulnerabilities include exposure, sensitivity and adaptive capacity. An estimated 25% of Nigerians live in the coastal region - a hub for economic activity and source of 90% of foreign income.



**The ocean levels are going to rise substantially for Nigeria.
A good portion of Lagos is going underwater.**

Peter Jenkins Co-Founder, Pandrillus Foundation



University of Notre Dame Global Adaptation Index (GAIN) 2017

EXPOSURE

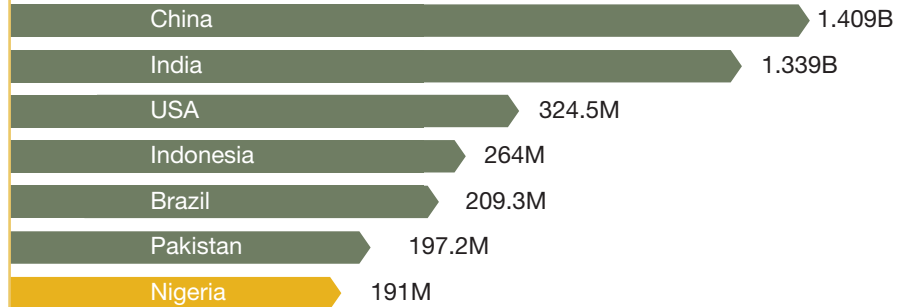
Projected Flood Hazard

Coastal Nigeria, Niger, Benue, Gongola and Sokoto floodplains and flat low-lying areas near Lake Chad are most vulnerable, especially during periods of heavy rainfall.



Projected Population Growth

Nigeria is the most populous country in Africa and seventh most populous in the world.



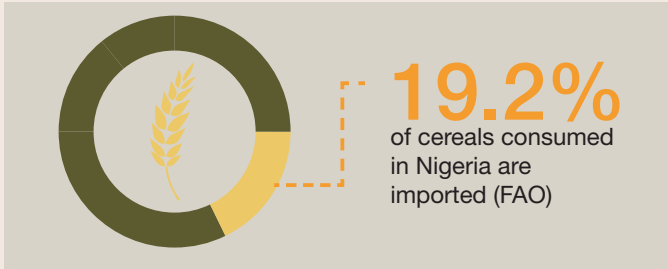
5.38 children born per woman

By the year 2050, we will be well over 400 million. It is mind boggling.
H.E. Olusegun Obasanjo, GCFR

SENSITIVITY

Nigeria will be particularly sensitive to climate impacts due to the following factors:

Food Import Dependency



Agriculture Capacity

A drastic drop in oil incomes since 2014 and near 50% devaluation of the naira highlighted the risk of dependence on imports.

Food accounts for 17% of the value of all merchandise imports (World Bank)



Less than 1% of arable land equipped with irrigation

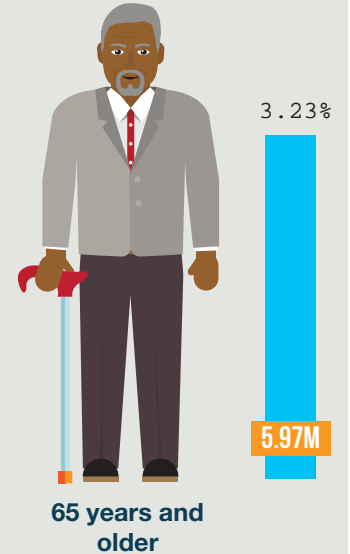
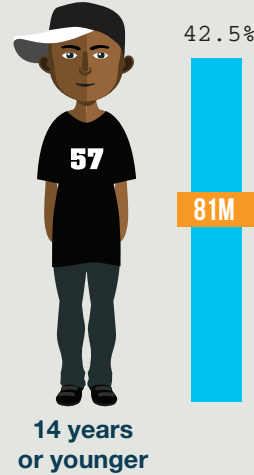


6.7 tractors/agricultural machinery per 100sq km of arable land



Age Dependency Ratio

9 dependents for every 10 adults of working age in Nigeria



1	NIGER	111.78
2	MALI	101.46
3	UGANDA	100.63
4	CHAD	99.43
5	DEM. REP. CONGO	97.05
6	ANGOLA	97.27
7	SOMALIA	97.05
8	TANZANIA	93.02
9	MOZAMBIQUE	92.92
10	THE GAMBIA	91.80
11	BURKINA FASO	91.56
12	ZAMBIA	90.78
13	BURUNDI	90.12
14	MALAWI	89.65
15	TIMOR-LESTE	89.61
16	CENTRAL AFRICAN REPUBLIC	89.25
17	NIGERIA	88.9

18.8%
Unemployment (2017)



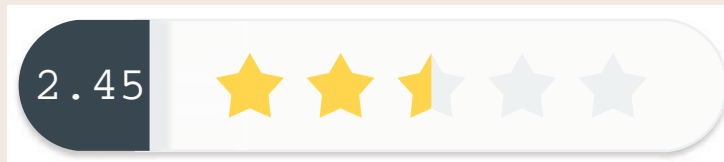
Nigeria has the 17th highest age dependency ratio in the world (2016)



Trade and Transport Infrastructure



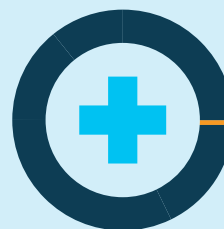
Only 15% paved roads



Rated 2.45/5 (average) by the World Bank Development Index

Medical Staff

0.38 physicians/
1,000 population



Expenditure on
healthcare

3.7%
of GDP



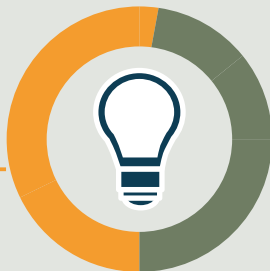
Electricity Access



61%

of rural households not connected to the grid

Average Grid Availability



54%

(13 hours per day)

Farmers can't store food because there is no electricity or storage systems. Nnimmo Bassey, HOMEF

International Environmental Conventions



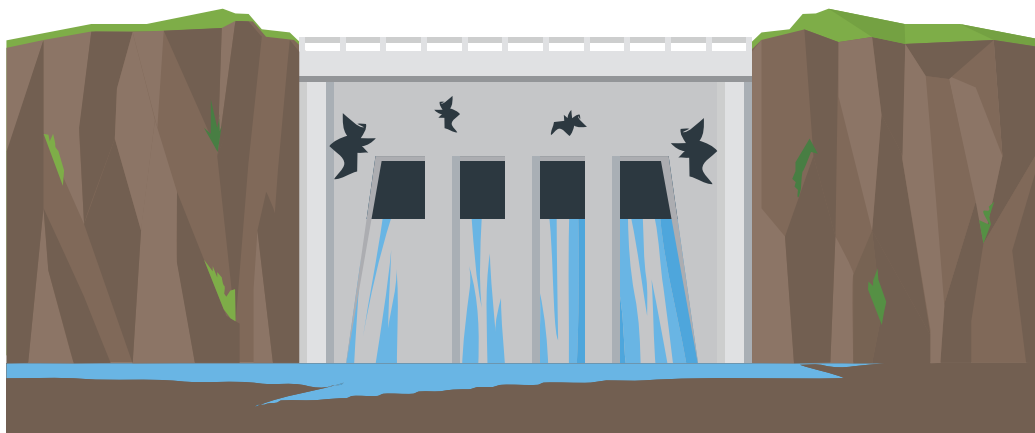
Paris Agreement signed but not domesticated in national and subnational legislation

Dam Capacity

Nigeria ranked 64/116 countries in the world

278m³

per capita





FOOD SECURITY IN NIGERIA

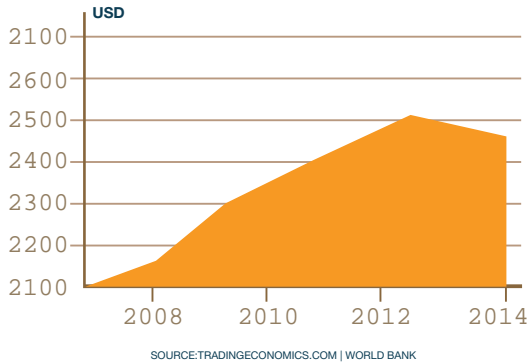
Despite significant natural resources and a per capita GDP of over \$2,000, economic inequality remains a challenge for Nigeria. 61% live on less than a dollar a day and 69% live below the relative poverty line. The highest proportion of poor people live in the Northeast, Northwest and rural parts of the country.



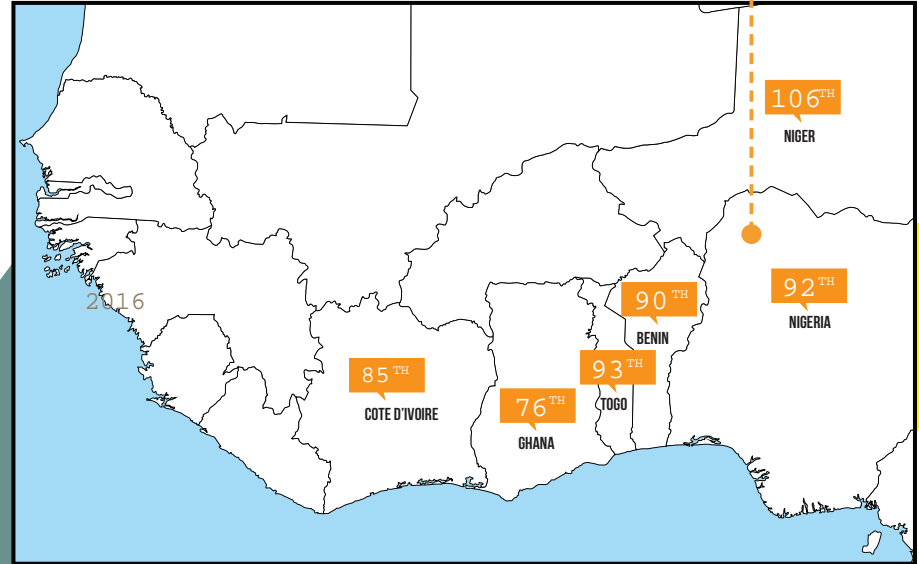
At current growth rates, feeding that population is our next big challenge.

*Ken Saro Wiwa, Jnr., *Nowhere to Run**

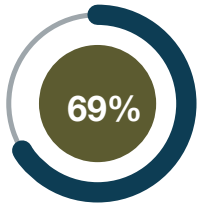
Nigeria GDP per Capita



According to the Economist's Global Security Food Index (GSFI) which measures risks to food security in countries, regions and around the world, Nigeria is ranked 92 out of 113 countries.

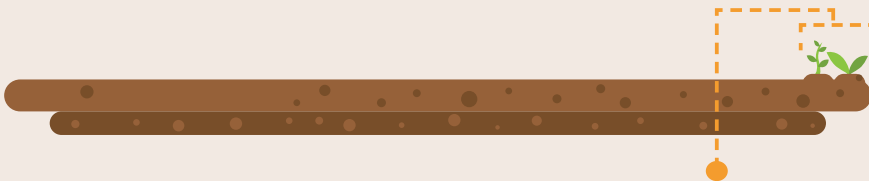
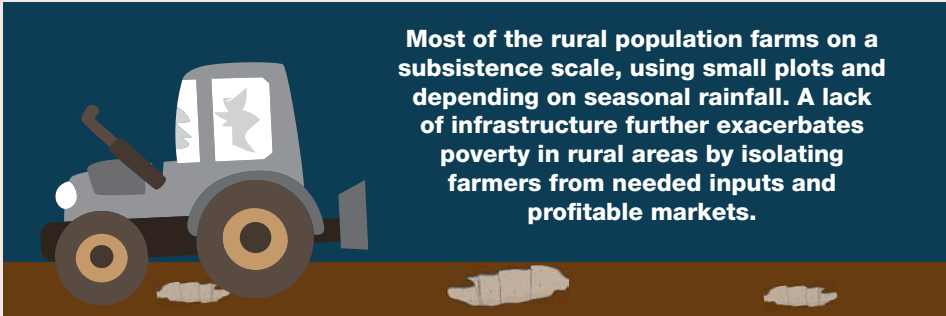


Nigerians living below poverty line



DETERMINANTS OF FOOD SECURITY

Nigeria is the world's largest producer of cassava, yam, and cowpeas; yet it is a food-deficient nation that depends on imports of grains, livestock products and fish due to poor agricultural productivity.



Of an estimated 71 million hectares of cultivable land, only 5% is permanent cropland; only 7% is irrigated

Key Sources Of Protein In the Nigerian Diet

Cereals



Wheat



Sorghum



Maize



Millet

Legumes



Cowpeas



Beef



Milk



Fish

FOOD AVAILABILITY

Energy Supply Adequacy



121%
Dietary energy supply adequacy

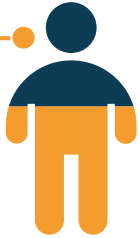


Nigeria's dietary energy supply has reduced by 10% over the past decade

Protein Intake

Nigeria is barely meeting the minimum recommended protein intake for the average person, with little room to absorb shocks in supply.

Significant risk of under-nourishment



Current daily protein intake
57g/capita



Recommended daily minimum
56g/capita

Energy supply derived from cereals, roots & tubers

54%

Nigerian Average

59%

Global Average

Average Value of Food Production



QUALITY AND DIVERSITY OF DIET

Protein is the least affordable and scarcest macro-nutrient. Decreasing protein intake means that good quality food is becoming less available on the average Nigerian plate, driven by reduced plant protein from 58 g/day to 47g/day.



ACCESS TO FOOD

Physical Access



Road density 21km/100sq km

Perishable foods take three to four days to get to the market.

Amara Nwankpa, Shehu Musa Yar'Adua Foundation

Rail network lethargic
and limited - 3,505 km



Avg annual freight 77million metric tons per km

FARM

MARKET

Access to food in Nigeria is severely hampered by poor infrastructure. Food production centers are disconnected from markets. Facilities for bulk transport of food products are limited. As a result, food produce rots on the farm or during transportation.



Economic Access

Nigerian Food Inflation



Food inflation rose to 19% in 2018 from 10% in 2013

Households affected by the shock of increase in food prices nearly doubled from 6.3% in 2013 to 12.4% in 2016

Food Inadequacy and Coping Strategies

9%

eat one meal per day



27%

eat 2 meals per day

19.6% Households Nationwide
Southeast highest with 34.3%

NOI Polls (2017)

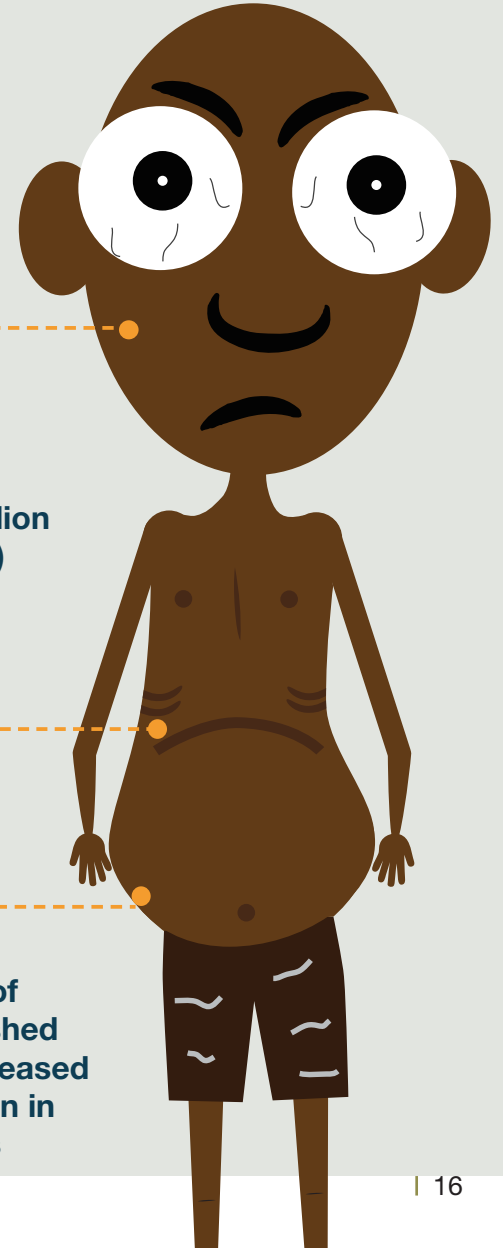
Undernourishment

High inequality in access to sufficient food means that an estimated 8% of the population are undernourished.

9.2 million
(2006)

14.3 million
(2016)

Number of undernourished Nigerians increased by 5.1 million in 10 years





FOOD SECURITY AND GENDER EQUALITY

Women play a significant role in agriculture, but they are not afforded the same access to opportunities as their male counterparts.



It is unfortunate that women contribute so much to agriculture but don't necessarily get to decide what happens to the money.

Mira Mehta, Tomato Jos



Globally

Approximately 70% of agricultural workers, 80% of food producers, and 10% of those who process basic foodstuffs are women. They are also responsible for 60 to 90% of rural marketing.



Nigeria

Women constitute up to 60% of the farming population and are responsible for most of the actual farm work.

GENDER INEQUALITY AND CLIMATE RESILIENCE



Nigeria could boost its agricultural productivity by up to **20%** if female smallholder farmers had equal access to land and productive inputs

#CLIMADIPOLO



We can't go far unless we have empowerment of women in the agriculture sector.

Dr. Akinwumi Adesina, AFDB



MEETING DIETARY ENERGY REQUIREMENTS

Nigeria is the continent's leading consumer of rice, one of the largest producers of rice in Africa and simultaneously one of the largest rice importers in the world.





RICE

Rice is the staple food for half the world's population – more than 3.5 billion people depend on rice for at least 20% of their daily calories.



80%
of production sold



20%
of production consumed

Why is Rice Important?



Generates more income for Nigerian farmers than any other cash crop in the country.



Grows quickly with few inputs compared to maize.



Rice straws are used for livestock feed, decreasing methane emissions from ruminants. They are also used as fuel, thatch and industrial starch.



An important staple food and a major source of carbohydrates.

Species Grown in Nigeria



Ofada Rice

Generic name to describe rice produced and processed in Southwest Nigeria.

Popular due to its unique taste and aroma.

Short grain, robust rice with brown stripes.

First introduced in Ogun State.



Abakaliki Rice

Generic name to describe rice produced and processed in Ebonyi State.

Long grain, translucent rice.

Popular due to its nutritional content and similarity in quality to foreign rice.



Faro 44

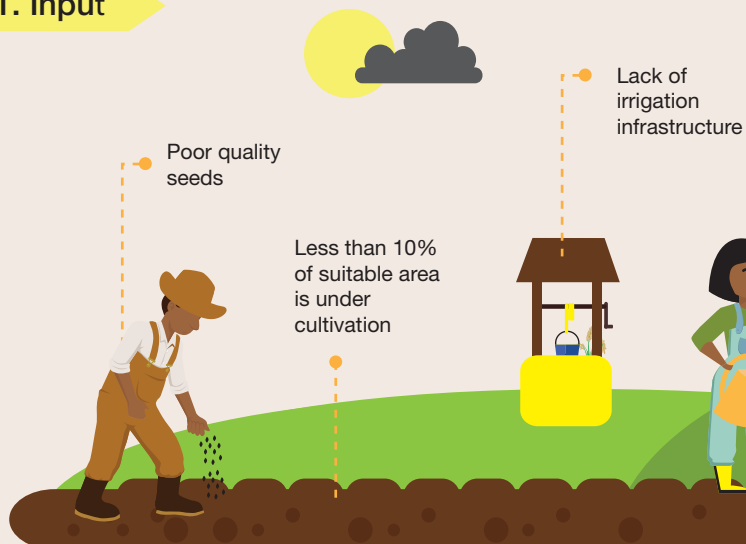
One of the most distributed rice varieties in the Nigerian rice sector.

Grown by over 6 million farmers.

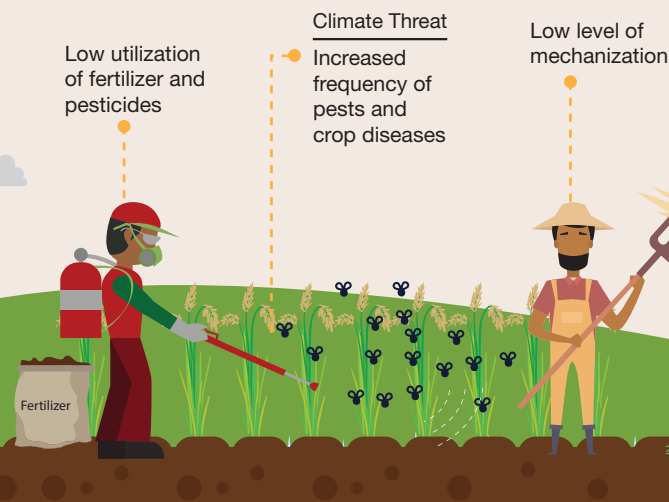
Grains come in different sizes ranging between 3mm and 5.5mm.

Rice Value Chain Challenges and Climate Vulnerability

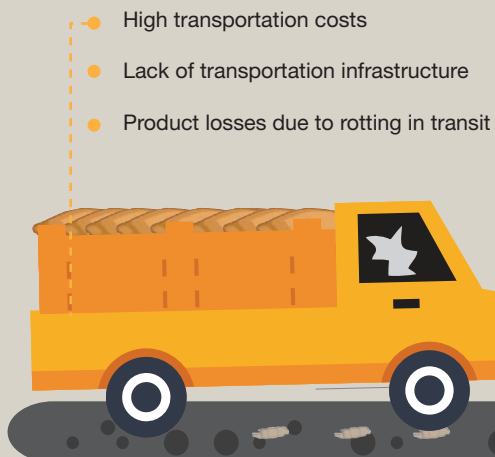
1. Input



2. Production

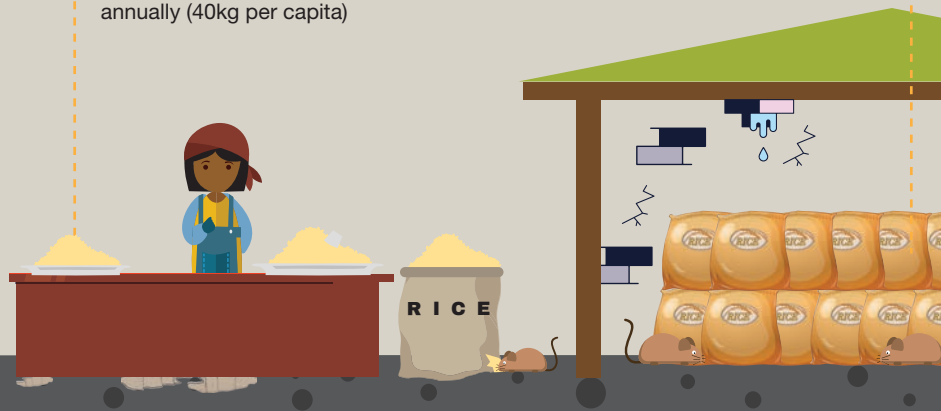


4. Marketing



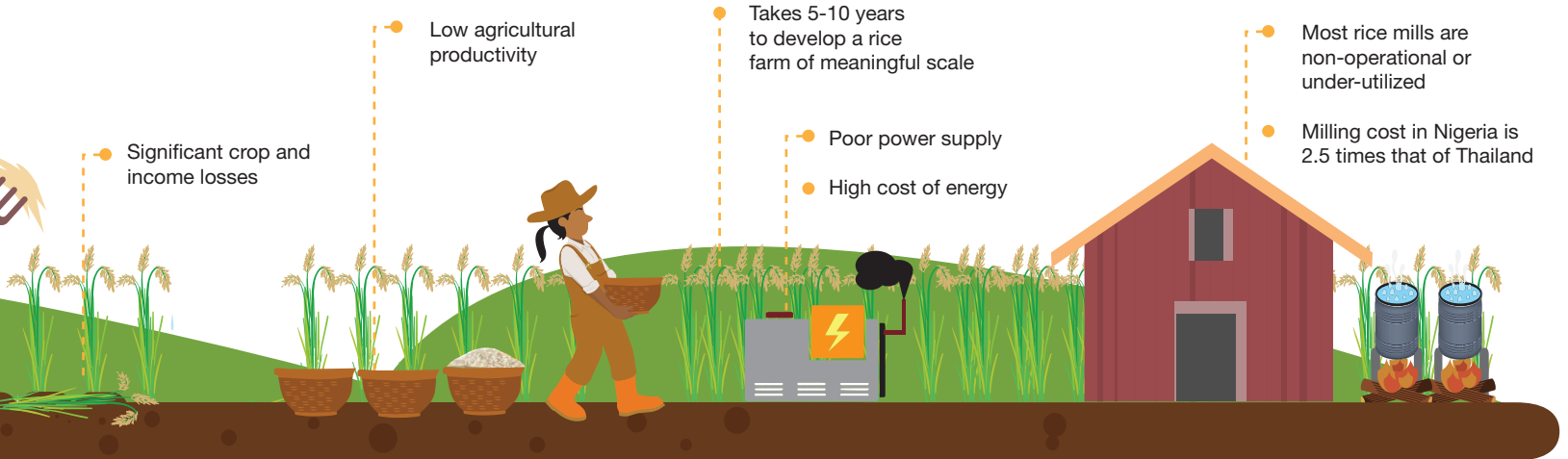
5. Consumption

7.9 million MT consumed annually (40kg per capita)



3. Processing

A lot of seeds in Nigeria are not able to produce at optimal capacity.
P. J. Okocha , P. S. Nutraceuticals Int'l Ltd.



Wholesale costs twice that of Thailand

Storage risks high



VALUE CHAIN INTERVENTION

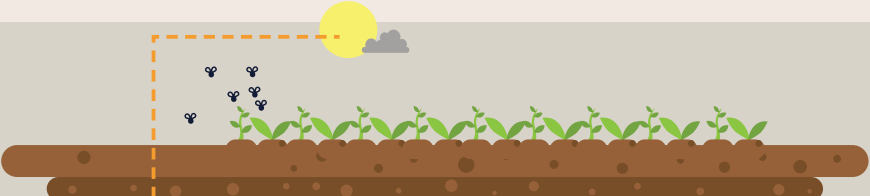
Rukubi Rice Outgrowers Scheme, Nasarawa State
OLAM Nigeria supported by Federal Government, CBN, IFAD and USAID.

- 4,017 outgrowers producing 11,250 of paddy rice
- Average profit per farmer Previous: \$70 to \$100/Ha
Now: \$300 to \$500/Ha
- Seeds developed with West African Rice Development Association
- Intergrated mill producing 36,000 MT milled rice per annum




CASSAVA

Cassava is an important economic sustenance crop for Nigeria. It grows throughout the year, making it preferable to seasonal crops such as yam, beans or peas. Cassava roots are processed into a wide variety of granules, pastes and flours or consumed freshly boiled or raw.



Displays an exceptional ability to adapt to climate change with tolerance to low soil fertility, resistance to drought, pests and diseases.



Poses minimal storage challenges as roots can remain underground for long periods, even after they mature.

Why is Cassava Important?



An important source of income for smallholder farmers.



Sustains 600 million people across the world.



High in calories and essential vitamins such as foliates and thiamine.



Used as food, feed and fuel.



Responds well to fertilizer application.



Grows year-round even on marginal land.

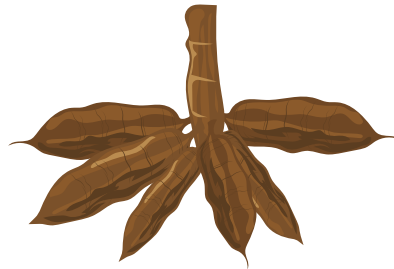


Requires little water to grow.



Climate resilient crop that thrives in poor soil.

Species Grown in Nigeria



**UMUCASS 42 and
UMUCASS 43**

Collaborative effort between the International Institute of Tropical Agriculture (IITA) and the Nigerian Root Crops Research Institute (NRCRI)

Potential yield of 49 - 53 Metric Tons per Hectre

Resistant to major pests and diseases including mosaic disease, bacterial blight, anthracnose, mealybug, and green mite

High quality cassava flour

Drought resistant



Odongbo

Most commonly grown variety in Southwestern Nigeria

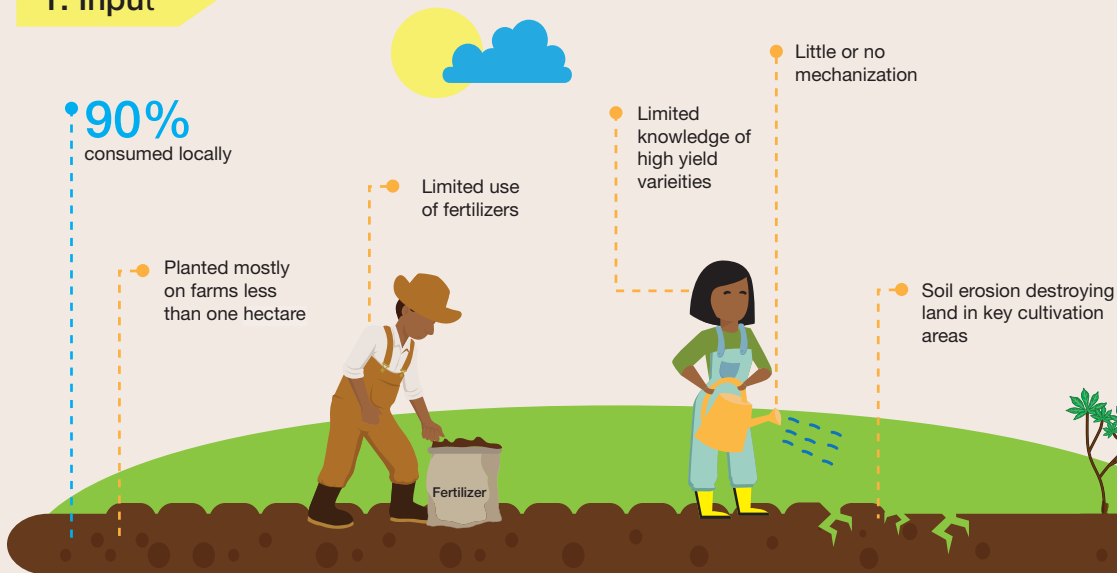
Reddish petiole, cream coloured stem, clear white flesh

Maximum yield: 14 Metric Tons per Hectre

Limited resistance to Cassava Bacterial Blight

Cassava Value Chain Challenges and Climate Vulnerability

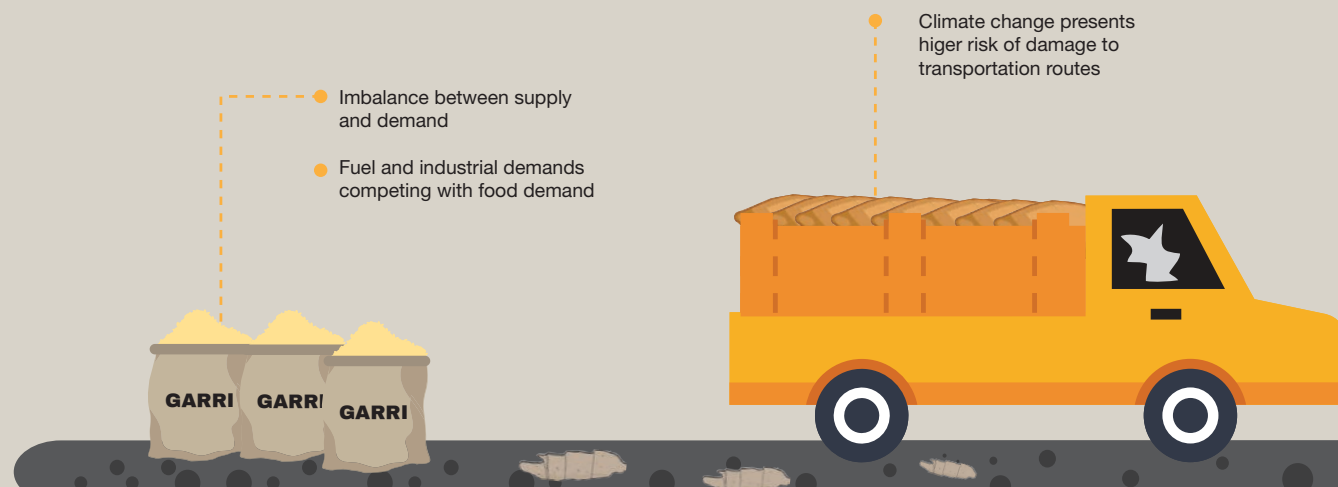
1. Input



2. Production

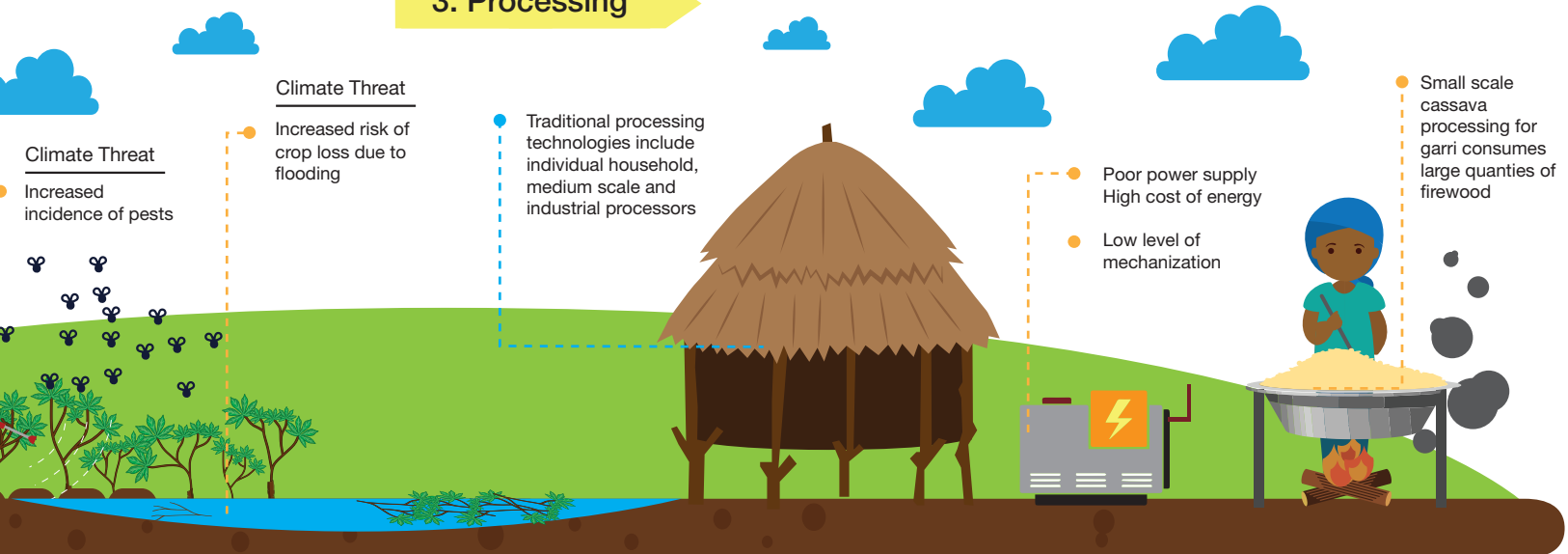
- Yield – 9.1 MT/ha
- Global yield – 11.8 MT/ha
- Limited economies of scale – growers dispersed, and harvests are typically small (12-15MT average)

4. Marketing

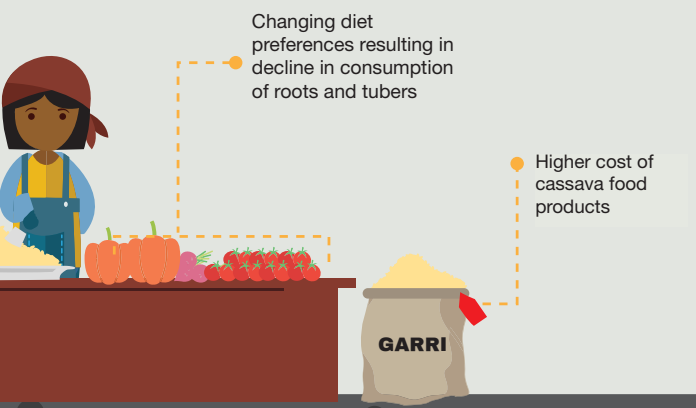


5. Consumption

3. Processing



ion



VALUE CHAIN INTERVENTION

Cassava Bread Fund
Bank of Industry

- Intervention for processors and bakers to prevent post harvest losses.
- Substitutes up to 20% of wheat flour with cassava flour.

PLANT PROTEIN SUPPLY

In Nigeria, demand for wheat products is projected to grow at an annual rate of 10% - requiring accelerated local production. For decades, gaps in production have been countered by imports.



WHEAT



Wheat is the most common cereal available across the world and is in higher demand in recent years due to its nutritional benefits.



Protein content can be as high as 15%

Why is Wheat Important?



Most widely grown cereal crop and a staple food for more than 35% of the human population.



Second most important food crop after rice.



Leading source of plant protein. Contains more protein and calories than maize or rice.



Nutritious and easy to store. Can be processed into a variety of foods.

Species Grown in Nigeria



NORMAN BORLAUG AND REYNA-28

Improved wheat varieties launched in 2014

Developed by Lake Chad Research Institute (LCRI)

Both have potential yields of 5-6 metric tons per hectare

Both are heat-tolerant and drought-resistant varieties



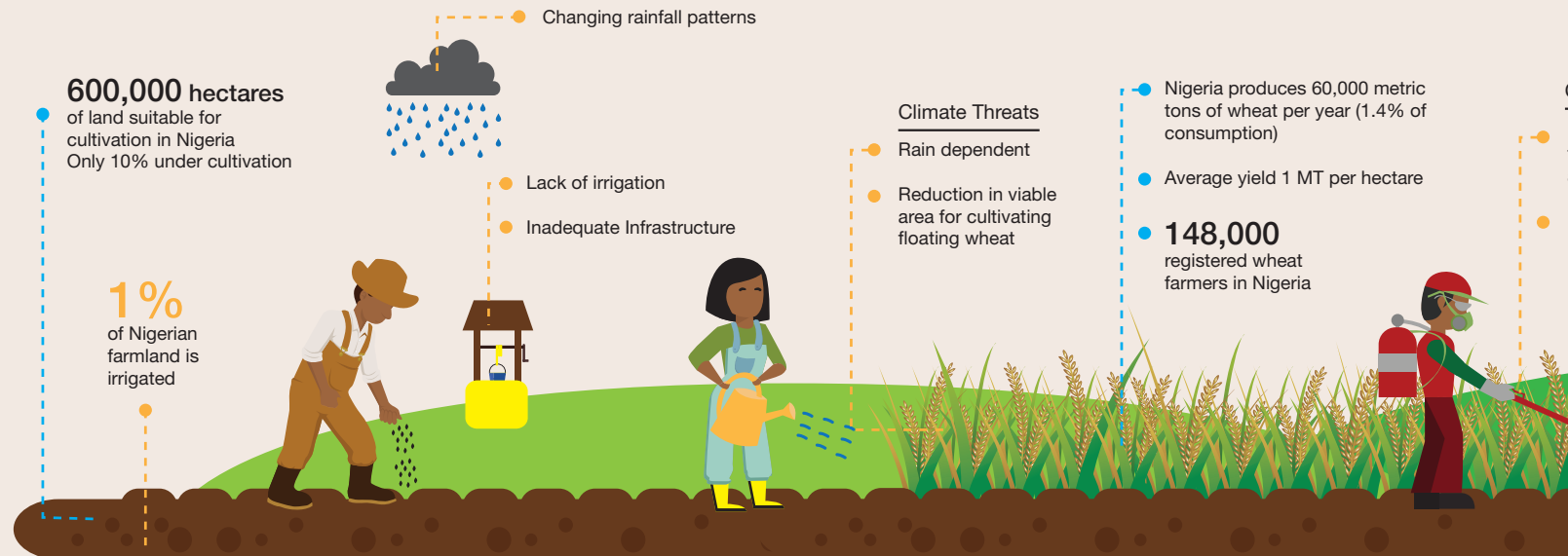
ATILLA GAN ATILLA

Launched in Nigeria in 2008

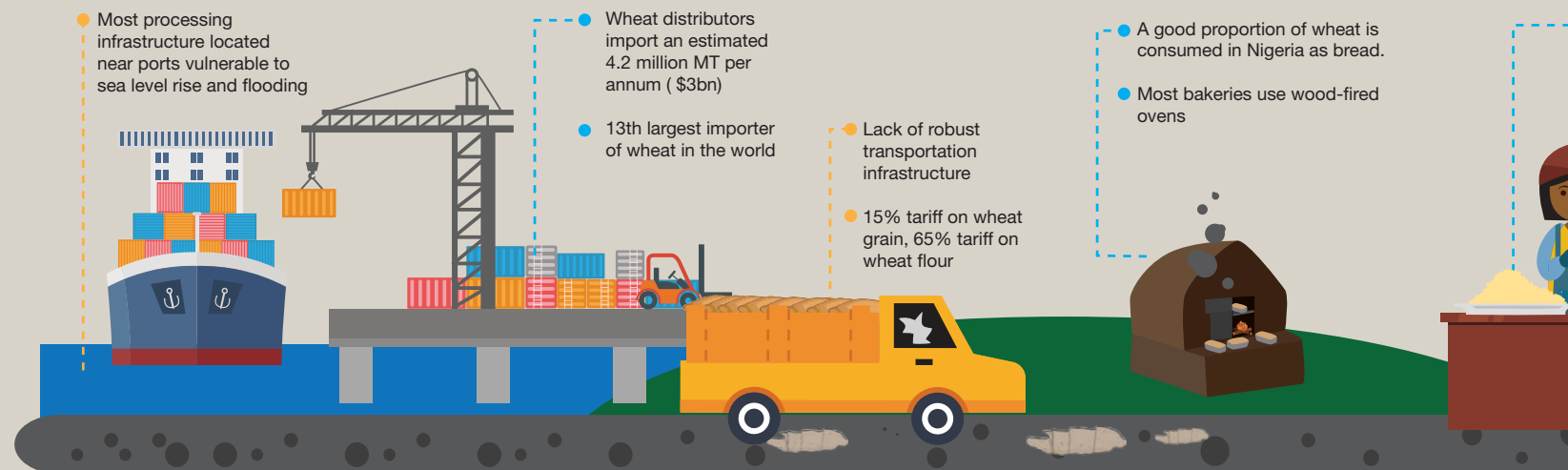
Has potential yield of 3.5-4 tons per hectare

Wheat Value Chain Challenges and Climate Vulnerability

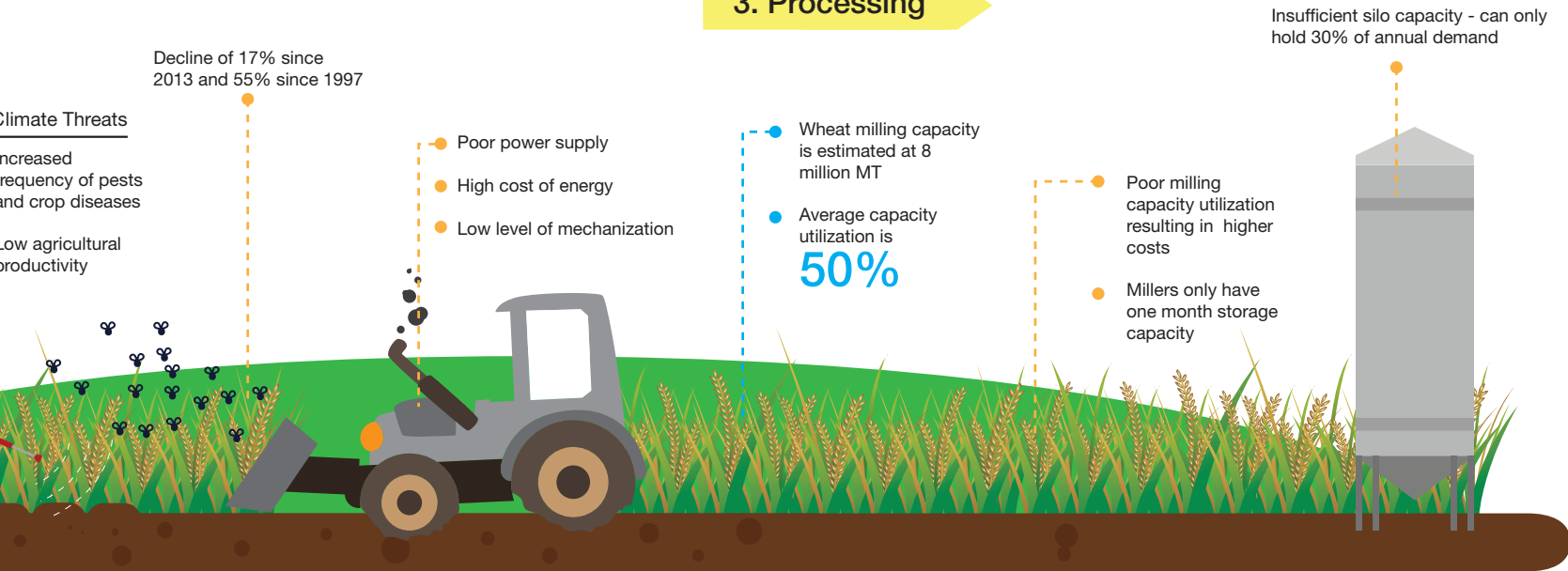
1. Input



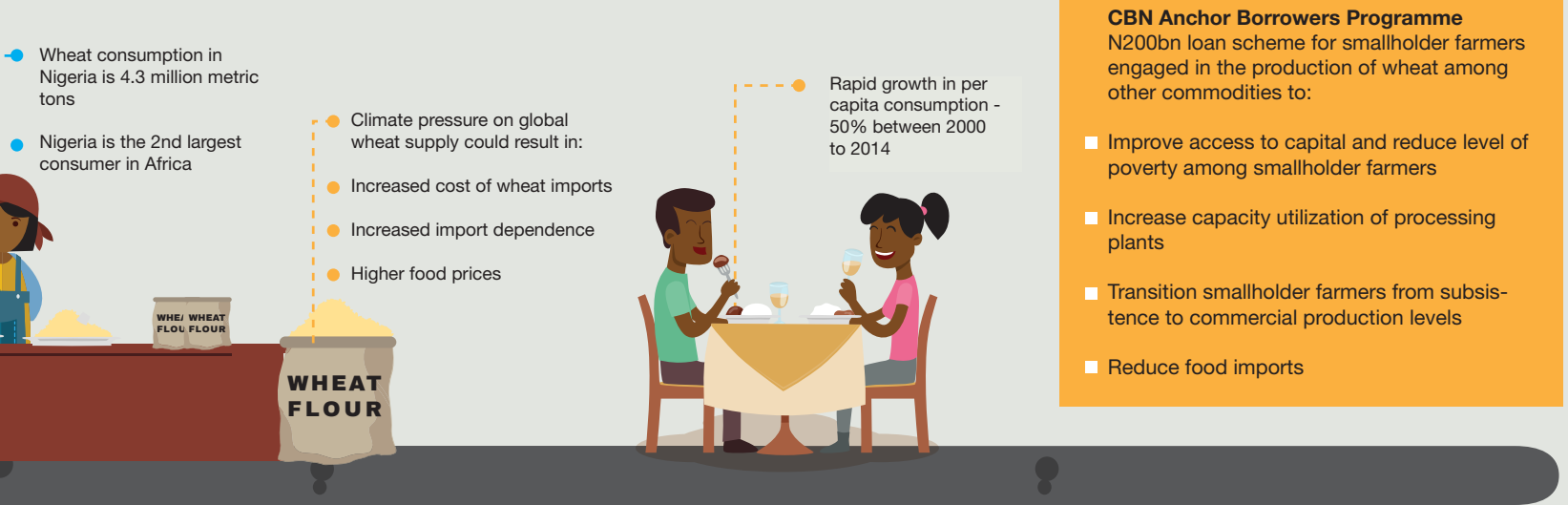
4. Marketing



3. Processing



5. Consumption



Traditional farming has been overwhelmed by changing weather patterns, out of date methods and a significant increase in the demand for food.



Farmers are not sure when the rainy season starts and when it ends. This affects the planting and harvesting cycles.

Nnimmo Bassey, Health of Mother Earth Foundation

COWPEAS (BEANS)

Cowpeas are an indigenous legume grown extensively throughout sub-Saharan Africa. Nutritious and inexpensive, cowpeas serve as a source of protein for both rural and urban consumers in Nigeria.

Why are Cowpeas Important?



Major income earner for smallholder farmers.



Rich source of essential nutrients. 25% protein and 64% carbohydrates.



Protects and insulates the soil from erosion, evaporation and weeds.



Leaves and seeds improve livestock feed conversion ratio and decreases methane emissions from ruminants.

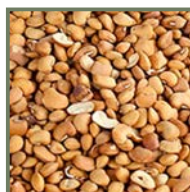


Contributes to soil fertility by restoring nitrogen. Improves inter-cropping and reduces greenhouse gas emissions and need for synthetic nitrogen fertilizers.



High protein content makes it a good alternative to meat.

Species Grown in Nigeria

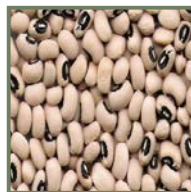


IT89KD-288
(Sampea 11)
and IT89KD-391
(Sampea 12)

Developed by scientists from the International Institute of Tropical Agriculture (IITA), Ibadan, in collaboration with IAR, University of Maiduguri, and Agricultural Development Programmes of Borno, Kaduna, Kano, and Katsina States.

(Sampea 11) 80% yield advantage over local varieties and combined resistance to septoria leaf spot, scab and bacterial blight, as well as nematodes, and tolerance to Nigeria's strain of Striga.

(Sampea 12) Dual-purpose cowpea variety. Medium-to-large brown seeds with a rough seed coat, preferred characteristics for commercial production in Northeast Nigeria.



Sampea 8 and
Sampea 10

Developed by the Institute for Agricultural Research, Ahmadu Bello University, Zaria.

Heat and drought resistant. Sampea 8 matures in 55 days while Sampea 10 is Striga resistant and matures within 60 to 65 days.

Cowpea Value Chain Challenges and Climate Vulnerability

1. Input

Conflict has reduced annual production by 40% between 2012 and 2016

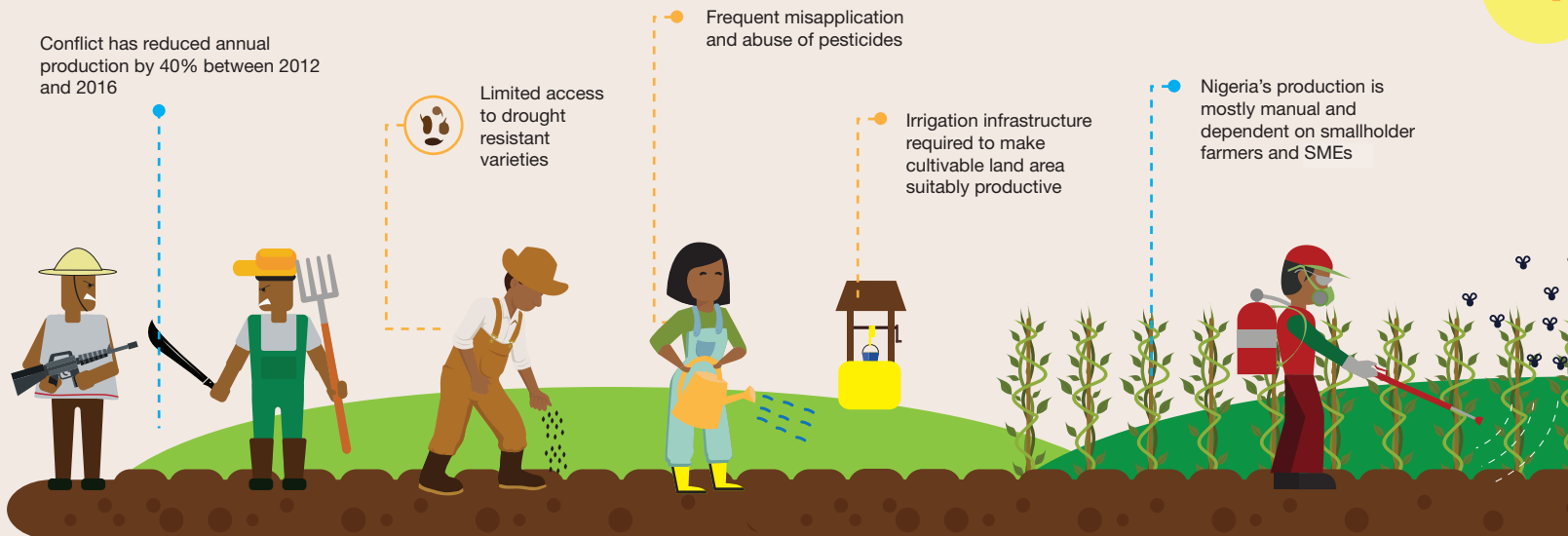
Limited access to drought resistant varieties

Frequent misapplication and abuse of pesticides

Irrigation infrastructure required to make cultivable land area suitably productive

2. Production

Nigeria's production is mostly manual and dependent on smallholder farmers and SMEs



4. Marketing

Limited availability of bulk storage facilities

High storage risk due to pest and environmental factors - Estimated 80% of production is lost to pests (weavils) during storage

Poor transportation infrastructure

Climate Threat
Increased damage to transport infrastructure

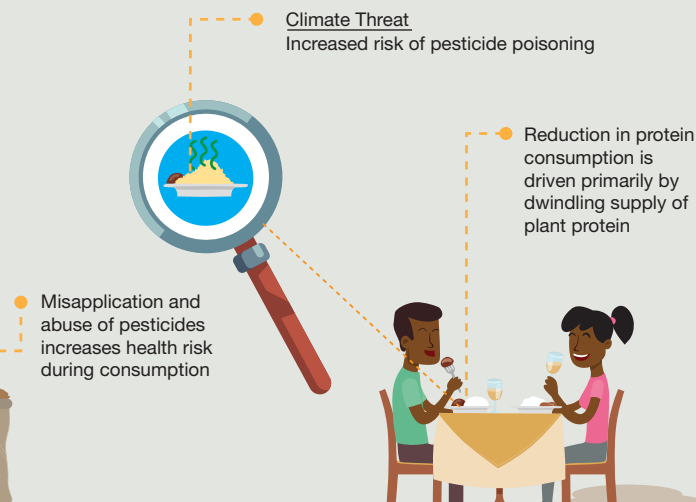
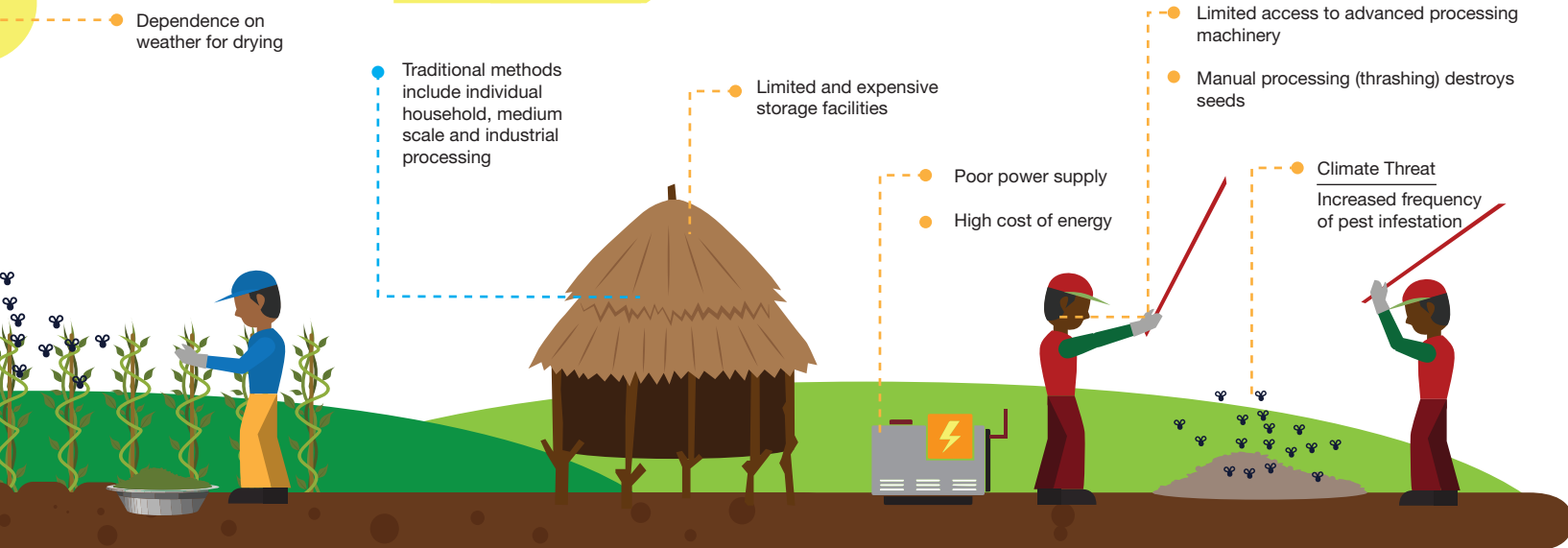
5. Consumption

23kg

Annual per capita consumption



3. Processing



VALUE CHAIN INTERVENTION

International Institute of Tropical Agriculture (IITA) in collaboration with Agricultural Development Projects

- Introduction of high yield seed varieties (IT89KD-288 (now SAMPEA-11) and IT89KD-391(now SAMPEA-12))
- SAMPEA-11 – Dual-purpose cowpea variety with large white seeds and a rough seed coat
- SAMPEA-12 – Dual-purpose cowpea with medium-to-large brown seeds and a rough seed coat
- Distribution: Nationwide (Initial test locations include Borno, Kaduna, Kano, Katsina)
- Highly acceptable to consumers
- Increased yield of at least 80% over local varieties
- Seeds are more resistant to pests and tolerant to parasitic weeds



SOURCES OF ANIMAL PROTEIN

Fish is the primary source of protein for 22.5 million people in the Niger Delta.



FISH

A large number of families earn their living from fishing, fish farming, fish processing and marketing.

2nd

largest producer of fish in Africa

4th

largest importer in the world

Why is Fish Important?



High in nutrients such as protein, iodine and omega-3 fatty acids essential for body growth and brain function. Also an important source of vitamin D.



Lowers risk of heart disease, strokes, protects vision in old age and reduces asthma in children.



Most traded food commodity in the world.



Can be used as a fertiliser and soil conditioner.



Nigeria is the largest market for fish meal in Africa.

Species in Nigeria



Carp

Costs less to rear compared to other fish. Spawns naturally in fishponds. Highly resistant to disease and tolerant to diverse temperature conditions.



Tilapia

Cultivation originated in Northern Nigeria in 1959. Production can average 3,000kg per hectare. Grows at a rate of 0.5kg per month in warm waters.



Catfish

Freshwater species originated in Africa. Long and thick body. Easily cultivated in small ponds or reservoirs. Suitable for reproduction within one year.

Nigeria requires over 2.6m metric tons of catfish. Current production capacity is 40%. So the market is there. Idowu Ayodeji, IITA Youth Agripreneurs

Fish Value Chain Challenges and Climate Vulnerability

1. Input

- Total production ~1 million MT per annum
- Fisheries sector accounts for 2% of GDP
- 67% of production is artisanal
- Aquaculture contributes 30% of production

2. Production

• Asian trawlers illegally fish in West African waters

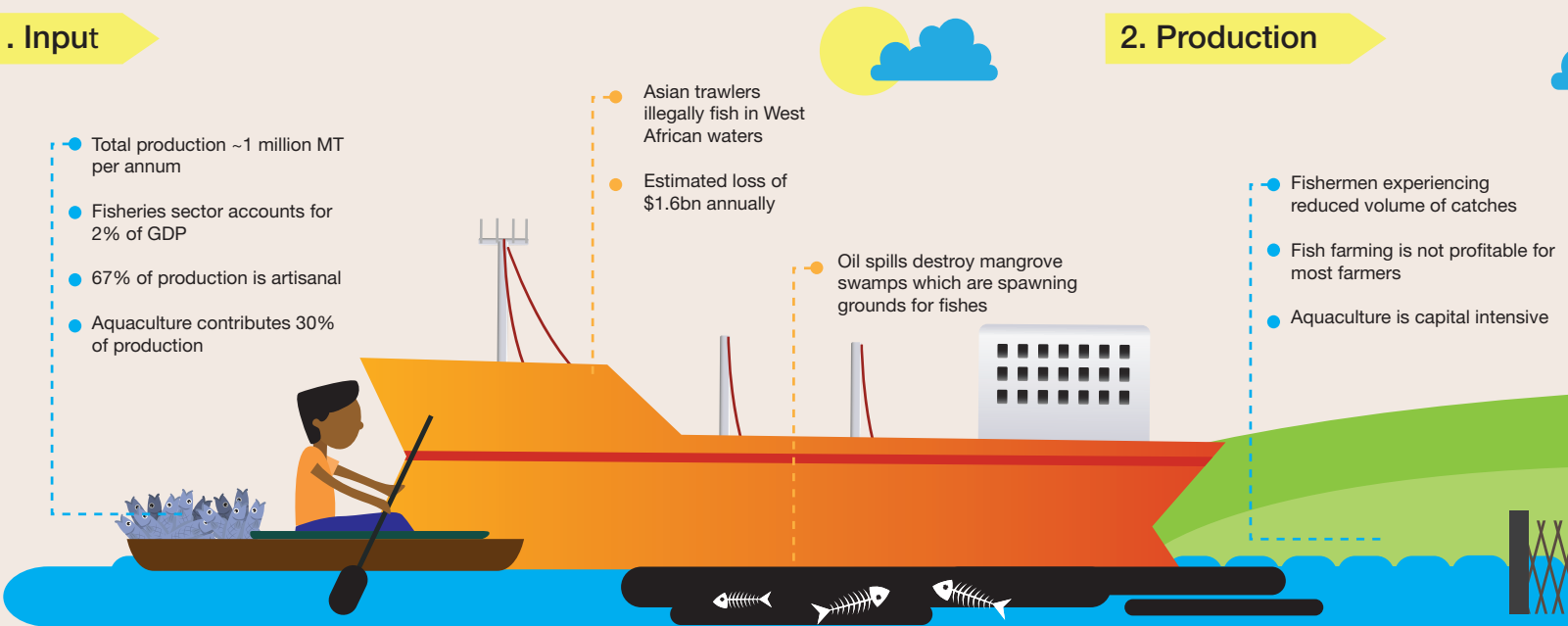
• Estimated loss of \$1.6bn annually

• Oil spills destroy mangrove swamps which are spawning grounds for fishes

• Fishermen experiencing reduced volume of catches

• Fish farming is not profitable for most farmers

• Aquaculture is capital intensive



4. Marketing

• Lack of adequate cold storage infrastructure

• Most wholesalers prefer smoked or dried fish

• Spoiled fish sometimes smoked to mask rot

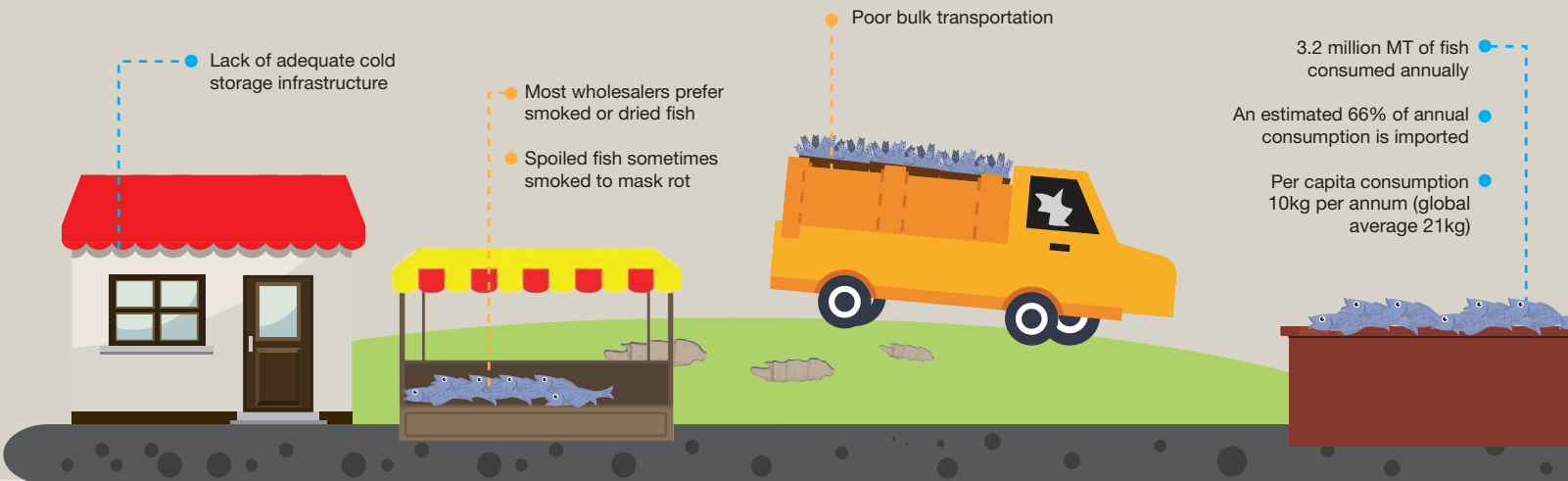
• Poor bulk transportation

5. Consumption

• 3.2 million MT of fish consumed annually

• An estimated 66% of annual consumption is imported

• Per capita consumption 10kg per annum (global average 21kg)



3. Processing

Climate Threats

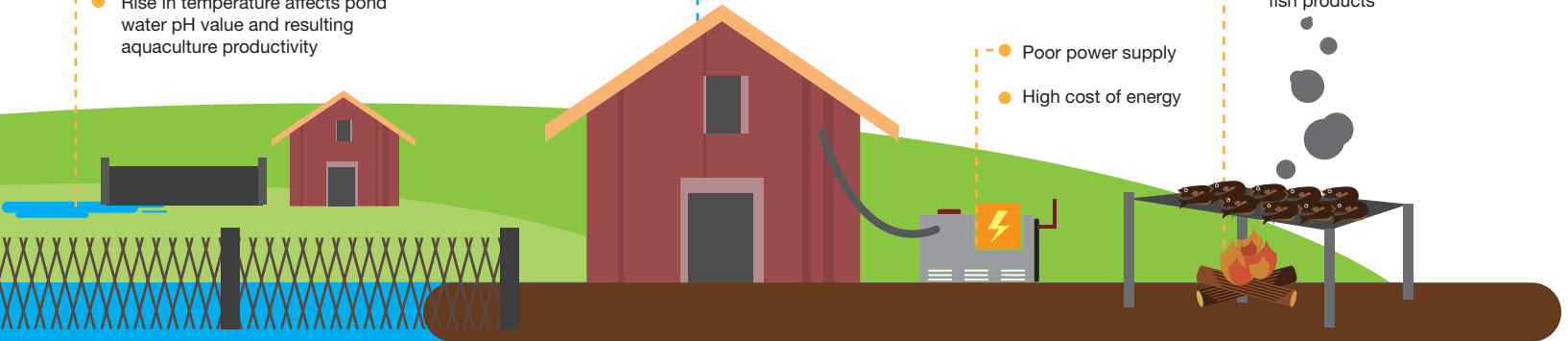
- Flooding of fish farms in low lying areas leading to loss of produce
- Drying up of rivers and lakes leading to loss of catch
- Rise in temperature affects pond water pH value and resulting aquaculture productivity

- Lack of access to storage facilities
- Seasonal scarcity due to dependence on supply from fishermen affects pricing

Climate Threats

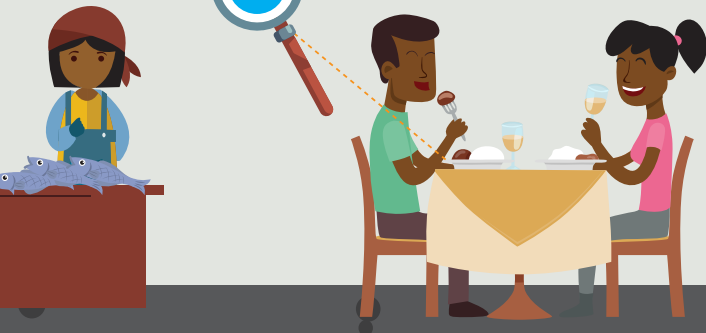
- Wholesale smoking of fish contributes to deforestation
- Increased damage to transport infrastructure results in delayed deliveries and loss of perishable fish products

- Poor power supply
- High cost of energy



Rising domestic demand as a result of:

- Rapid population growth
- Increasing per capita fish consumption



VALUE CHAIN INTERVENTION

Cross River State Gov't

- Growth Enhancement Support for fisheries
- Provision of fingerlings and fertilizers to farmers

European Union

- €50m fund for sustainable fisheries development and marine security for West Africa


Bayelsa State Government

- Provision of equipment for 4,000 fishermen



BEEF & DAIRY

Beef and milk are important sources of animal protein in the Nigerian diet. Decreasing water and pasture for livestock and outdated methods of animal husbandry have resulted in growing domestic supply challenges.



The grasslands of Nigeria can barely support 40% of Nigerian livestock. Expanding cultivation, climate change and degradation of range lands have depleted the grassland resources that Nigeria used to have.

Saleh Momale, Pastoral Resolve

95% of the cattle population is raised by pastoralists who move herds over thousands of miles to find pasture. This system often results in weight loss, low yields and high morbidity rates.

1.8% Supply growth rate per annum

5.1% Demand growth rate per annum

Why is Beef Important?



One of the best sources of protein, iron, zinc, and vitamins A, B and D.



Cow dung can be used as fertiliser, soil conditioner and an alternative for fossil fuels.



Major driver of economic growth and source of income for farmers and butchers.



Lagos State is the largest consumer of Nigerian beef.

Species in Nigeria



White Fulani

Most widespread, representing 37% of the national herd. Provides much of the beef consumed in Nigeria. White coat and height of approximately 130 cm. Tolerant to heat and adaptable to local conditions. Triple purpose - fattened for beef, used as draught animal or for milk production.



Sokoto Gudali

Represents 32% of the national herd. Light grey coat colour. Produces an average of 1,500 kg of milk per lactation cycle.



Red Bororo

Represents 22% of the national herd. Burgundy coloured coat with long, thick horns. Adapts well to arid and semi-arid conditions.



N'Dama

Medium-sized compact body with lyre-shaped black-tipped horns and no hump. Adapts well to high temperature and humidity conditions.

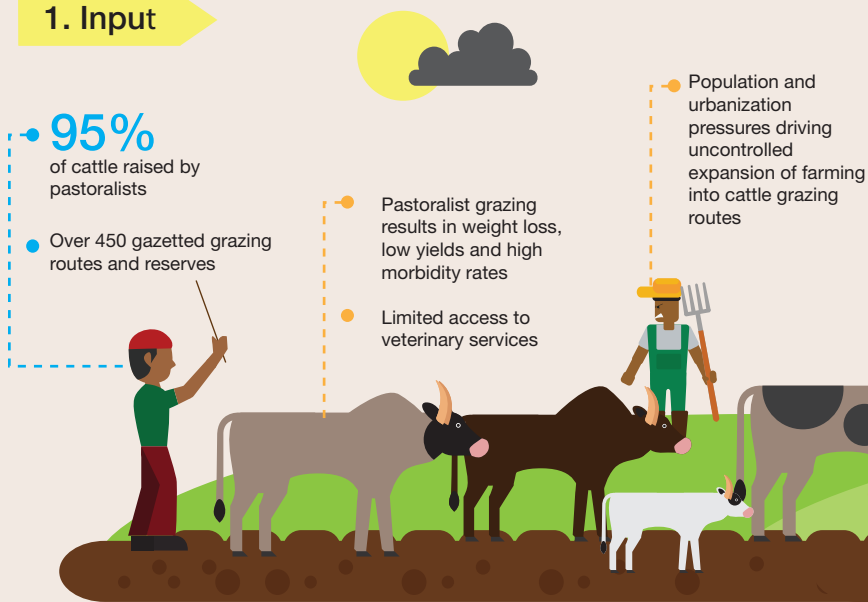


Muturu

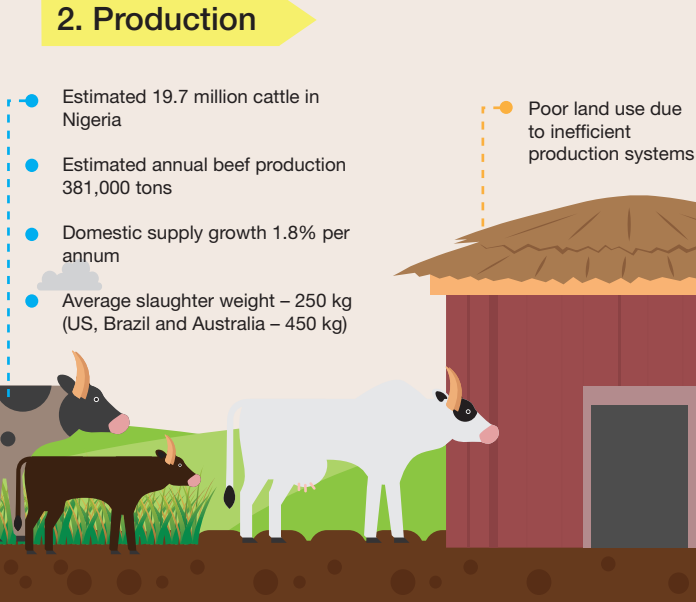
Dwarf West African Shorthorn, commonly called Muturu in Nigeria. Generally black, or black and white. Compact body with a straight back, broad head and no hump.

Beef Value Chain Challenges and Climate Vulnerability

1. Input



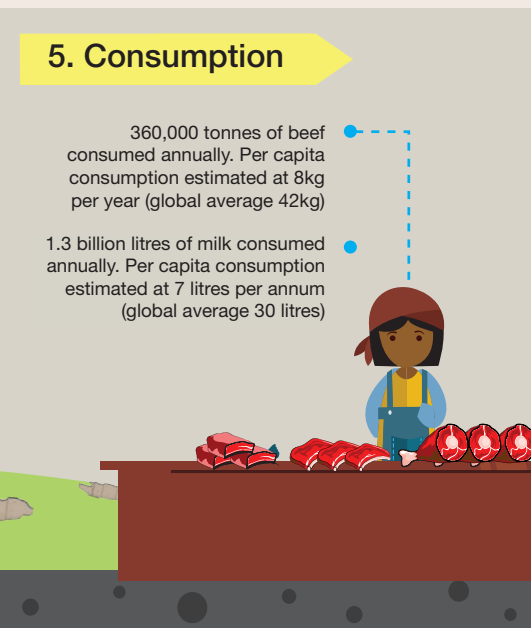
2. Production



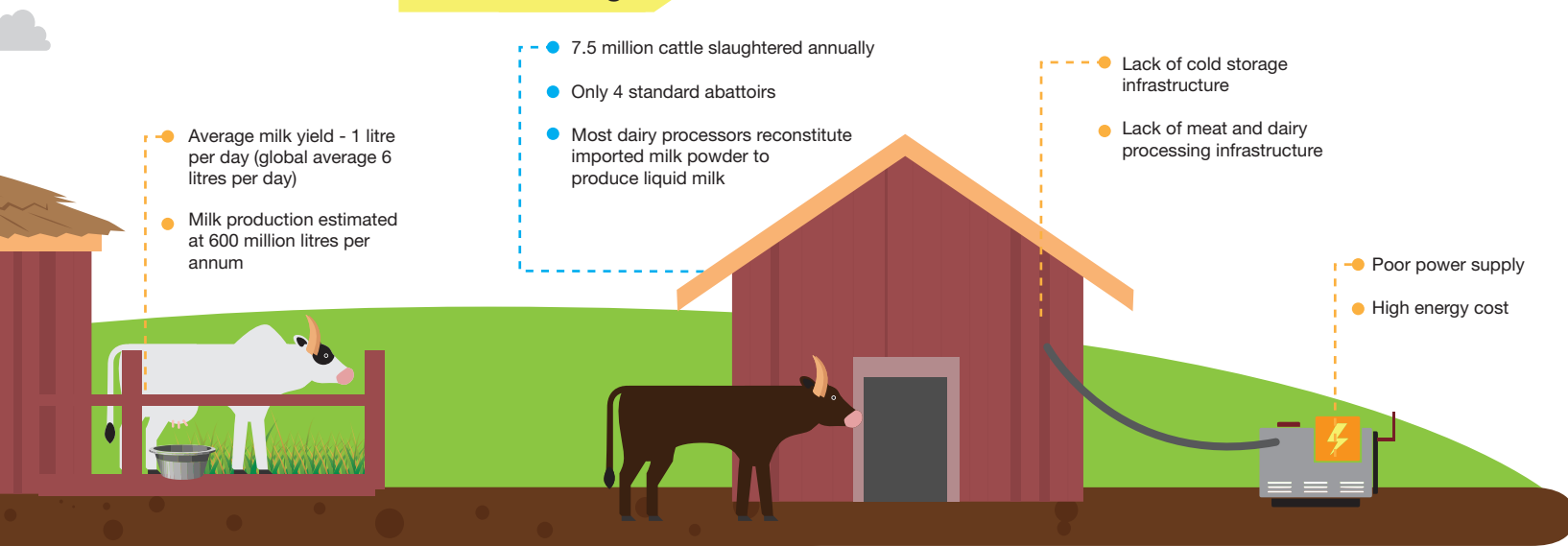
4. Marketing



5. Consumption



3. Processing



Local breeds can produce 1 litre per day. An average Holstein Friesian cow produces 50 litres per day. Nnali Shekari, Integrated Dairies Ltd.

90% of milk products consumed in urban areas are imported



VALUE CHAIN INTERVENTION

Adamawa State Government

Allocation of 72 grazing reserves to cater for 1.5million cattle in 2016


Rico Gado Feeds

- Feed mills in Yola and Abuja
- Locally sourced quality fodder
- Capacity to produce 50,000 metric tonnes of assorted animal feeds annually



AN ESSENTIAL VEGETABLE CROP

Ask any Nigerian who makes the best jollof rice, and you have a long animated discussion that usually ends with Nigeria or Nigerian mothers crowned as champion. But ask what may happen when there's no rice or tomato to make jollof, and you may be met with silence.



The tomato factory needs to buy tomatoes at \$80-100 per ton. Nigerians can't produce at that cost. The average yield per hectare is 5-7 tons while the global average yield is 35 tons per hectare.

Mira Mehta , Tomato Jos

TOMATOES

Tomatoes are one of the most important vegetable crops grown in Nigeria. A condiment in most dishes, they are also an inexpensive source of vitamins.

Why are Tomatoes Important?



An antioxidant and healthy source of vitamins A, B and C.



Helps reduce blood pressure and protects against indigestion, kidney disease, diabetes and many forms of cancer.



Contributes to a healthy, well-balanced diet rich in minerals, essential amino acids, sugars, dietary fibres, iron and phosphorus.



Grows quickly and is easy to cultivate in a variety of soil types.



Nigeria is the 14th largest producer in the world. 60% of farmers are small-scale.

Species Grown in Nigeria



Roma VF

Oval shape with good shelf life.
126 days to mature - can be grown year round.
Not susceptible to cracking.
Common in Northern Nigeria.
Potential yield of 30-35 tonnes per hectare with seed rate of 0.04-0.6kg.



UC82B

Good shelf life.
125 days to mature - can be grown year round.
High yield of 30-35 tonnes per hectare with seed rate of 0.4-0.6kg/hectare.



Beske

Popular local variety cultivated in Okene, Kogi State.
Oval shape with folded-in base.
Yield of 5-7 tonnes per hectare.

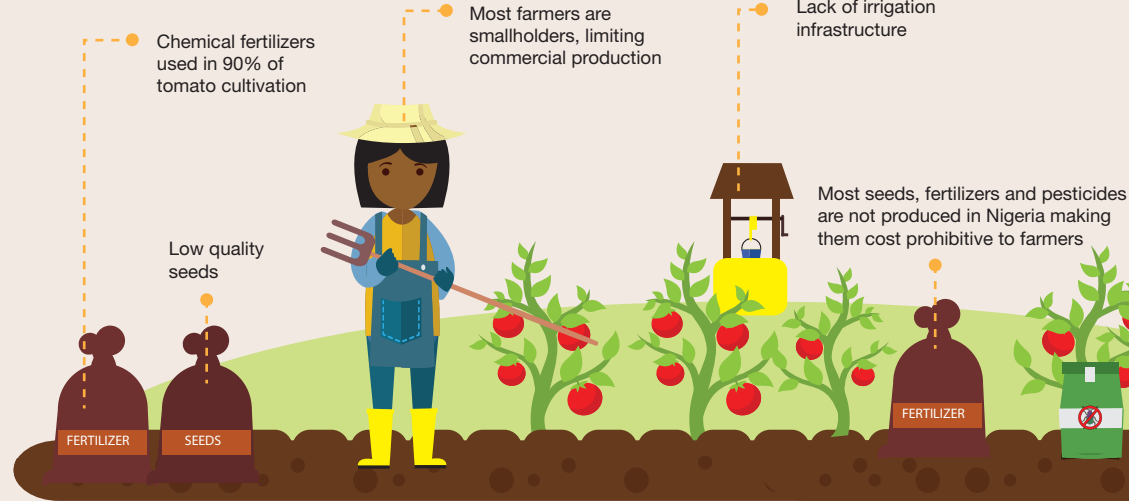


Hausa Grade 1

Predominantly cultivated in Kano State.
Oblong shape with pointed tip.
Yield of 5-7 tonnes per hectare.

Tomato Value Chain Challenges and Climate Vulnerability

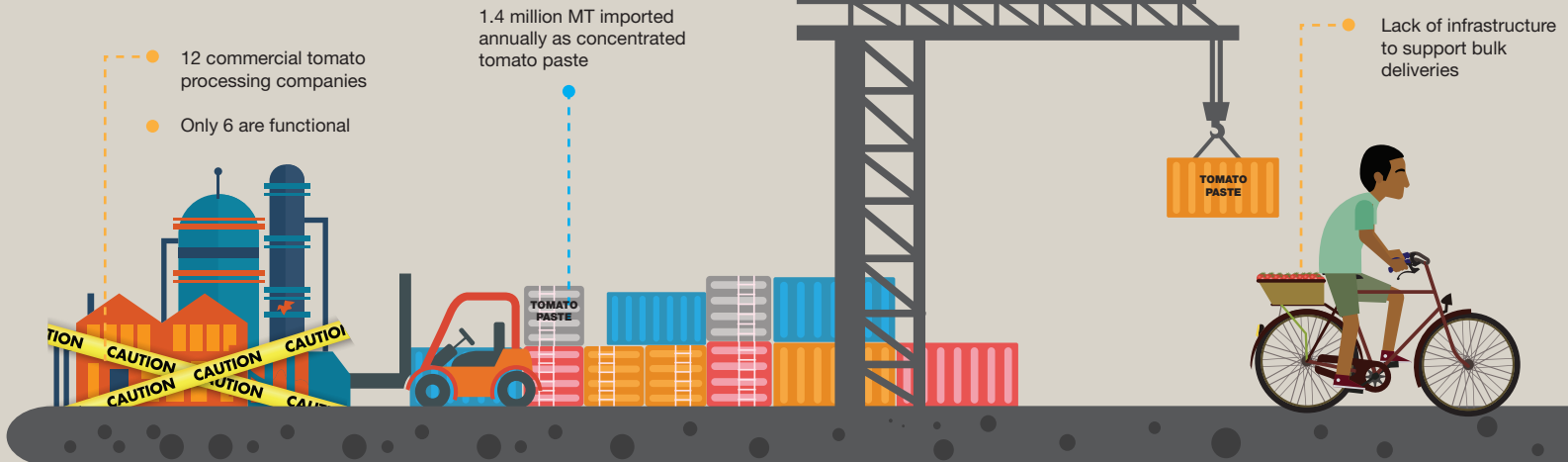
1. Input



2. Production

- Nigeria is the 14th largest producer of tomatoes in the world
- Total production 1.8 million MT per annum
- Reduced access and delayed delivery of quality seeds

4. Marketing



3. Processing

We have 40% post harvest losses in the country. Why should we produce tomatoes that go to waste because we don't know how to process them?

Ngozi Okonjo-Iweala, Global Commission on the Economy and Climate

Dependence on rain for water supply

Inadequate pest and weed control

Approximately 50% of harvested products are lost due to exposure to heat, poor storage and suboptimal packaging

Estimated 95% reduction in profit

5. Consumption

80% of processed tomato products in urban markets are imported

Climate Threats

- Increased import dependence
- Higher product prices
- Yearly price inflation between April and July due to seasonal scarcity

VALUE CHAIN INTERVENTION

Rockefeller Foundation - Yieldwise Food Waste Initiative

- \$130m initiative
- To reduce post-harvest losses by 2030
- Develop better agronomy skills in post-harvest loss management



ENSURING FOOD SECURITY IN NIGERIA'S CHANGING CLIMATE

Responding to climate threats requires collective action. Government must provide leadership by creating and championing a framework with clear goals, roles and responsibilities. Platforms for engagement with key stakeholders are required to achieve climate readiness, improve decision making, develop strategies and ensure implementation.



For us to protect our ecosystem, to tackle global warming and to keep our food diversity, we need to support agriculture that works in harmony with nature.

Nnimmo Bassey
Health of Mother Earth Foundation

If we invest in the young population of Nigeria, the sky is the limit.

Amina Mohammed, Deputy Secretary-General, United Nations

Challenges to Nigeria's Climate Readiness

1

Difficult business environment – stifling innovation

2

Poor governance – particularly with respect to controlling corruption

3

Limited social development

Recommendations for Climate Readiness in Agriculture



Improve governance and stakeholder engagement



Establish knowledge and information services



Develop climate-smart agricultural strategy and implementation framework



Build community level capabilities



Provide information and accounting systems

1 IMPROVE GOVERNANCE AND STAKEHOLDER ENGAGEMENT



Designate lead ministry or inter-ministerial body to manage and coordinate climate readiness activities with clear decision-making processes and transparency.



Make sure institutional roles are clearly defined.



Create and sustain platforms for stakeholder engagement and consultation, including the private sector.



Ensure inclusion of affected and vulnerable groups, such as smallholders, indigenous communities and women.



2 ESTABLISH KNOWLEDGE BASE AND INFORMATION SERVICES



Assess vulnerability and adaptation needs of farmers and agricultural sector.



Classify agricultural production systems according to adaptation needs and mitigation opportunities.



Identify options and priorities for climate-smart agriculture, including reduction of agriculture greenhouse gas emissions.



Make climate information services available and accessible to farmers and other agricultural decision makers.



Analyse and reform current land-use practices and legislation to support climate-smart agriculture.



Ensure social and environmental impacts of climate-smart agriculture programmes are anticipated before they are scaled up, particularly for vulnerable groups.

To be food secure, we must be climate resilient person, every day, no matter who or where is
Swallow:

3 DEVELOP CLIMATE-SMART AGRICULTURAL STRATEGY AND IMPLEMENTATION FRAMEWORKS



Formulate vision and goals for the agricultural sector.

- Ensure buy-in from stakeholder groups
- Balance food security, adaptation and mitigation and the need to meet United Nations Sustainable Development Goals



Ensure climate-smart agriculture interventions are analysed for social and biophysical suitability.



Identify and pursue priority interventions that reduce vulnerability.



Ensure projects are viable and sustainable.



Make provisions for programme monitoring and improvement.

nt. There is no time. We must ensure that every
guaranteed safe, sufficient and nutritious meals.
Food Security in Nigeria's Changing Climate

4 BUILD COMMUNITY LEVEL CAPABILITIES



Make credit available to rural farmers who implement climate smart practices.



Establish and improve access to seed banks with high yield seeds.



Provide effective technical support and agricultural extension service.



Galvanize private sector and rural farmer organizations, including women and youth, to support innovation, learning and implementation of climate smart agriculture practices.

5 PROVIDE INFORMATION AND ACCOUNTING SYSTEMS



Establish criteria and measurable indicators for resilience, climate change mitigation and food security.



Create monitoring systems for climate threats and vulnerability assessments.



Develop a national system to measure, monitor, report and verify GHG emissions and multiple-benefit indicators relevant for agriculture, in coordination with other monitoring activities.

Words are sweet but they can not take the place of food.

Igbo Proverb





SWALLOW

FOOD SECURITY IN NIGERIA'S CHANGING CLIMATE

INTRODUCTION BY
Amina J. Mohammed
DEPUTY SECRETARY-GENERAL
UNITED NATIONS

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Swallow: Food Security in Nigeria's Changing Climate addresses the issue of food security in Nigeria brought on in part by our changing climate inadequate infrastructure and traditional agricultural practices. Produced by Jacqueline Farris, Director General of the Yar'Adua Foundation and Directed by Dan McCain of Core Productions, the documentary features inspiring stories and explores opportunities and solutions to our food security challenge.



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