

# Developing the rice industry in Africa

Nigeria assessment  
July 2012

BILL & MELINDA  
GATES *foundation*

## Agenda

- A. Executive summary
- B. The Nigerian rice industry
- C. Potential partners in Nasarawa, Taraba and Niger States
  - Notore
  - Stallion
  - OLAM
  - Dominion
  - 100 Chinese mills and DADTCO small mills
- D. Recommendations

## **A. Executive summary**

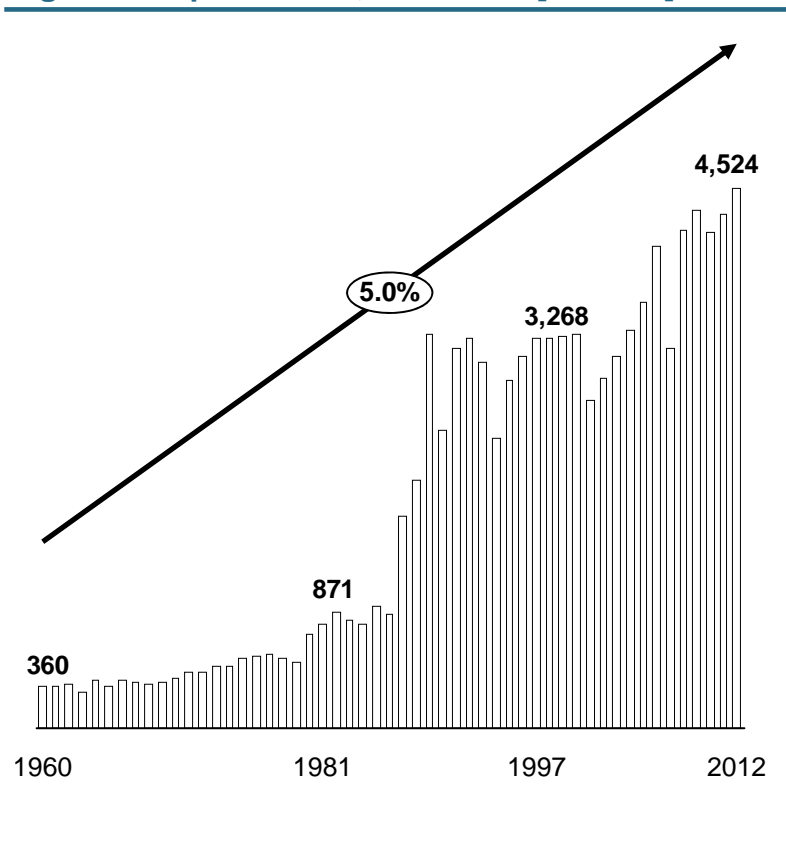
# Executive summary

- **Although Nigeria has excellent agronomic conditions for rice production and local demand is strong and growing, high quality imports dominate 60% of the market due to the lower quality of local rice and low investment due to inconsistent government policies**
  - Although agronomic conditions throughout Nigeria are suitable for rice and production takes place throughout the country, output is mostly of low quality and price
  - Therefore, ~60% of rice consumption is satisfied by high quality imports from Asia
  - There is a high demand for parboiled rice (60% market share) and both imports and local production are parboiled
  - The high quality segment is expected to grow strongly driven by population growth in the cities
  - 90% of rice is produced by smallholders who use it as a cash crop
  - Inconsistent policies, particularly around import tariffs, input subsidies and export bans have reduced investment in the sector
  - However, the federal government is prioritising rice as a key crop to support and plans supportive policies and low cost credit (through its NIRSAL initiative) to players in the industry
  - Working in this promising rice market is made more difficult by the increased security threats in the north of the country
- **Taraba and Nasarawa States are suitable partner states for donor support due to supportive local governance, good security and the presence of private sector partners**
  - Although Taraba and Nasarawa currently have a relatively small share of total production, their combined production is still large (246k MT in 2011), there are many farmers available, and there is much room for yield improvement
  - In contrast to most of the larger rice producing states, Nasarawa and Taraba have few security issues
  - The state governments are very supportive of agriculture in general and of rice in particular
- **Notore, Stallion, Olam and Dominion are either already or planning to work with smallholders, making them suitable partners for donor support to improve models and scale**
  - Notore is a local fertilizer production company that is expanding into seed production through outgrowers
  - Stallion has a large mill in Kano state and works with rice outgrowers to obtain paddy; they aim to triple the number of farmers they work with (from 3,000 in 2012 to 10,500 in 2015)
  - OLAM is setting up a commercial rice farm in Nasarawa State and aims to develop a large outgrower scheme similar to their previous scheme in Benue
  - Dominion is starting a large commercial rice farm in Taraba State and plans to start a community farm similar to their farm in Kenya
- **In the long term Niger State also poses a good opportunity for improved rice production, and support for DADTCO and a new Chinese mill program should be investigated further**
  - Niger State is a large rice-producing area close to markets – potential for future private sector investment is high
  - GoN is importing 100 mills from China that will be privatized from 2015; there's an opportunity to ensure these are transitioned into successful, market-driven businesses sourcing from smallholders.
  - DADTCO is considering developing a business for providing mobile milling services to smallholders in Taraba State

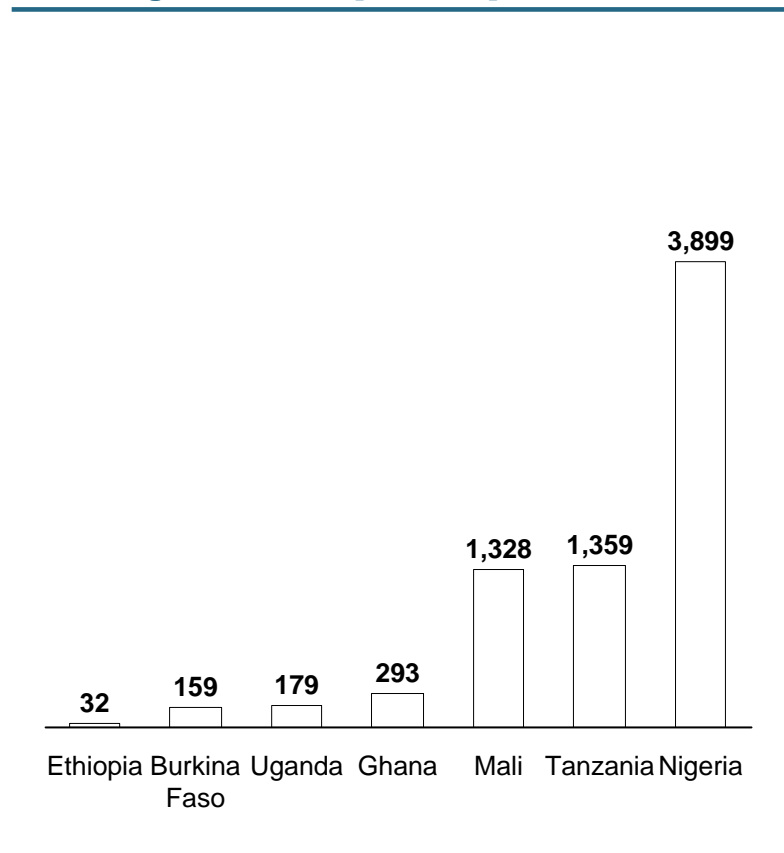
## **B. The Nigerian rice industry**

# Nigeria has strong and growing rice production relative to other African rice-producing countries


Nigeria rice production, 1960-2012 ['000 MT]



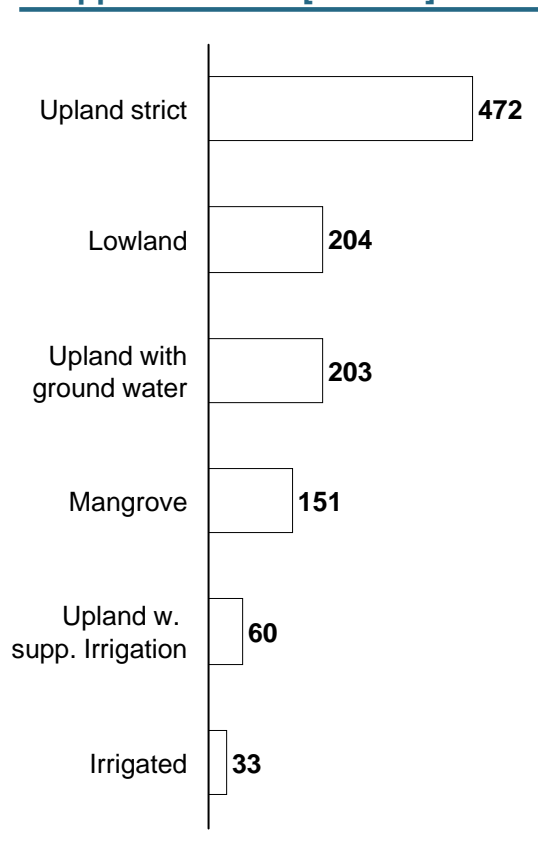
Rice production compared to other producers on average 2007-2009 ['000 MT]



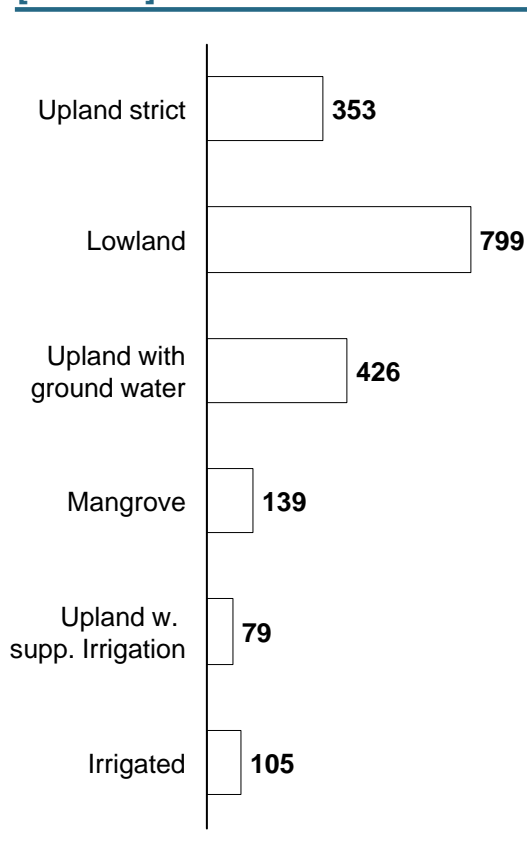
# Most of the rice is produced in lowland conditions given much higher yields than upland production

 Potential yield [MT per Ha]

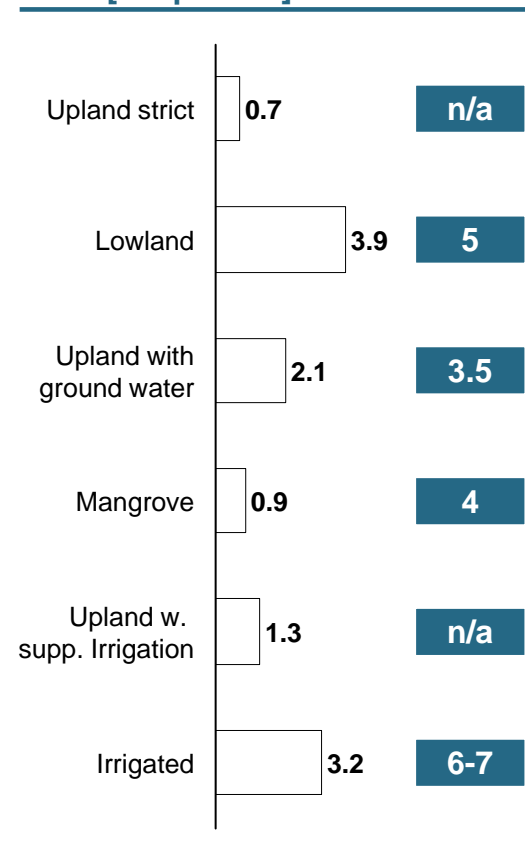
**Cropped rice area ['000 Ha]**



**Quantity of paddy produced ['000 MT]**

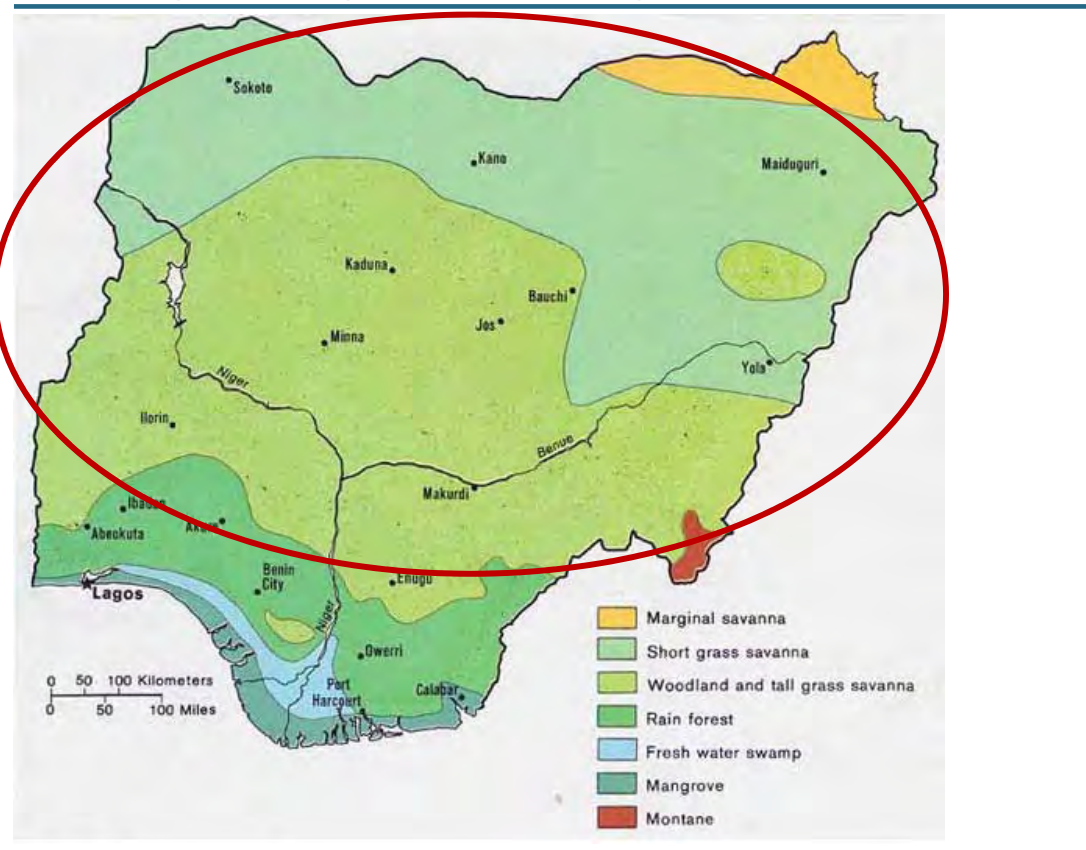


**Yield [MT per Ha]**



# Most of Nigeria has agro-climatic conditions which are suitable for rice

Map of agro-ecological zones in Nigeria



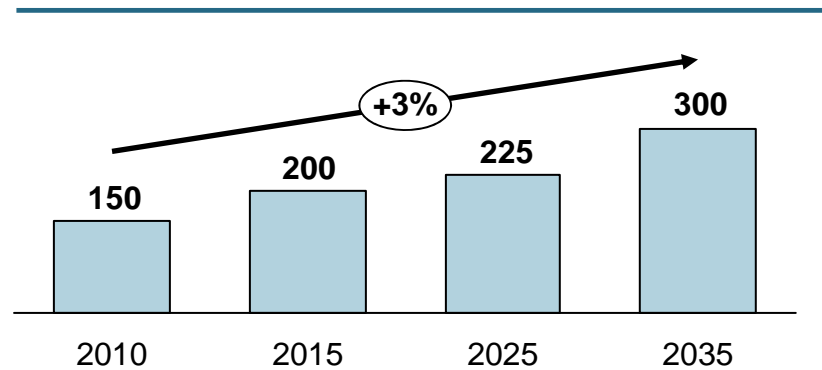
## Agro-climatic conditions suitable for rice in Nigeria

- Nigeria's agro-ecological zones are mostly savanna (marginal, short grass and woodland), rain forest, fresh water swamp, and mangrove
- **80% of Nigeria's land is savannah with temperature, humidity and rainfall levels suitable for rice production**
- As with all rice production, combining the land with irrigation greatly increases rice yields



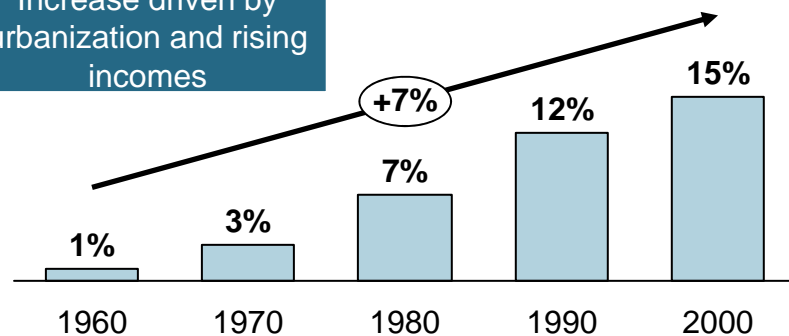
# Rice consumption in Nigeria is forecast to grow at 5% p.a. as the population is growing and urbanizing as incomes rise

Driver I: Nigeria's population [m]

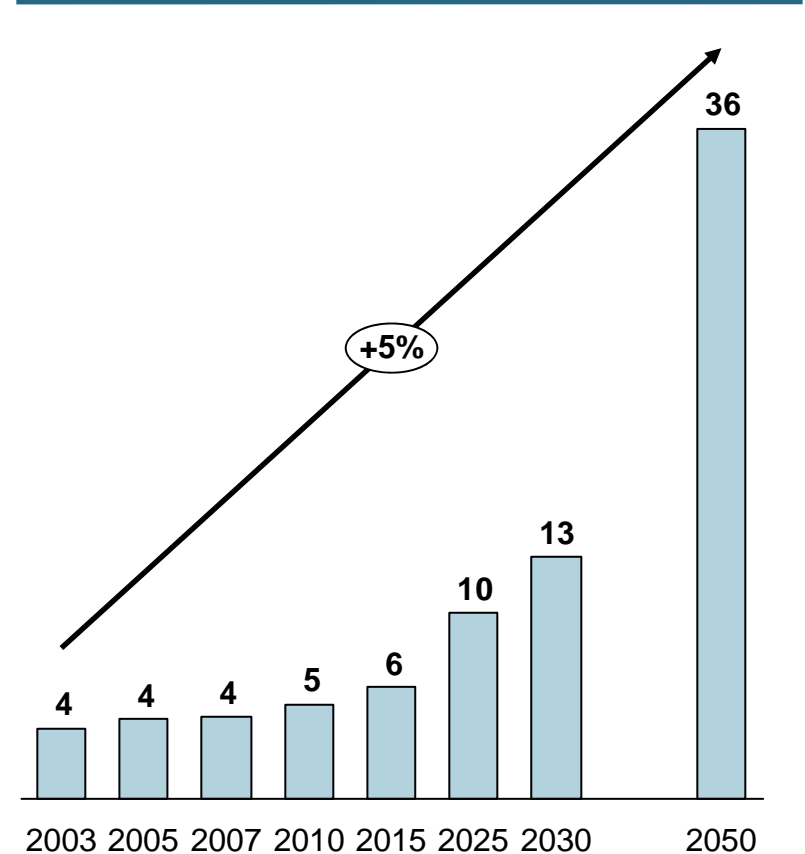


Driver II: Rice share of typical Nigerian's diet [%]

Increase driven by urbanization and rising incomes

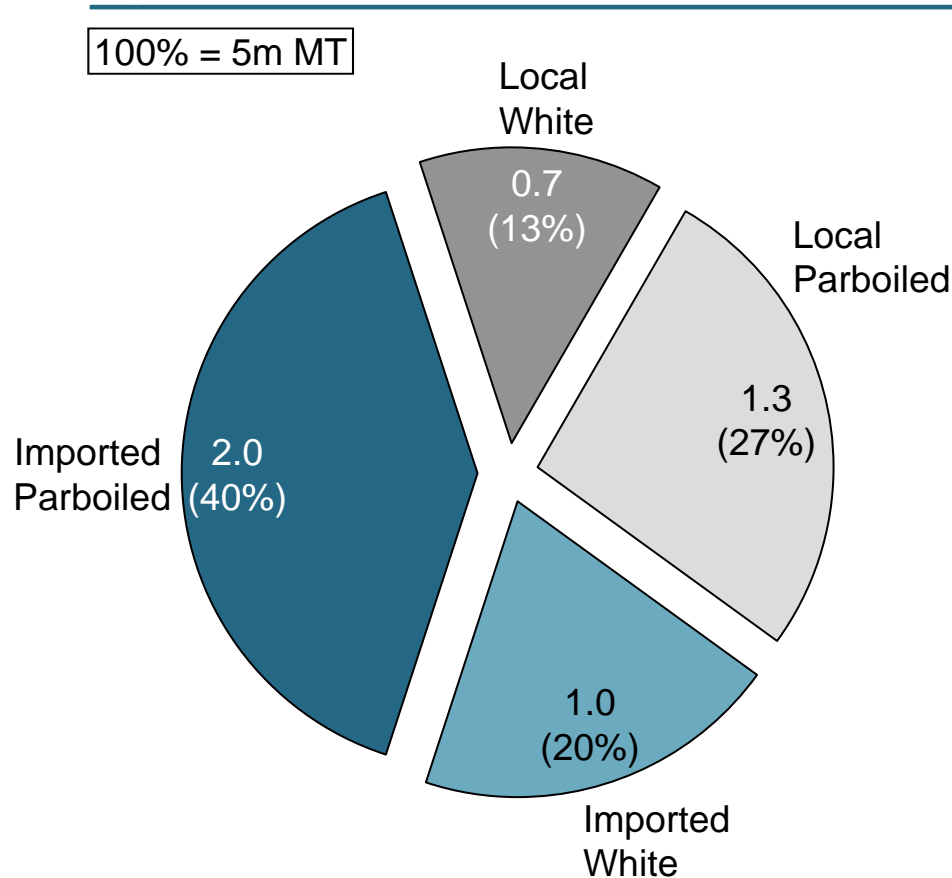


Nigeria (projected) rice demand [m MT]



## Nigerian consumers prefer parboiled rice, and imported rice makes up 60% of the market due to higher quality

Nigeria rice consumption by type [m MT]

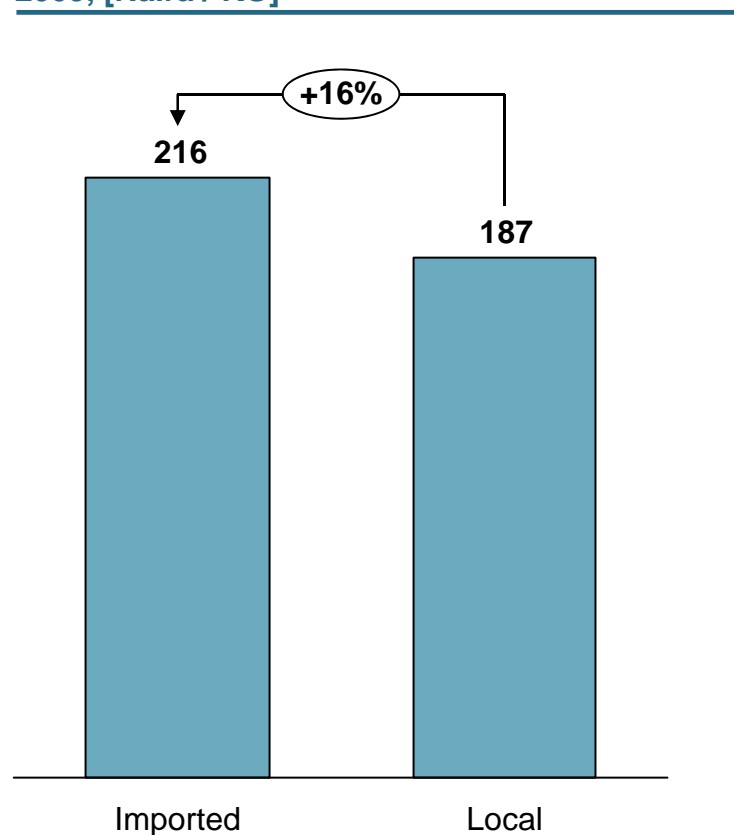


### Rice consumption preferences in Nigeria

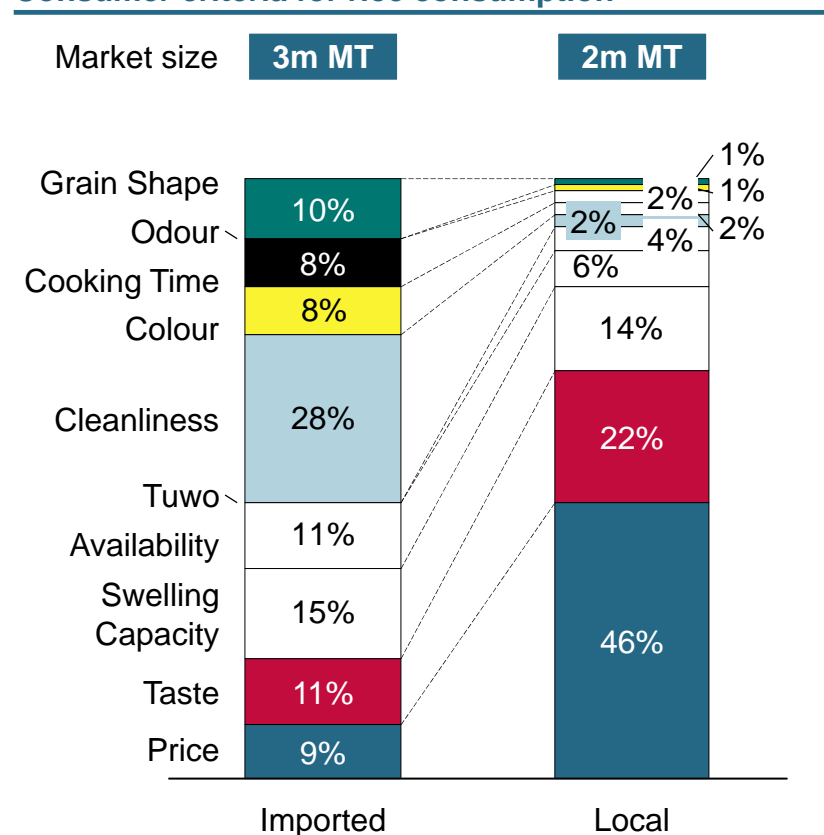
- There are two discrete market segments for household rice consumers:
  - high-quality rice consumers: less price sensitive and prefer cleaner, less broken rice
  - lower-quality rice consumers: more price-sensitive and prefer the taste of local rice
- **The most rapidly growing market segment is at the higher-end, which is being met by imported rice at the moment**
- For both domestic and imported rice, there is a strong consumer preference for parboiled rice
- Parboiling allows the rice to cook faster, prevents the grains from sticking together and offers higher nutritional content relative to rice that is not parboiled

# Most consumers are willing to pay a 16% premium for the cleanliness and attractiveness of imported rice, while price sensitive consumers buy local rice

Market price of local versus imported rice, 2009, [Naira / KG]



Consumer criteria for rice consumption



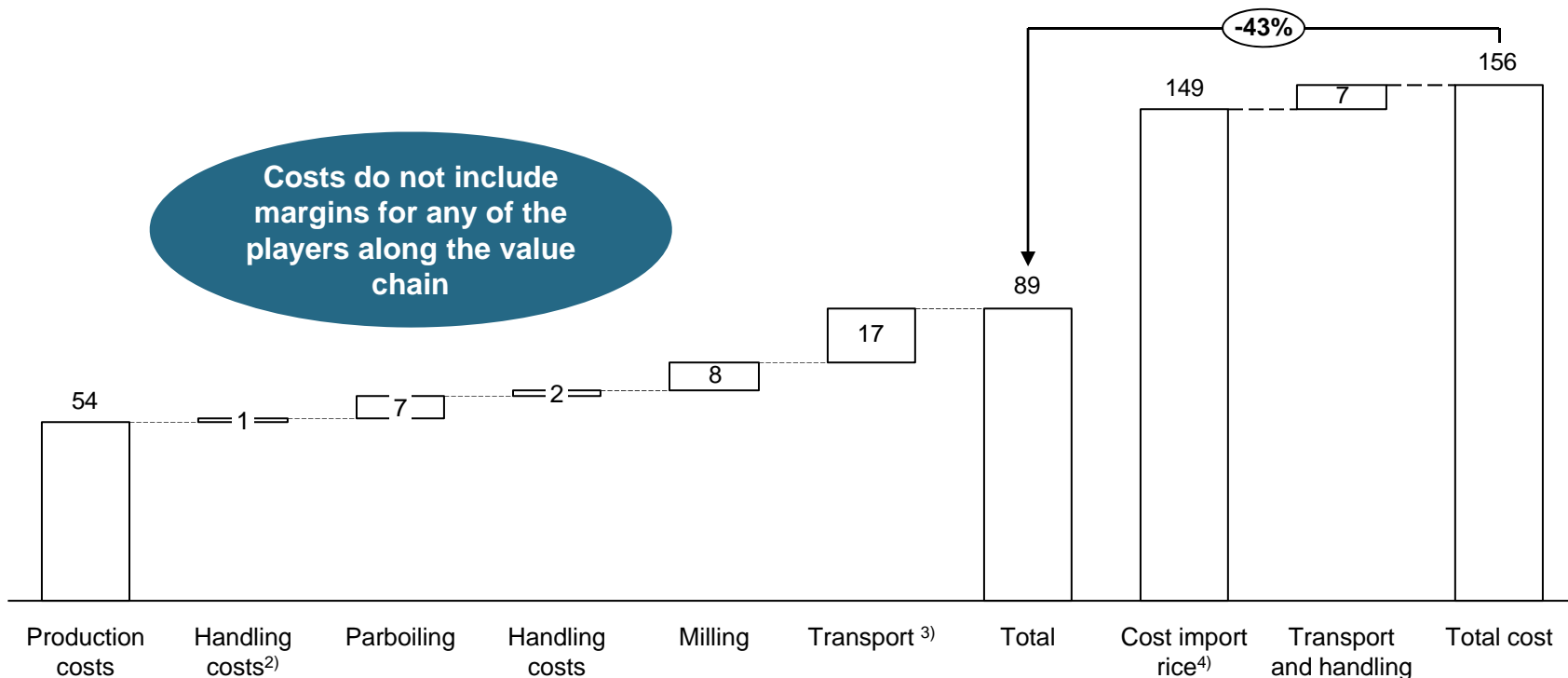
**The market for higher quality, imported, rice is growing more rapidly than the market for lower quality, local, rice**

Source: USAID GLOBAL FOOD SECURITY RESPONSE NIGERIA RICE STUDY, 2009

# A 43% cost advantage for local rice provides sufficient room for capturing healthy margins along the value chain

Cost of production of milled parboiled rice on smallholder farm using all necessary inputs<sup>1</sup>, 2009 [Naira / KG]

Cost of imported rice, 2009 [Naira / KG]

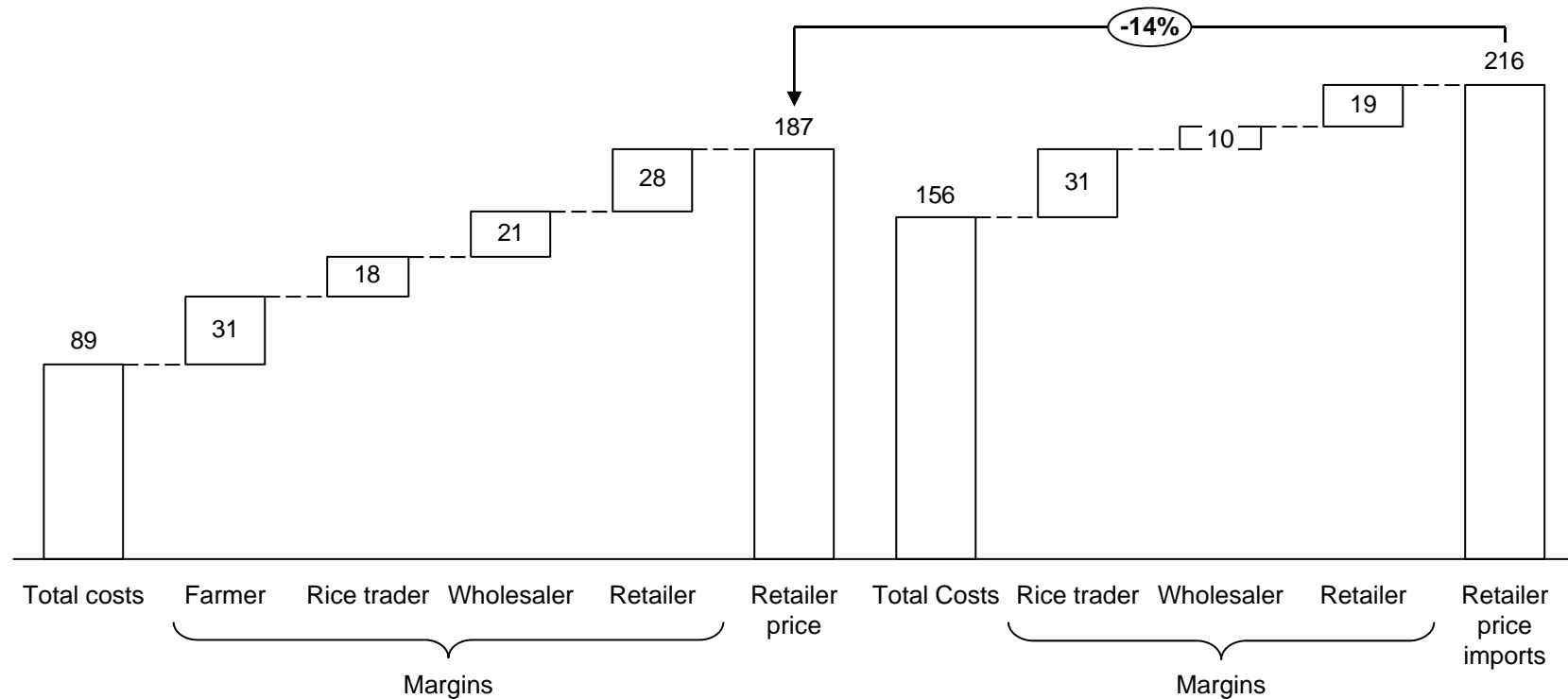


1) Based on a fully costed MT using market rates for inputs and **all labor**, applying best practices and achieving yields of 3.5-4 MT of paddy; 2) Handling costs are costs made for (off) loading trucks; 3) Transport includes: moving from mill to truck, transport by road, bribes paid along the road, off loading and temporary storage at the market and transport to market; 4) Cost of imported rice includes 32.5% import tariff

## However, high margin payments along the value chain still allow for a 14% price advantage relative to imports

Retail price after margins of milled parboiled rice on smallholder farm using all necessary inputs<sup>1)</sup>, 2009 [Naira / KG]

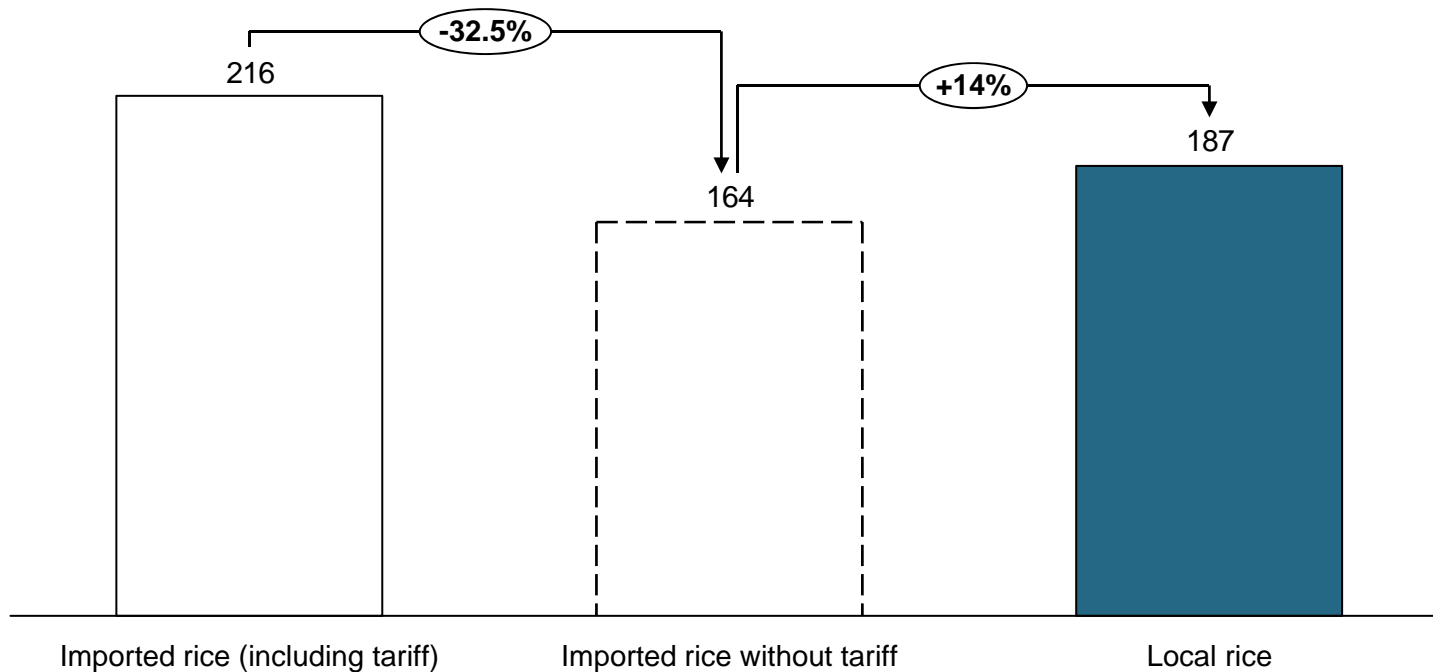
Retail price of imported rice, 2009 [Naira / KG]



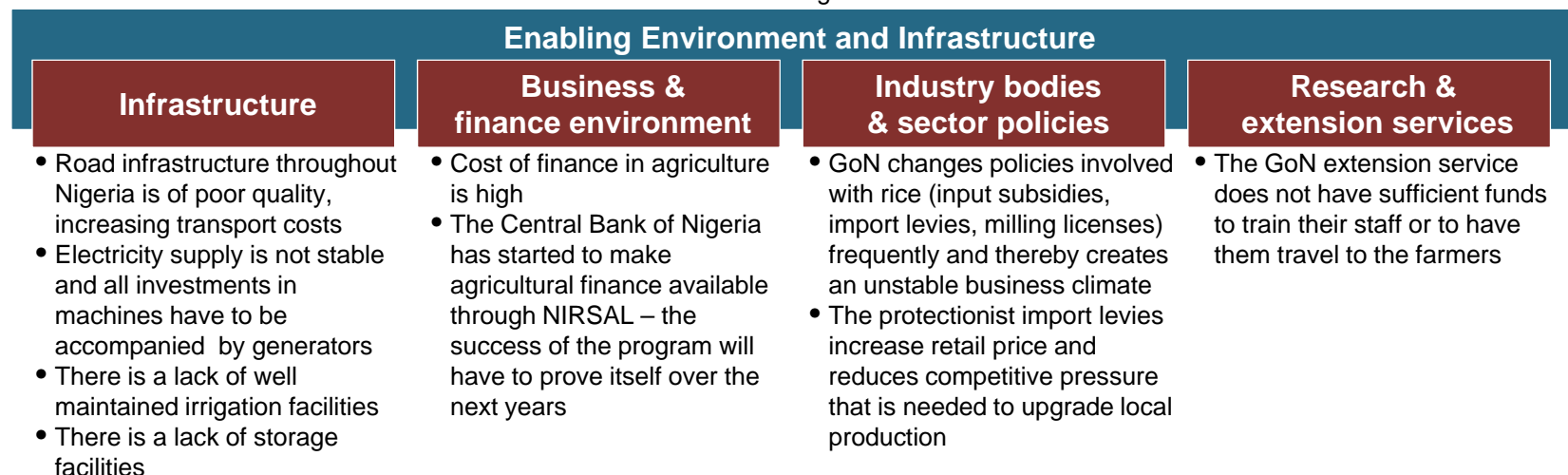
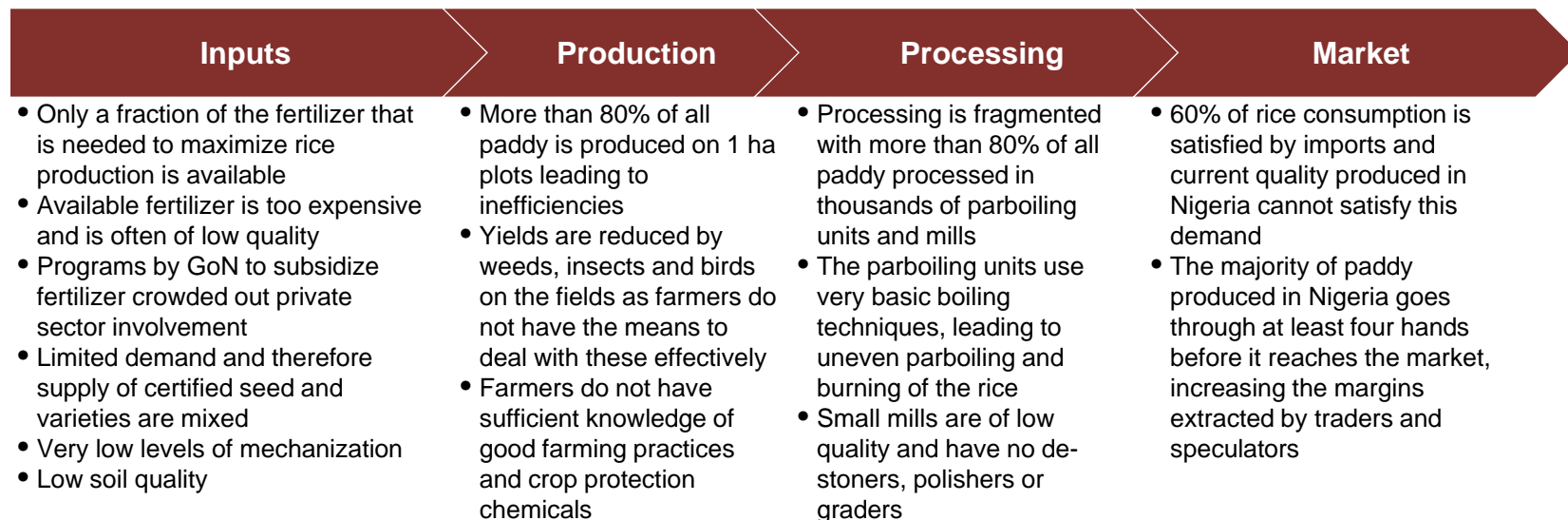
1) Based on a fully costed MT using market rates for inputs and **all labor**, applying best practices, and achieving yields of 3.5-4 MT of paddy

**If the 32.5% import tariff were removed, local rice would be 14% more expensive than imported rice, requiring either production cost or margins to fall**

Price comparison of domestic and imported rice, 2009 [N / KG]



# The rice industry in Nigeria needs to overcome a number of challenges across the value chain



Source: Interviews, USAID GLOBAL FOOD SECURITY RESPONSE NIGERIA RICE STUDY, 2009 and Nigeria National Rice Survey 2009

## However, the security situation makes it difficult to assess opportunities and implement programs in the country

### A number of rice producing states have regular Boko Haram attacks

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**KADUNA - 18 June 2012:**

*Radical Islamist group Boko Haram has said it was behind Sunday's suicide bombings of three churches in the northern Nigerian state of Kaduna*

**BENUE – 10 June 2012:**

*Security agencies in Benue State have detained over 100 feared members of the terrorist group, Boko Haram*

**KANO - April 2012:**

*At least 16 people have been killed in a gun and bomb attack on Nigeria's Bayero university in Kano*

### Rice producing states are on the US State Department travel watch list

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- On June 21 2012 US Department of State issued a new travel warning because of continued violent activities in the country
- All but essential travel is to avoided to the rice producing States Borno, and Kano states
- Furthermore, based on safety and security risk assessments, travel by U.S. officials to all northern Nigerian states (of which many are main rice producing states) must receive advance clearance by the U.S. Mission as being mission-essential
- On December 31 2011 the President of Nigeria declared a state of emergency in 15 local government areas, among which are Borno and Niger
- There is a 24-hour curfew for the main rice producing state Kaduna after Boko Haram bombings



## The attacks have spread to Abuja, with recent attacks on places frequented by expatriates

### Religious violence spreading into Abuja

**December 2011:**

*A powerful explosion has torn through a church in the Nigerian capital Abuja during a Christmas Day service*

**April 2012:**

*Bombing Of Thisday Newspaper Offices In Abuja*

### Attacks in places frequented by expatriates

**June 2012:**

*Bomb Blast Hits Popular Abuja Nightclub*

**July 2012:**

*Bomb planted In front of 'Park and Shop' Supermarket, Abuja*

## Partly because of this Nigeria has a low score at the World Bank ease of doing business index

Ease of doing business country ranking, 2011

### Global country ranking<sup>1)</sup>

RANK	COUNTRY
1	Singapore
5	US
8	UK
20	Germany
30	France
36	South Africa
68	Kuwait
88	Italy
92	China
121	Russia Federation
130	Indonesia
133	Nigeria
184	Chad

### Sub-Saharan African country ranking<sup>2)</sup>

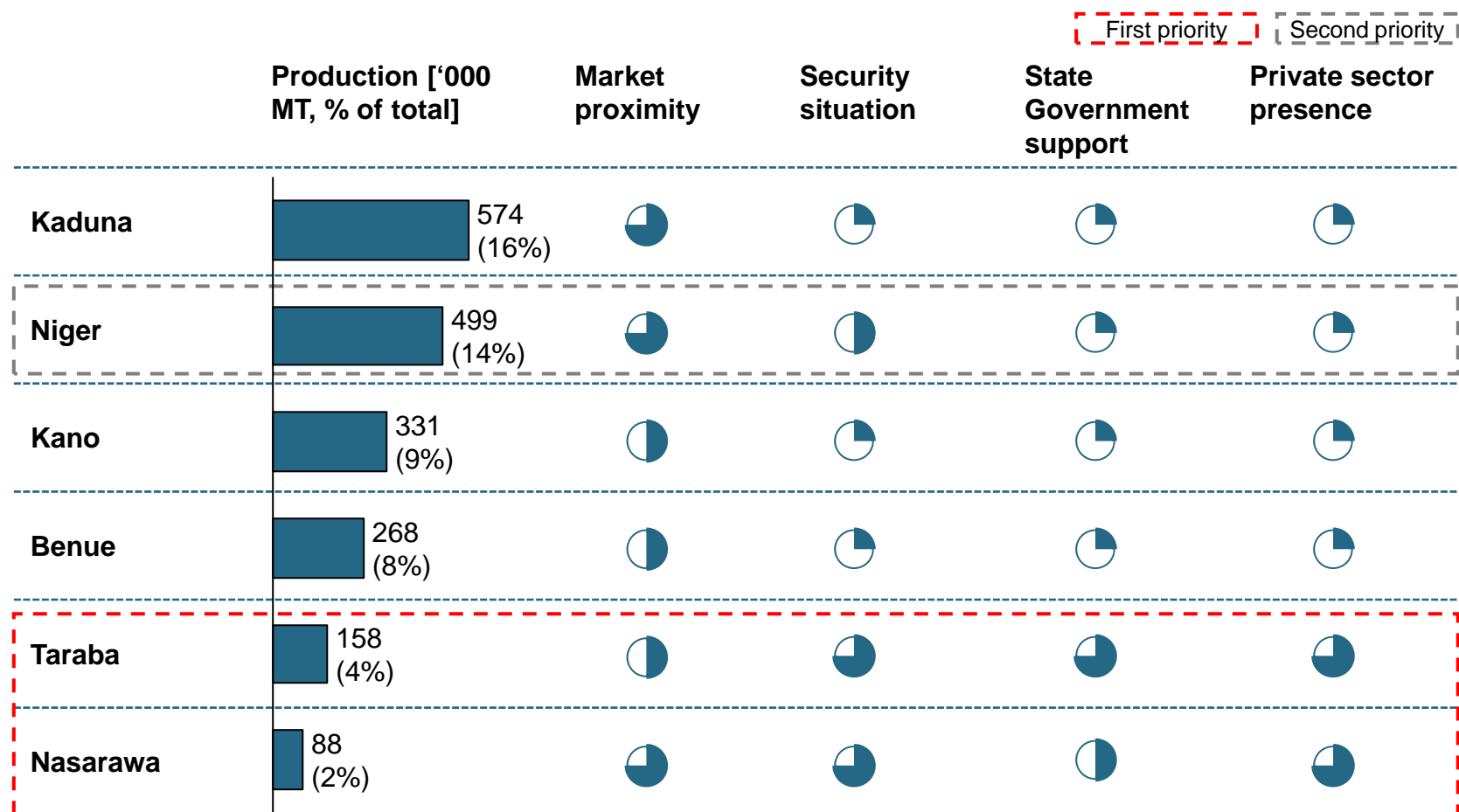
RANK	COUNTRY
1	Mauritius
5	Ghana
7	Zambia
10	Ethiopia
12	Uganda
14	Tanzania
15	Nigeria
22	Mali
24	Burkina Faso
26	Senegal
34	Côte d'Ivoire
38	Niger
46	Chad

1) Ranked out of 184 countries; 2) Ranked out of 46 countries

Source: World Bank

## **C. Potential partners in Nasarawa, Taraba and Niger States**

## In Nigeria choice of focus location is driven by security situation, local government support and availability of partners

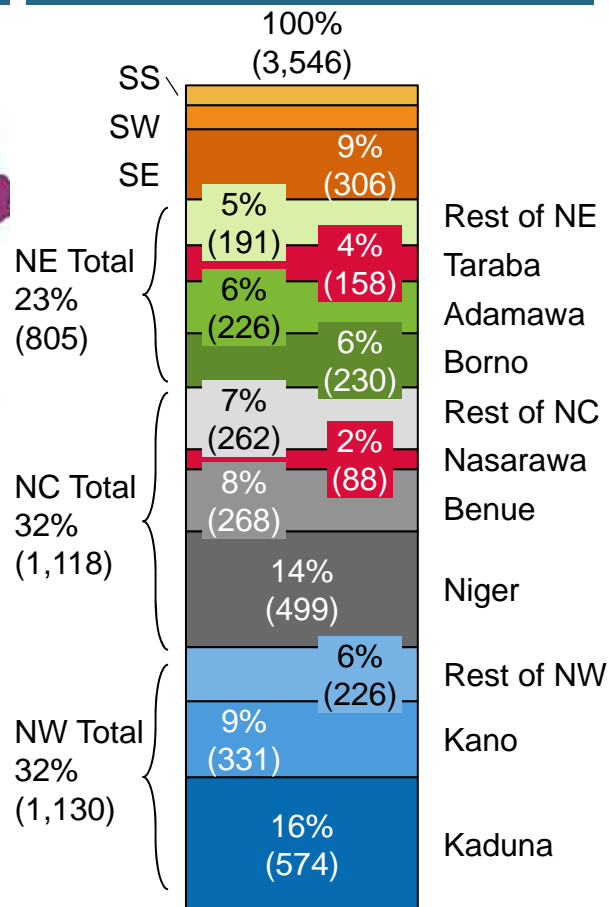


Therefore, Nasarawa and Taraba states have higher potential as partner regions to work in despite their smaller share of total rice production today

Nigeria



Regional paddy production, 2010 [%, ('000 MT)]

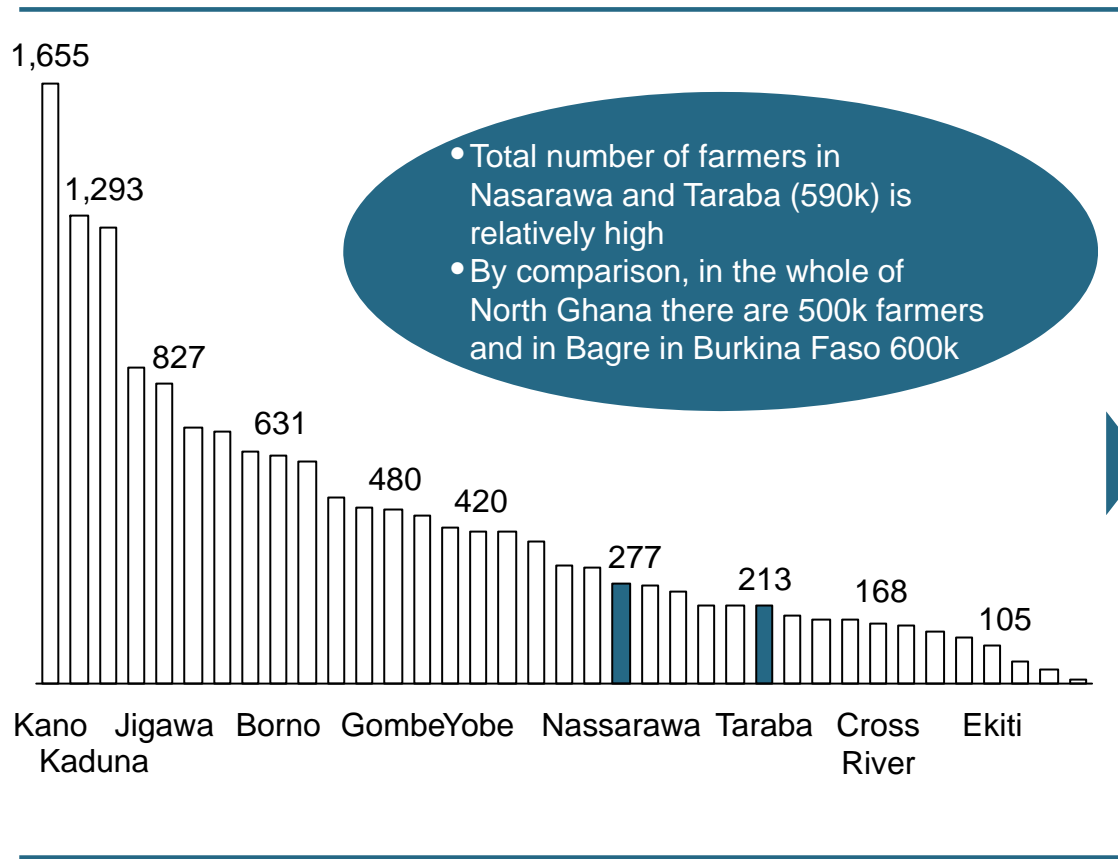


Government National and State policy: rice industry

- GoN is focusing on and investing in agricultural transformation as Nigeria is losing billions in unfulfilled export potential and unnecessary food imports
- Rice is one of the five value chains that GoN will focus on, with the target of being self sufficient in rice in four years
- GoN wants to increase import levies on brown and finished rice
- Key steps are to rehabilitate target irrigation programs and to incentivize investors to invest in large nucleus farms (10k-20k Ha)
- Improved seeds will initially be imported but aim is to be self-sufficient in 2015; Nigeria has enough installed capacity to produce required volume of fertilizer
- State governments are very powerful in Nigeria; in Nasarawa and Taraba States the Governors are focusing on agricultural development and rice in particular

# There are almost 500k farmers in Nasarawa and Taraba States and many have experience in rice farming

Farmers in crop farming by state, 2006 ['000]



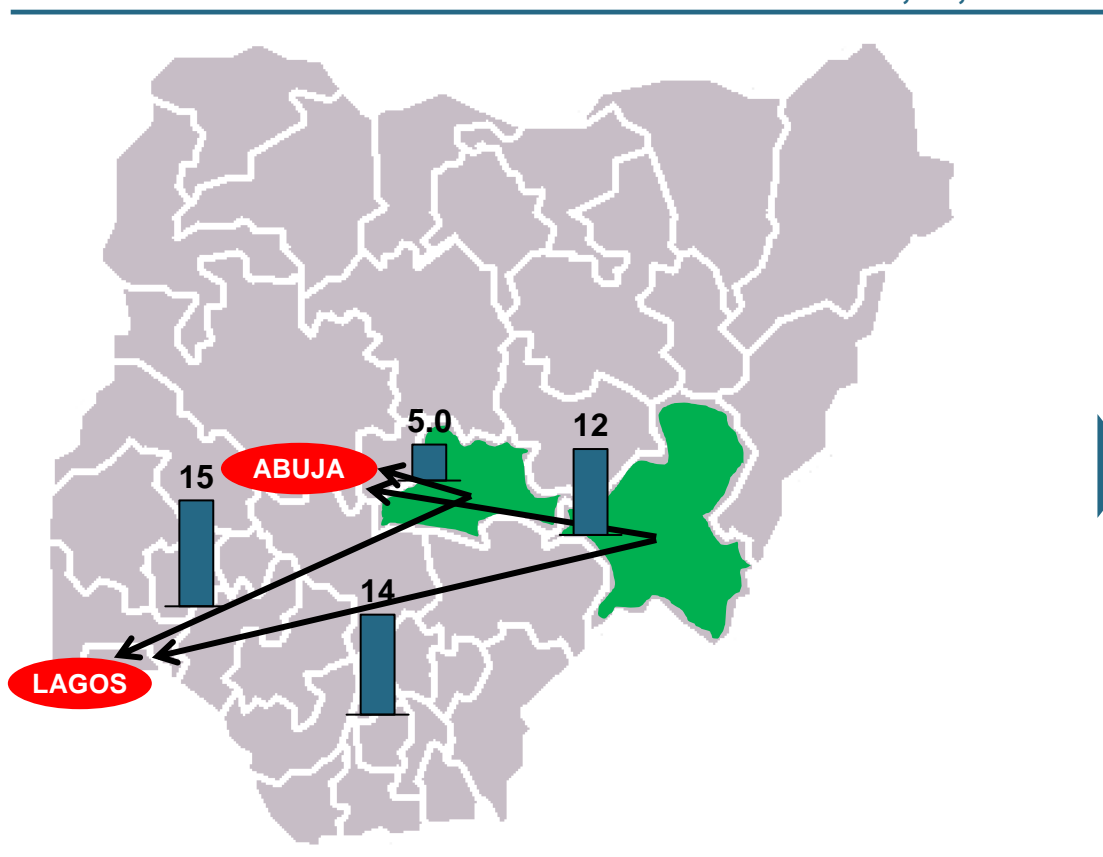
• Total number of farmers in Nasarawa and Taraba (590k) is relatively high  
 • By comparison, in the whole of North Ghana there are 500k farmers and in Bagre in Burkina Faso 600k

## Rice smallholders in Nasarawa and Taraba State

- Most rice farmers in these states have been growing rice for >5 years – some farmers have grown it all their lives
- Most farmers produce on rain-fed conditions, but many produce on a semi-commercial basis (selling ~75% of the rice), while some also have other jobs
- Smallholder produce rice on small plots (e.g., 2Ha for rainfed and 0.5 Ha for irrigated in Nasarawa)
- For farmers in these states rice is a major crop (e.g., over 25k farmers produce rice in Nasarawa), but it is not the only crop they grow
- There is a long history of the government trying to support rice production in these states so farmers have been encouraged to start growing rice in the past

## These states are relatively well positioned to serve major urban markets in Nigeria

Time from Nasarawa and Taraba States to markets, hr, 2012



### Transport from Nasarawa and Taraba States

- Nasarawa and Taraba States are both situated relatively close to one of the largest markets, Abuja
- However, poor road conditions make the journey relatively slow and long
- Nasarawa and Taraba States are further away from Lagos and transport costs will be high
- Comparatively, however, these states are situated closer to Abuja than most rice producing states in the North of Nigeria
- These transport costs should therefore be factored into the price

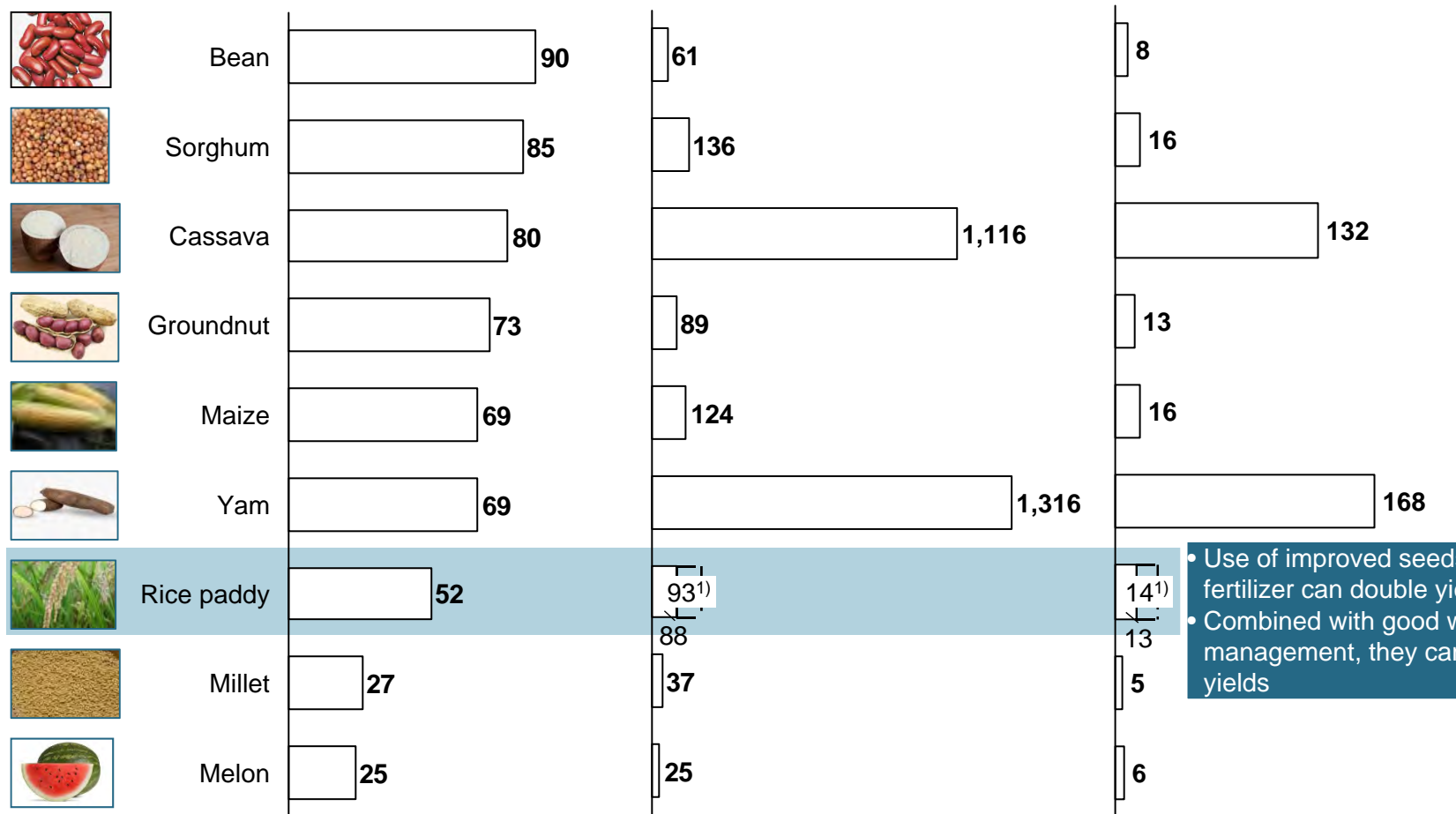
# Rice is a relatively minor crop in Nasarawa State – however there is improvement potential since yields are currently low

## Major crops in Nasarawa State

Cropping area, 2006 ['000 Ha]

Production, 2006 ['000 MT]

Value, 2006 [USD m]



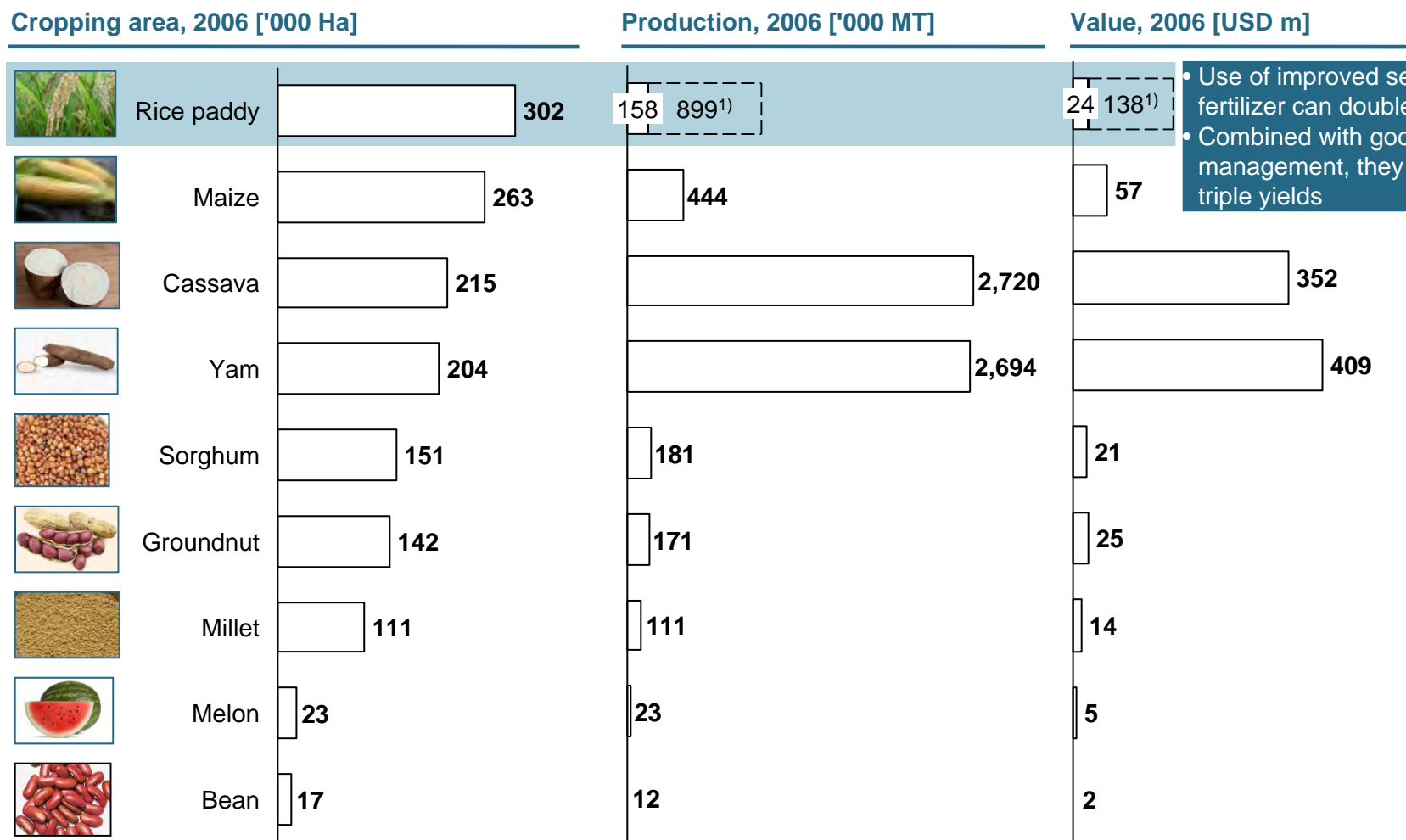
- Use of improved seeds and fertilizer can double yields
- Combined with good water management, they can triple yields

1) Assumes average yield of 3.5 MT / Ha vs. 1.7 MT / Ha today  
Source: National Bureau of Statistics of Nigeria



# Rice is a major crop in Taraba State, but low yields reduce the cash value it generates

## Major crops in Taraba State

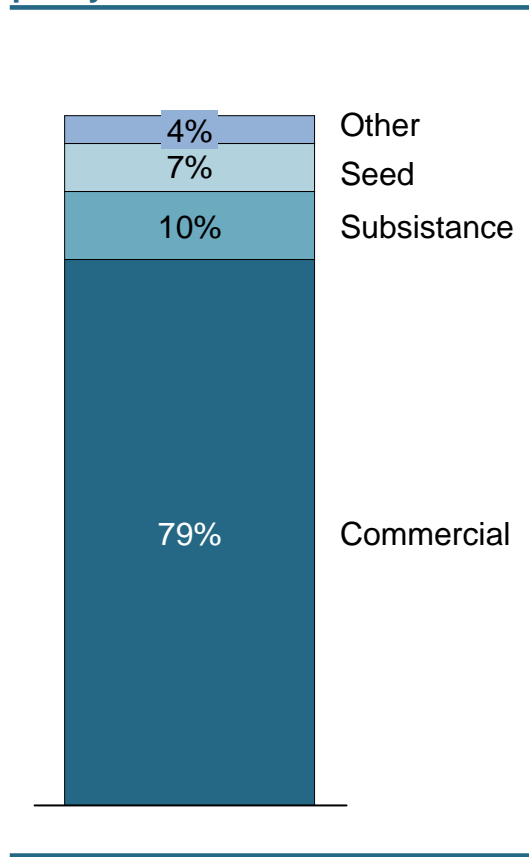


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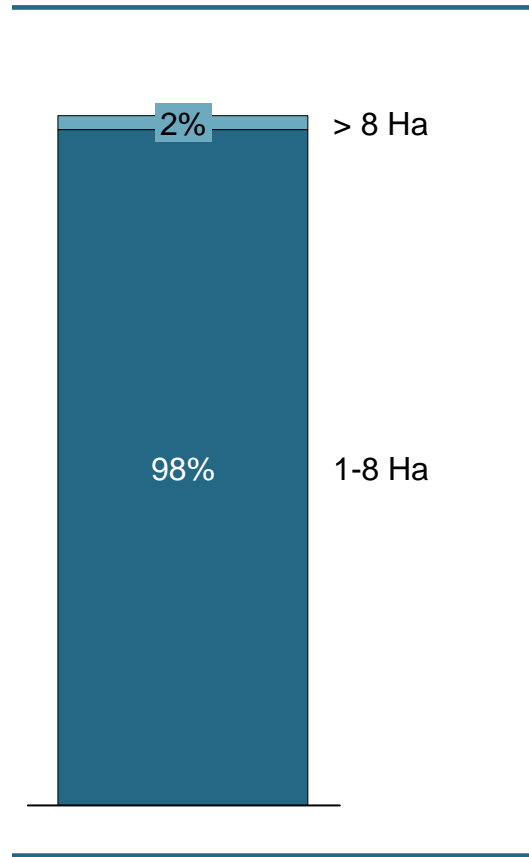
1) Assumes average yield of 3.5 MT / Ha vs. 0.5 MT / Ha today  
 Source: National Bureau of Statistics of Nigeria

# As almost all rice is produced by smallholders and almost 80% is produced for sale, rice is clearly an important source of income for smallholders

End purpose of produced rice paddy



Size of land holding for rice farmers



Based on qualitative assessment by GoN Rice Value Chain Transformation Team – similar percentages hold for rice farmers in Nasarawa, Taraba and Niger States

## Taraba State has a supportive governor - which is critical as the states have more power than the federal government

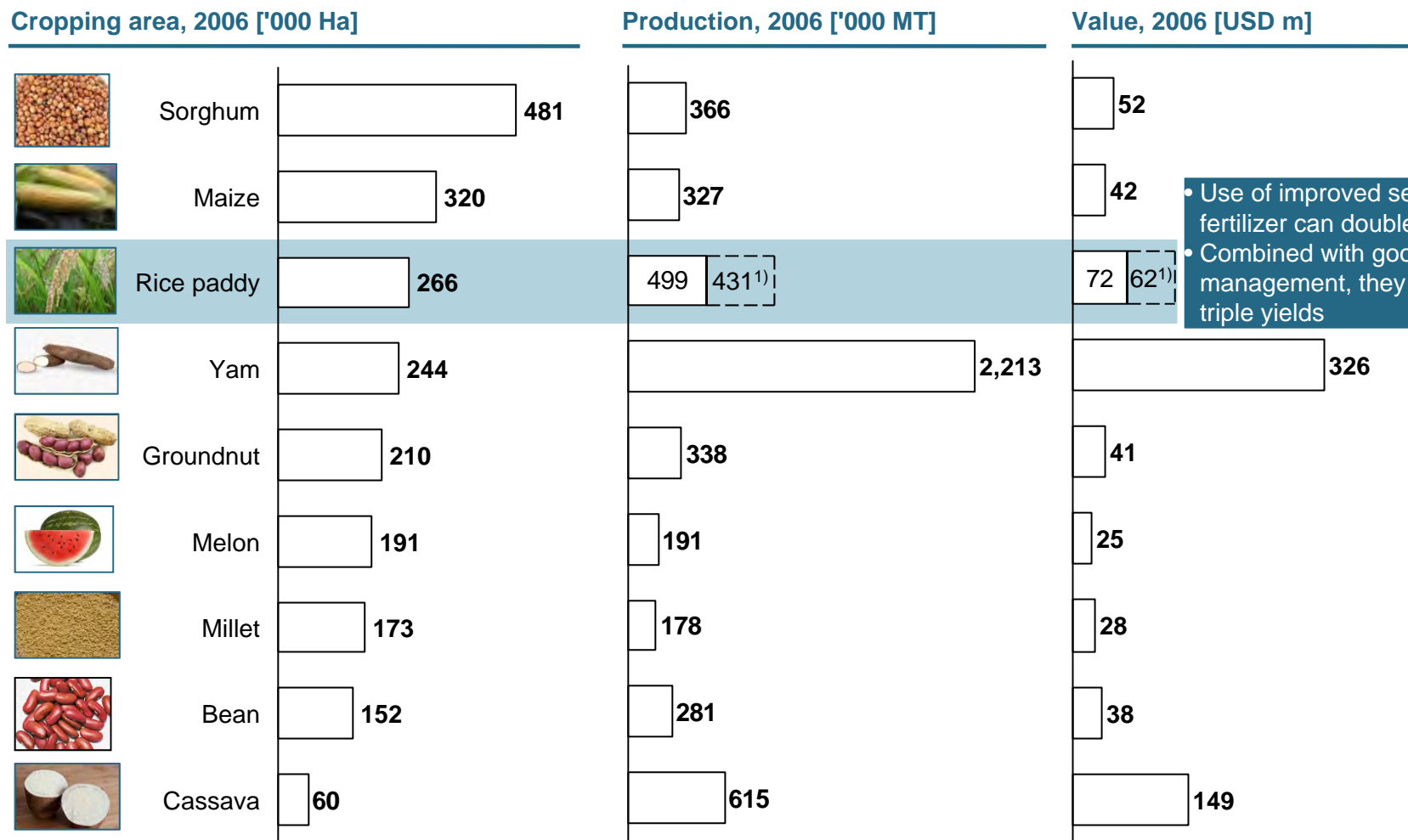
### State governance in Taraba

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- The Taraba State Governor, Danbaba Suntai, and the Federal Minister of Agriculture, Akin Adesina, approached Dominion proactively to persuade them to invest in Taraba State; they even paid for 50 farmers to learn from Dominion practices in Kenya
- The Governor is active in rolling out a fertilizer voucher program through IFDC
- The governor of Taraba State is *“different from many others in Nigeria – he feels it is his moral obligation to improve the lives of his poor constituents”*
- *“Taraba State is half Muslim, half Christian, but there have been no clashes so far, the governor realizes economic development is needed to keep it this way”*
- *“The economic development will need to come from agriculture as there is no oil in his State and he is very much aligned to the Minister of Agriculture of Nigeria around this”*

# In the long term, donors should also consider working in Niger state since rice is an important crop for farmers...

## Major crops in Niger State

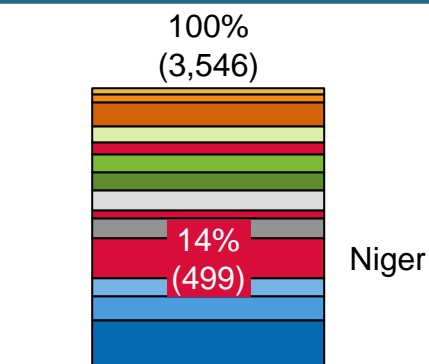


- Use of improved seeds and fertilizer can double yields
- Combined with good water management, they can triple yields

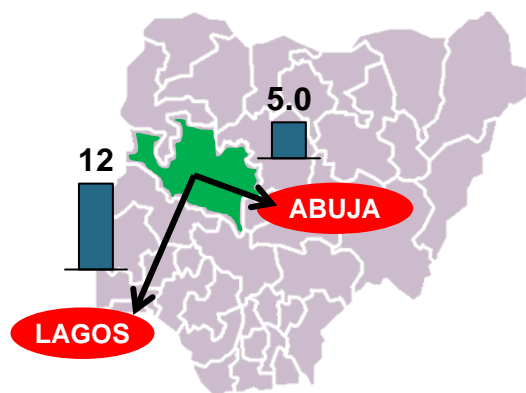
1) Assumes average yield of 3.5 MT / Ha vs. 1.9 MT / Ha today  
 Source: National Bureau of Statistics of Nigeria

... and Niger State is a large rice producer that is well positioned to supply large markets – however there are currently no potential private partners

Regional paddy production, 2010 [%, '000 MT]









Time from Niger State to markets, hr, 2012



### Private investors in Niger State

- Niger State is a very important rice producing state in Nigeria
- However at the moment support for the rice industry from Niger State Government is minimal and unpredictable
- This severely hampers the doing business climate in the state
- As a result, there are currently no private investors that are working in, or interested in working in, Niger State

## In Taraba and Nasarawa State there are a number of potential partners that a donor should consider working with – in the long term there could also be partners in Niger State

	Company	Industry	Ownership	Fit with smallholder goal	Key strengths	Attractive-ness
Nasarawa and Taraba	<b>Notore</b>	Seed production	100% private owned	Scale up seed production through smallholder seed production	<ul style="list-style-type: none"> <li>• Ambitious Nigerian company that aims to transform agriculture in Nigeria</li> </ul>	
	<b>Stallion</b>	Production and Processing	100% private owned	Need to work with smallholders to get paddy for their processing plant	<ul style="list-style-type: none"> <li>• Experienced field staff in rice production and outgrower schemes</li> <li>• Milling capacity available</li> <li>• Long term presence in Nigeria</li> </ul>	
	<b>OLAM</b>	Production and Processing	100% private owned	Want to work with smallholders for political goodwill	<ul style="list-style-type: none"> <li>• Experience with 10,000 farmers rice outgrower scheme in Benue State</li> <li>• Although that scheme failed there are many lessons learned for OLAM</li> <li>• Long term presence in Nigeria</li> </ul>	
	<b>Dominion</b>	Production and Processing	100% private owned	Want to work with smallholders based on social commitment	<ul style="list-style-type: none"> <li>• Experience with rice contract farming in Kenya</li> <li>• Experienced agricultural management team</li> </ul>	
Niger	<b>Dadtco</b>	Processing	100% private owned	Plan to develop small scale mobile mill specifically for smallholders	<ul style="list-style-type: none"> <li>• The company already developed successful mobile milling project for Cassava in Taraba State</li> </ul>	
	<b>100 Chinese mills</b>	Processing	State owned	Need to source paddy to fill up capacity of new mills	<ul style="list-style-type: none"> <li>• Mills will be run by Chinese managers initially to make it a turnkey project</li> </ul>	

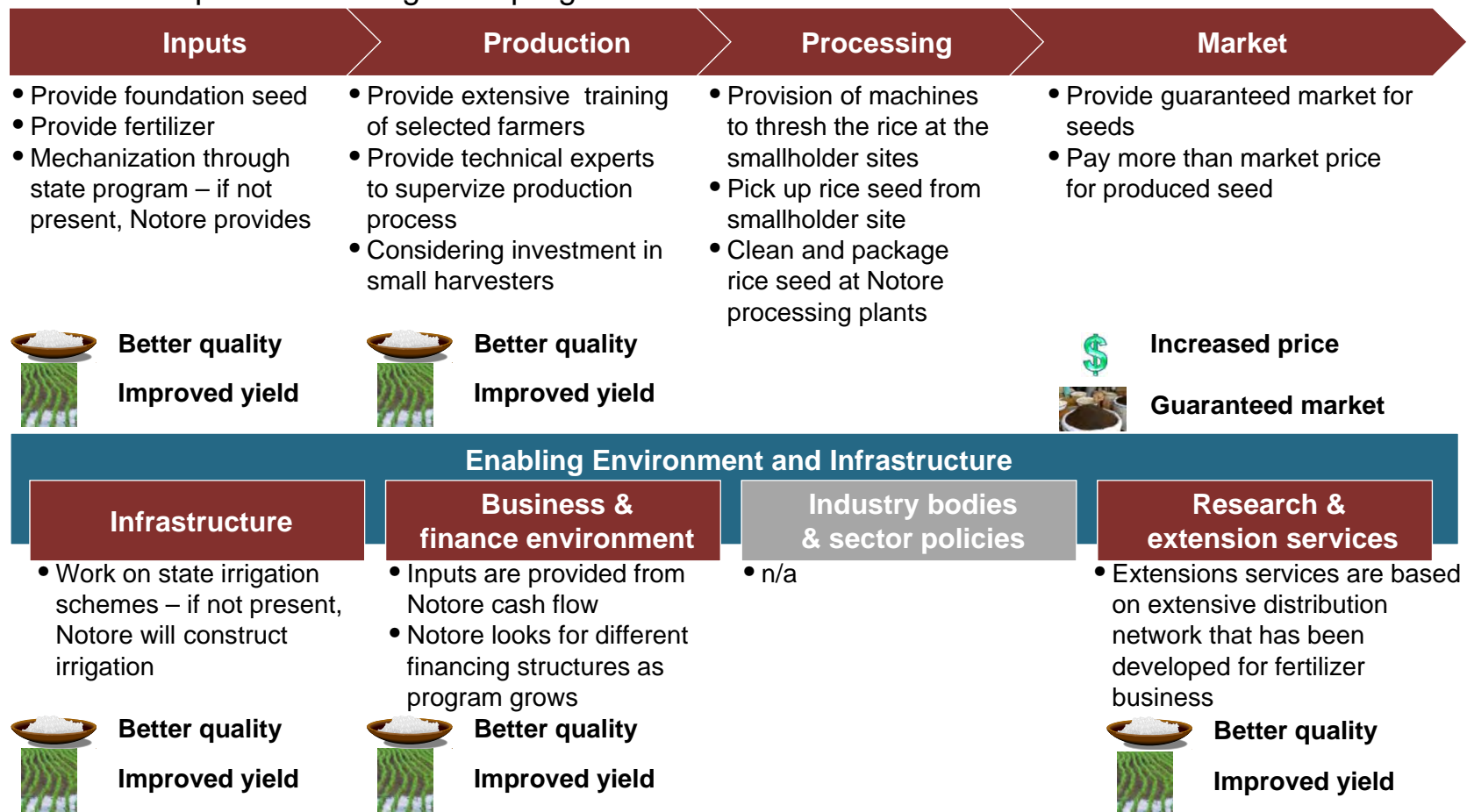
 Strong
  Medium
  Low

**C. Potential partners in Nasarawa, Taraba and Niger States  
- Notore**

## Notore works exclusively with smallholder outgrowers to set up their seed production business

**INDICATIVE**

Notore seed production outgrower program in Kaduna and Kano States



**Notore aims to roll out this program to Nasarawa and Taraba States as well**

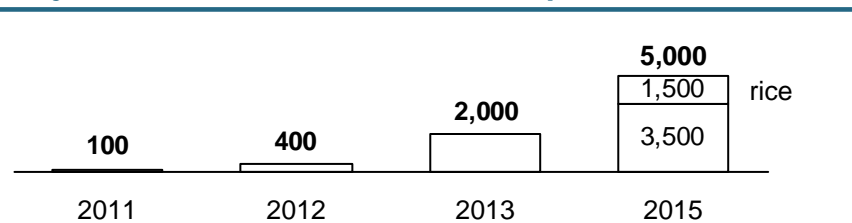


# Notore

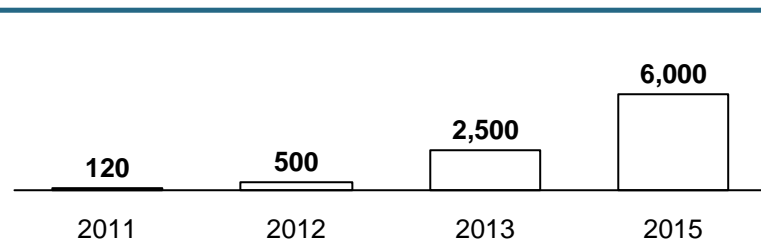
Notore is currently working with ~400 farmers in Kaduna and Kano, they aim to grow to 5,000 in Nasarawa and Taraba States in five years

INDICATIVE

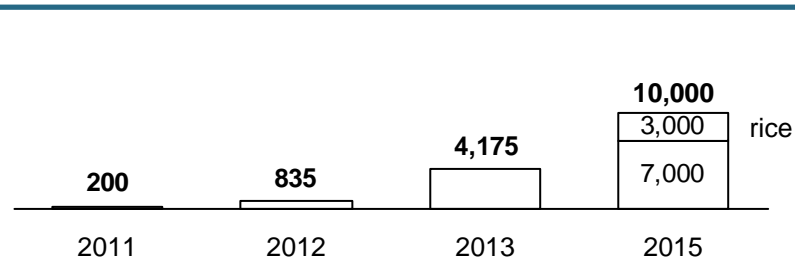
## Projected # of smallholders in seed production



## Projected acreage for seed production [Ha]



## Projected seed production ['000 MT]



## Plans for smallholder program

- Notore plans to grow their seed production to 10,000MT in 2015, of which **3,000MT is rice seed produced by 1,500 rice smallholders<sup>1)</sup>**
- They are currently working in Kaduna and Kano but want to expand into other states and Nasarawa and Taraba States are interesting to them
- Notore already has a relationship with ~3,500 farmers in Nasarawa and ~6,500 in Taraba States through their fertilizer distribution program
- Notore is the supplying party of the Taraba State fertilizer voucher program that is implemented by IFDC Nigeria

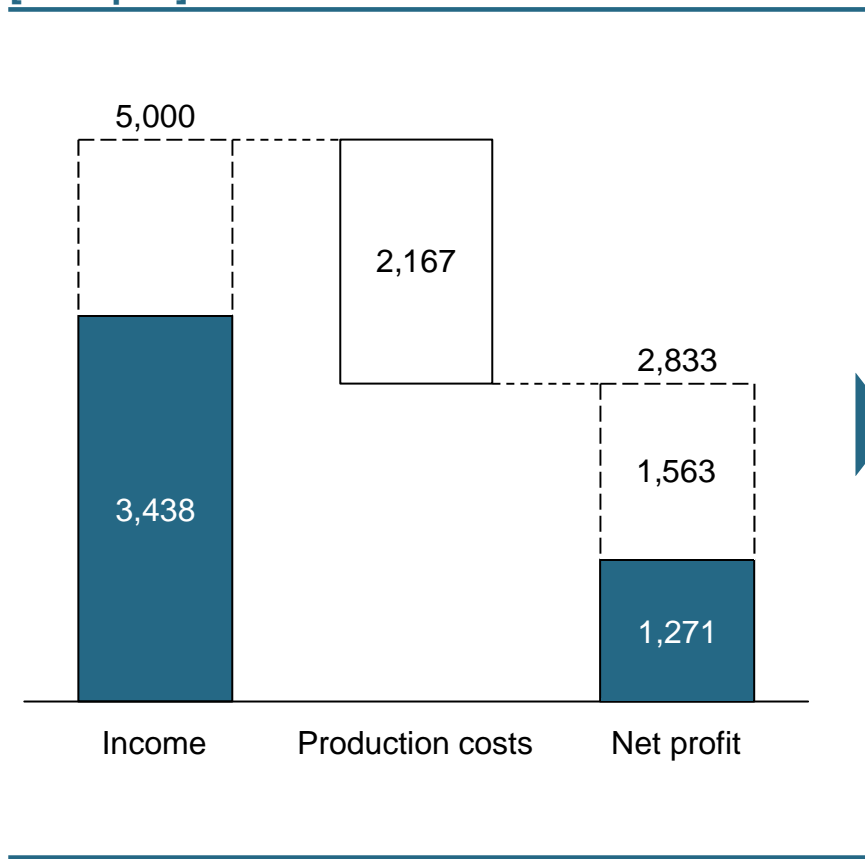
1) Notore seed is also producing maize seed and is planning to go into sorghum and soy production too

Source: Interviews with Notore

Notore expects farmer incomes to be USD 1,271 – USD 2,833 p.a., 20-50 times the current income

INDICATIVE

Expected income for farmers in seed production [USD p.a.]



## Income improvement for smallholder farmers

- Notore expects farmers in the seed production program to achieve incomes of USD 1,271 - USD 2,833 p.a. (depending on the yields they achieve)
- **It is estimated that this is 20-50 times the current farmer income**
- The income improvement is mainly driven by using the right seeds, agronomic practices and adhering to the right agricultural calendar

## Key assumptions for irrigated farmer income

INDICATIVE

### Assumptions for irrigated smallholder income in Notore seed production program

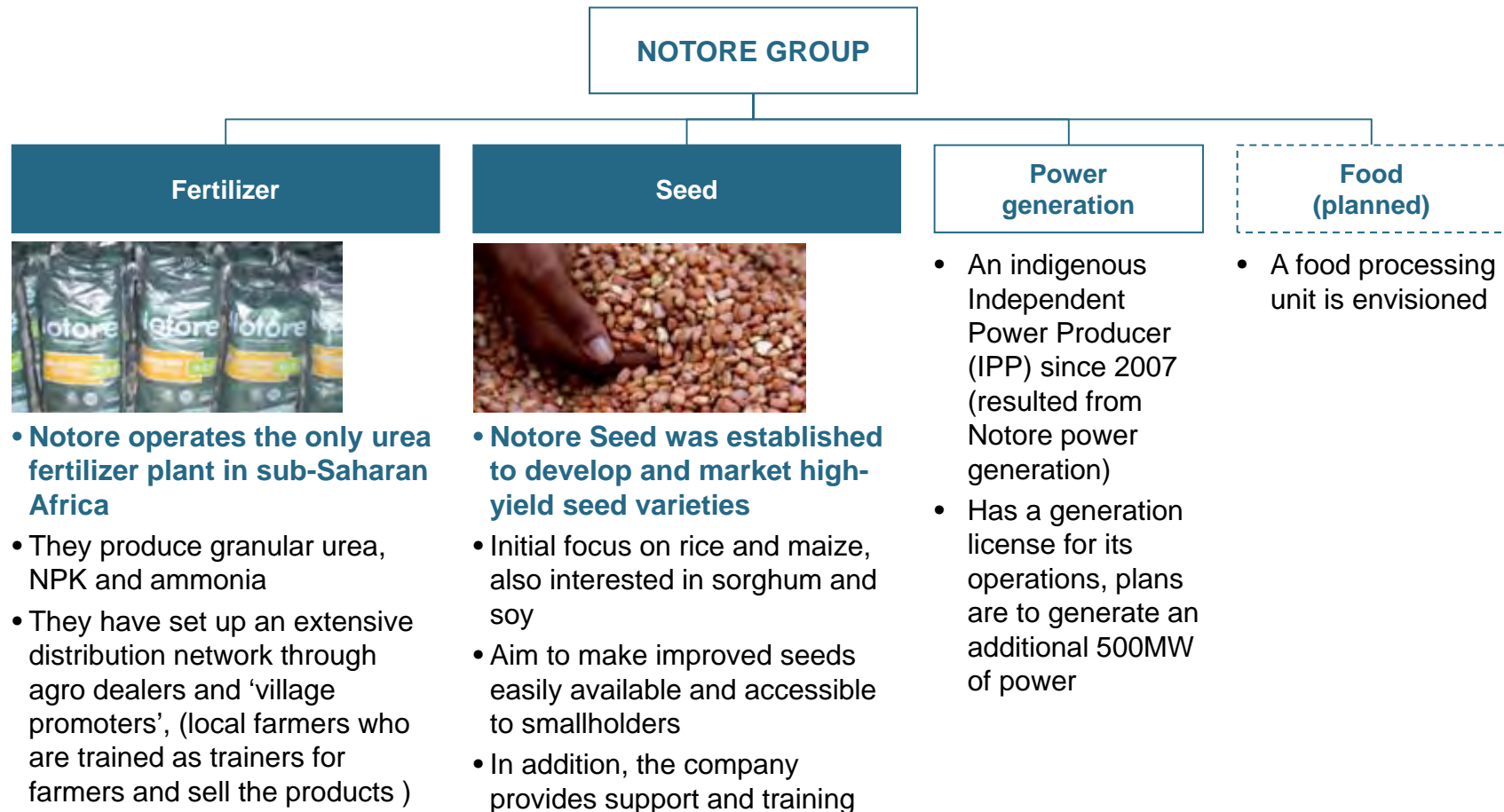
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<b>Area planted [Ha]</b>	<b>1</b>
<b>Harvests p.a.</b>	<b>2</b>
<b>Average paddy yield [MT/Ha]</b>	<b>2.75-4</b>
<b>Notore price for paddy [USD/MT]</b>	<b>625</b>
<b>Smallholder income</b>	
• Total MT of paddy [MT]	5.5-8
• Total revenue for paddy [USD]	3,438 to 5,000
• Total production cost for paddy [USD]	2,167
• <i>Land preparation, seed, fertilizer, weed control, water control, harvesting, threshing, bagging and transport</i>	
<b>Net income for paddy [USD]</b>	<b>1,271 to 2,833</b>

## Notore's vision is to champion the Green Revolution in West Africa through inputs and knowledge

INDICATIVE

Notore Group ongoing and planned operations in Nigeria, 2012



## They are well positioned to succeed, with an experienced management team and sufficient funding

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### Notore CEO and Seed Managing director



- **Onajite Okoloko is the Group Chief Executive Officer and Group Managing Director of Notore Chemical Industries Limited**

- He assembled a team of investors to acquire the assets of the former NAFCON fertilizer plant and is a core investor in the consortium
- He has a Bachelor's Degree in Economics from University of Benin, Nigeria (1986) and is also an alumnus of the Harvard Business School



- **Ivana Osagie is the managing director of Notore Seeds since 2009**

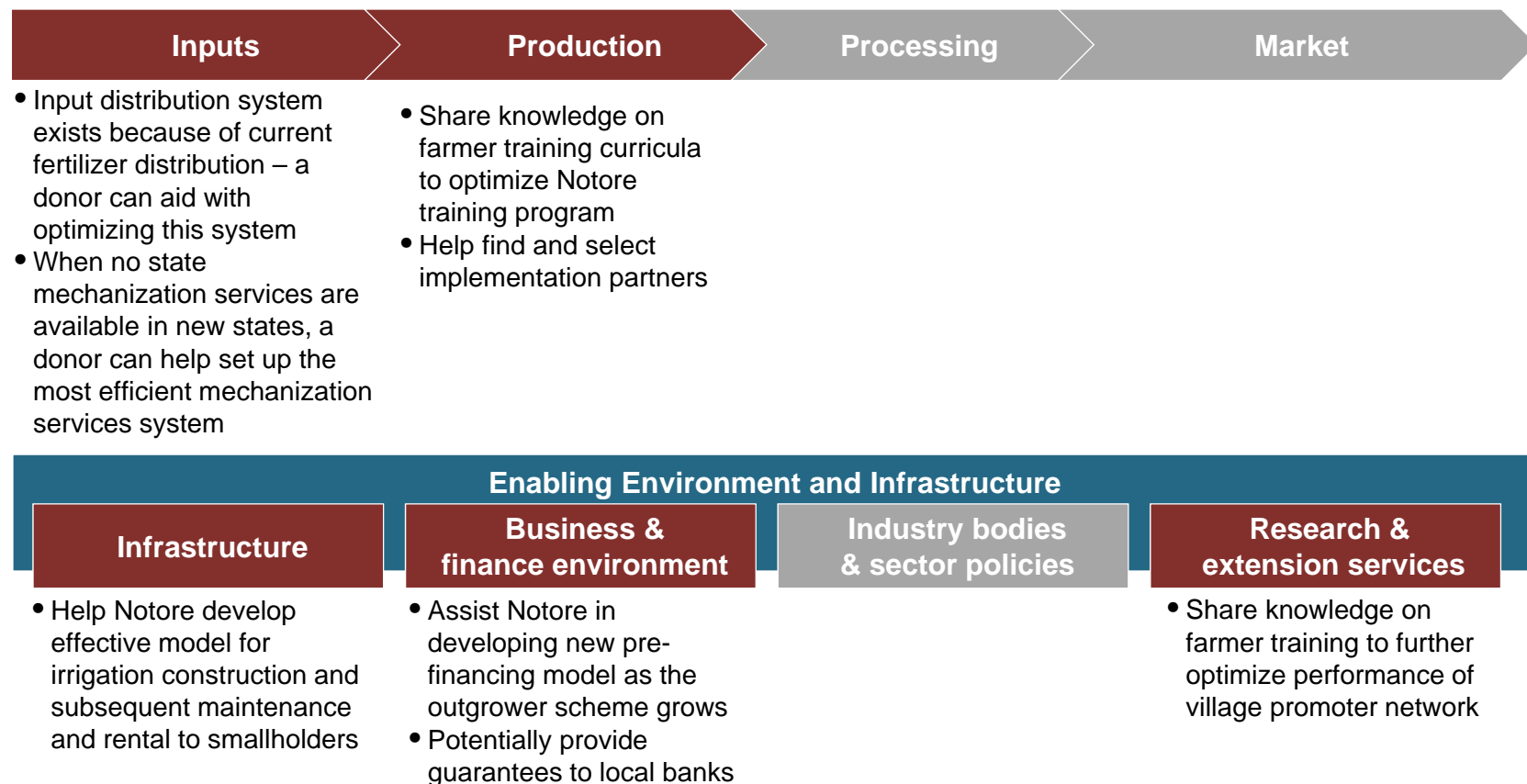
- Ivana has close to 20 years consulting and investment banking experience.
- She has experience in the areas of deal structuring, business development/start ups and managing complex enterprise projects.
- Ivana holds an M.Sc. in Information Technology from the University of the West of England and an MBA from the University of Liverpool.

### Notore financing

- Notore is currently financed by 12 private investors, a consortium that includes
  - Emerging Market Partners, a major private equity firm out of Washington, U.S.A
  - Egyptian Fertiliser Company, now owned by the Orascom Group
- Furthermore it has a syndicated loan of USD 222 m from 9 Nigerian financial institutions
- Notore plans to become publicly listed in 2013

# Notore

## A donor can support Notore with scaling up their existing seed outgrower program to Nasarawa and Taraba States



**Follow-ups: Outlining the current Notore seed outgrower scheme and better understanding commitment going to Nasarawa / Taraba**

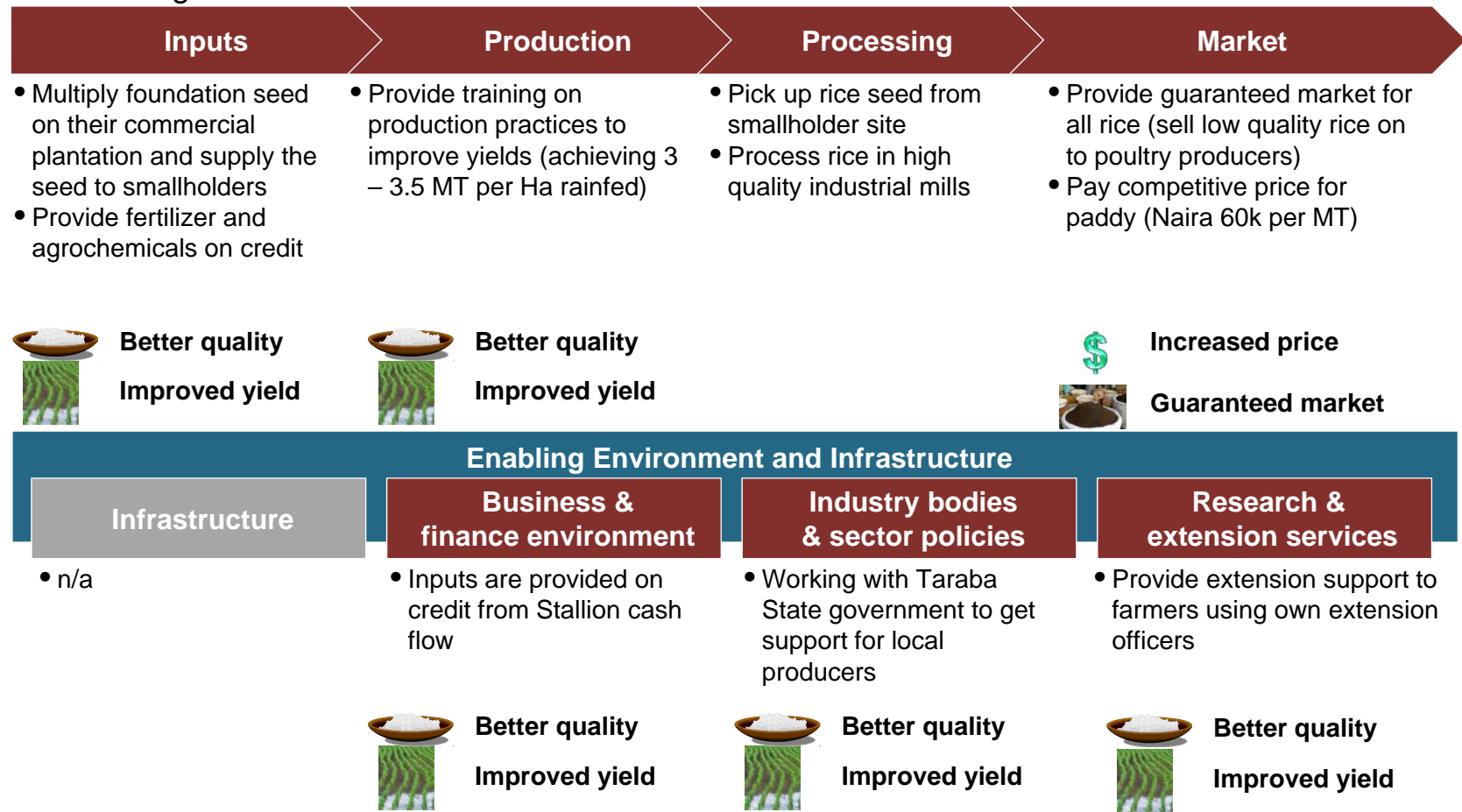
**C. Potential partners in Nasarawa, Taraba and Niger States  
- STALLION**



# Stallion is currently working with outgrowers to secure paddy for their processing plant

**INDICATIVE**

## Stallion outgrower scheme



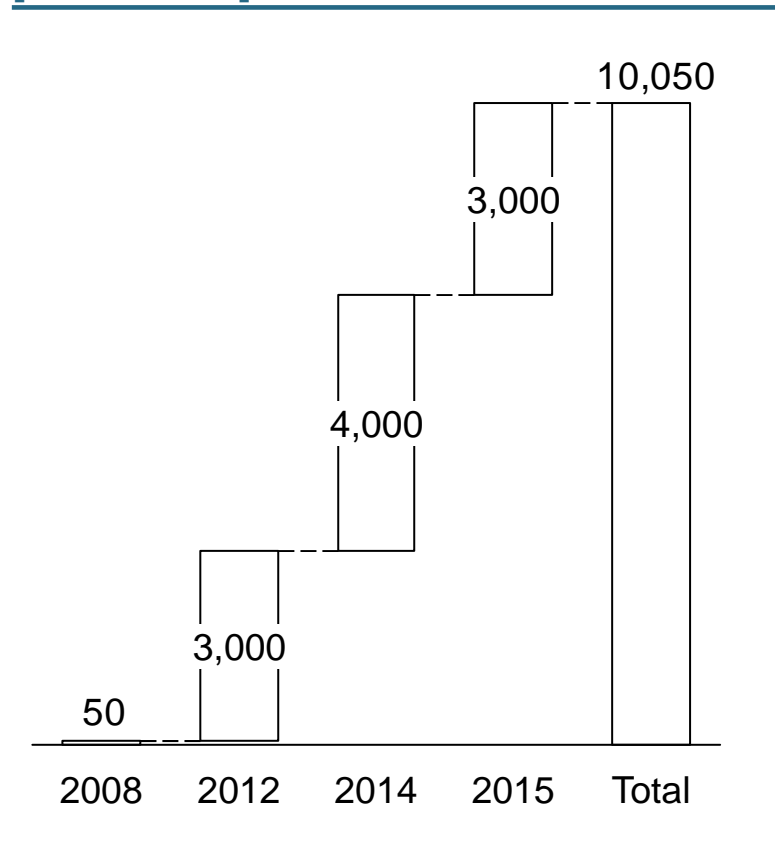




## Stallion already works with 3,000 famers throughout different states in Nigeria and wants to grow to 10,000 farmers

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### Projected development of outgrower scheme [# of farmers]

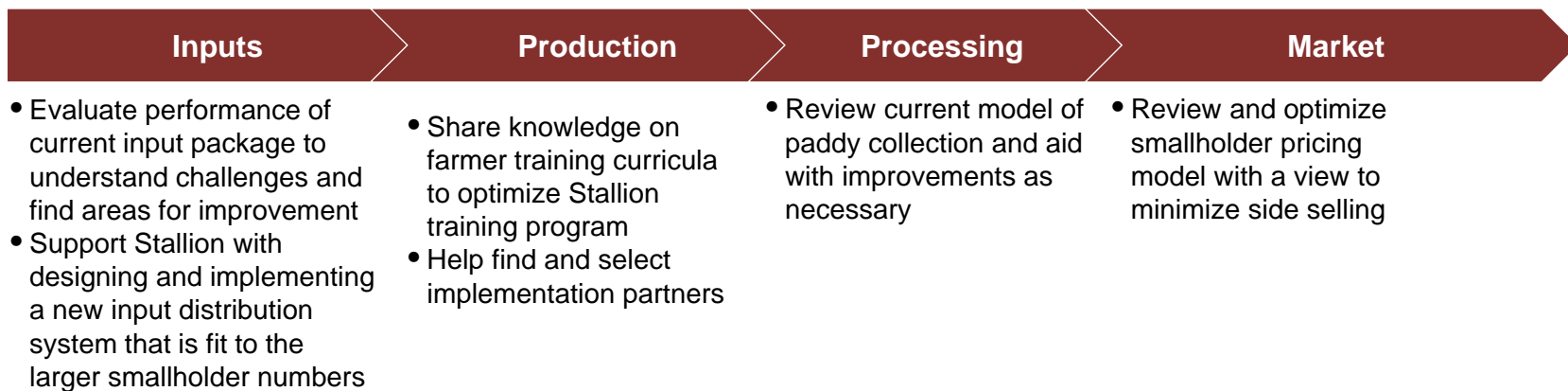


### Plans for outgrower scheme

- Stallion has a processing plant in Kano with 100,000 MT annual capacity
- Stallion works with outgrowers in several states to source sufficient paddy for their mill
- They currently have 3,000 farmers in their network and have 300 staff working in the field with the farmers
- They are facing problems with side selling – they need to offer a very high price to keep their farmers in the network
- They are also facing problems with transport – can take up to one hour to travel 2-3 km in some remote areas
- They aim to grow to 10,000 farmers over the next 3 years
- They want to focus on Taraba States because they feel farmers there are have a good attitude and are reliable



## A donor can support Stallion with scaling up their existing outgrower program to source paddy in Nasarawa and Taraba States



**Follow-up: Determine current process and effectiveness of Stallion's outgrower model**

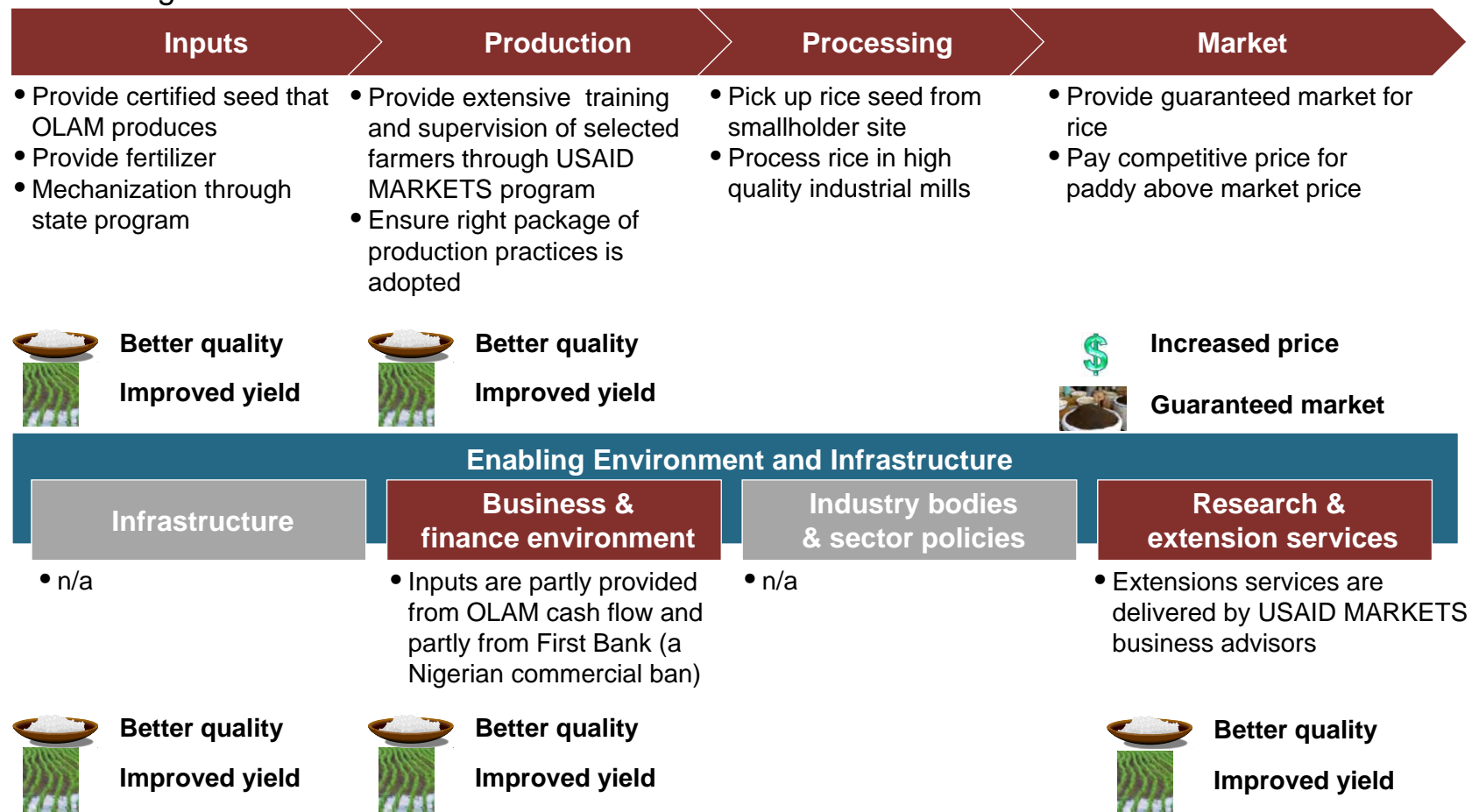
**C. Potential partners in Nasarawa, Taraba and Niger States  
- OLAM**



# OLAM stopped its contract growing scheme with 10,000 farmers in Benue and Kwara but is proposing to set up an improved program in Nasarawa

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OLAM outgrower scheme in Benue and Kwara States



**OLAM aims improve this scheme based on past learning and roll it out in Nasarawa State**

Source: Interview with OLAM



## Although the original scheme was stopped due to competition, low repayment and side selling, it was highly regarded and produced good quality rice

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### Reasons for stopping OLAM contract farming scheme

- OLAM launched the scheme in 2005 to source paddy for their new mills (built primarily to process imported brown rice and to show good will to Nigerian government for giving them a the import license)
- There were three main reasons for stopping the scheme in 2010:
  - Cheap smuggled imports from Benin and Togo (which have low import tariffs) undercut OLAM's rice price
  - High levels of side selling meant that OLAM could not achieve a high enough utilization in their mills
  - Repayment rates as low as 50% in 2009, leading to large financial losses for OLAM

### Success of the OLAM contract farming scheme

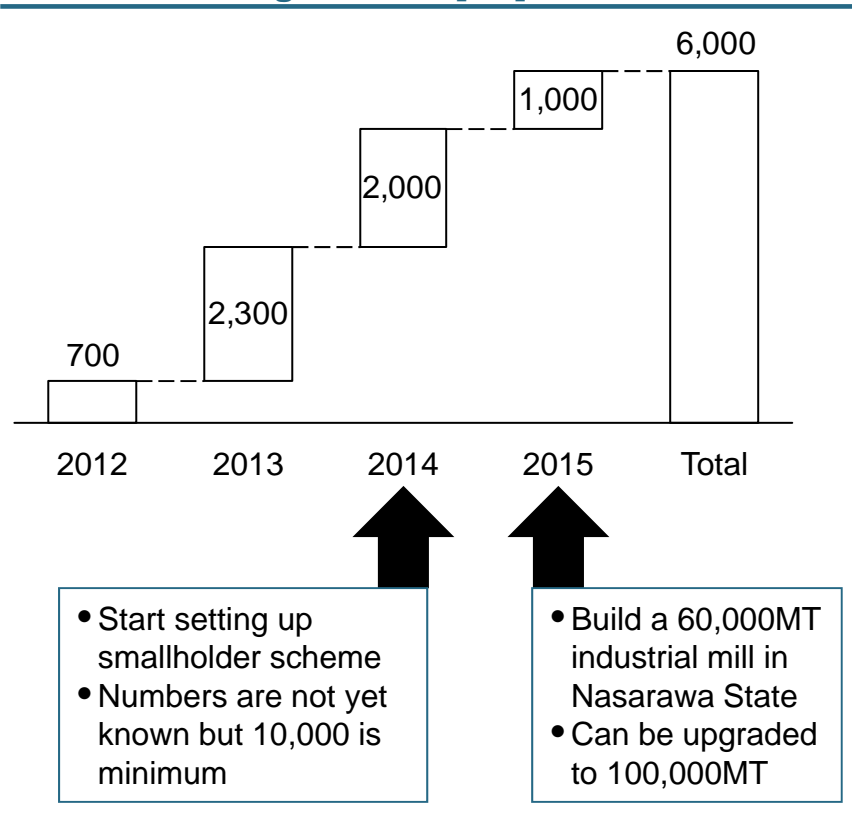
- The scheme grew rapidly to 10,000 farmers
- The quality of the paddy from the scheme, combined with high quality industrial mills delivered very high quality rice that could easily compete with imported rice
- The scheme has won a number of awards, including:
  - The 2011 Africa Business Award for Corporate Social Responsibility
  - The 2008 World Business and Development Awards (WBDA) (one of the ten winners)



## OLAM is developing a 6,000 Ha commercial rice farm in Nasarawa State and aims to involve smallholders from 2014

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### Projected development of commercial farm and contract farming scheme [Ha]



### Plans for contract farming scheme connected to commercial farm

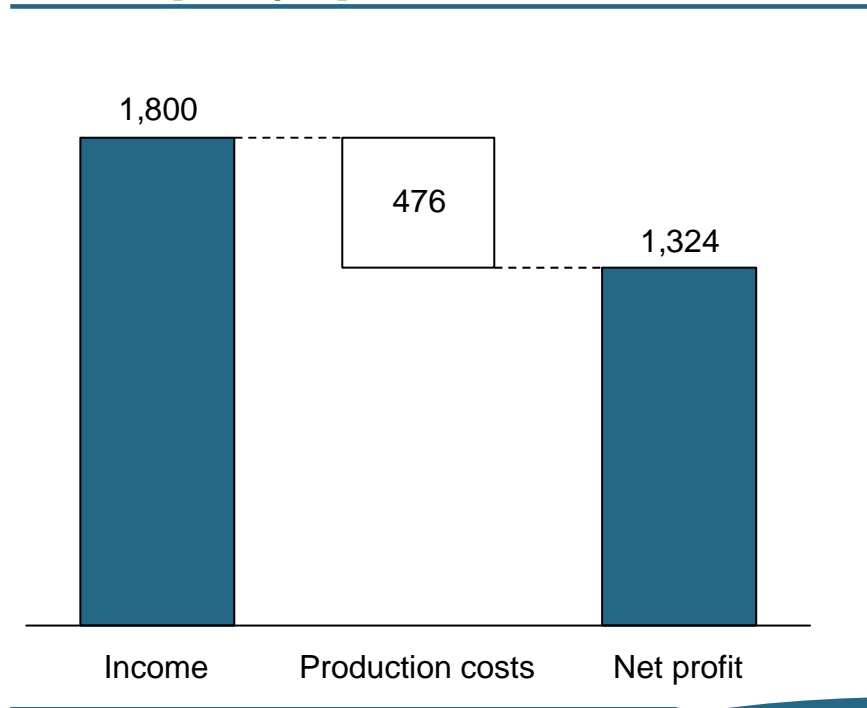
- OLAM has 9,400 Ha available land on an old Lebanese farm in Nasarawa State – they aim to develop 6,000 Ha irrigated land for rice with cashew/sugarcane rotation
- The farm will be fully mechanized with airplanes and combine harvesters
- They are developing new seeds that could have a 6 MT / Ha yield; the farm will break-even at 3 MT / Ha
- OLAM aims to develop a contract farming scheme (based on learning from the Benue scheme) from 2014
- Numbers of farmers are not known yet, but they are targeting a minimum of 10,000 farmers



## OLAM achieved a USD 1,324 p.a. income per farmer in the previous contract growing scheme – up to a threefold increase from previous incomes

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Income for farmers in previous contracting scheme, [USD p.a.]



Income improvement for smallholder farmers

- OLAM expects to achieve USD 1,324 income p.a. for farmers in the seed production program
- Some participants in the scheme were not farmers before - **it is estimated that this is a threefold increase from annual income that participants would achieve as a motor taxi driver**
- The income improvement is mainly driven by secure markets, high quality inputs, access to commercial finance and technical assistance to produce high quality rice

It is not certain yet that the same results can be achieved by the new contract growing scheme



## Key assumptions for irrigated farmer income

INDICATIVE

### Assumptions for irrigated smallholder income in OLAM Contract farming scheme

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Area planted [Ha]	2
Harvests p.a.	1
Average paddy yield [MT/Ha]	3.25
OLAM price for paddy [USD/MT]	277

#### Smallholder income

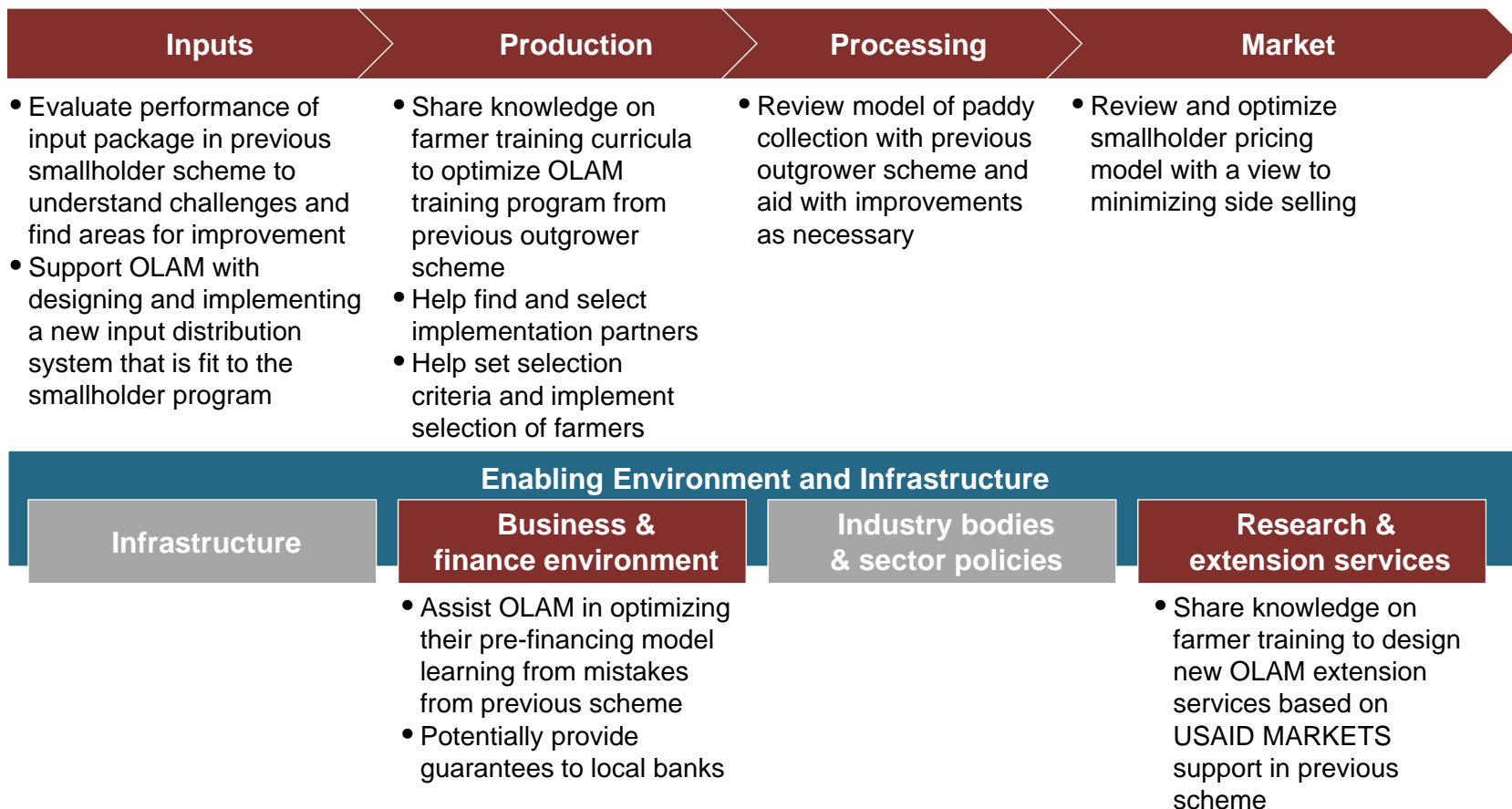
- Total MT of paddy [MT] 7.5
- Total revenue for paddy [USD] 1,800
- Total production cost for paddy [USD] 476

**Net income for paddy [USD] 1,324**





## A donor can support OLAM with setting up their new Nasarawa outgrower scheme from 2014, learning from the experience in Benue



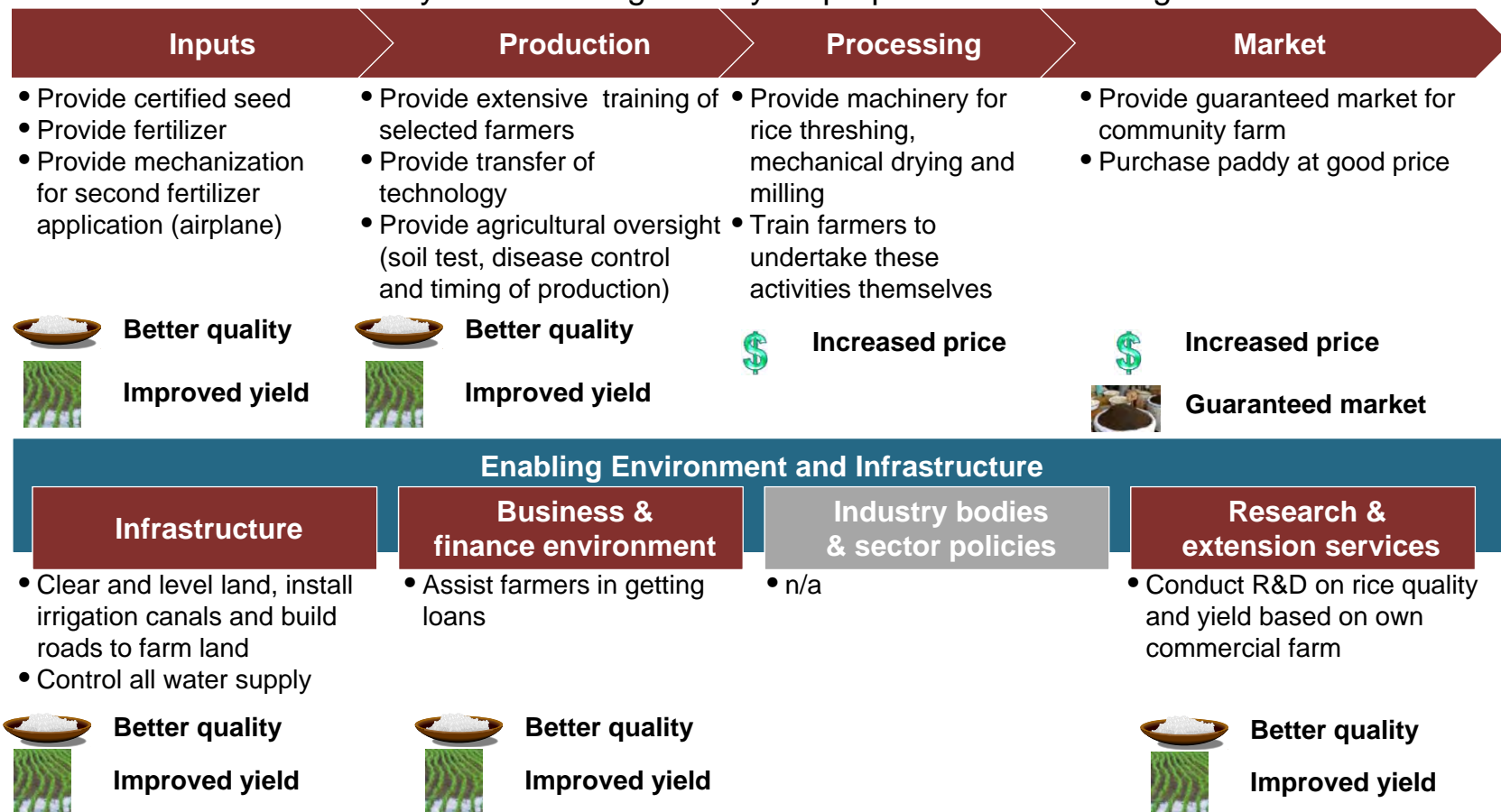
**C. Potential partners in Nasarawa, Taraba and Niger States  
- Dominion**



## Dominion Farms is planning a contract farming scheme in Taraba State based on their Kenyan Community Rice Farms

**INDICATIVE**

Dominion Farms Community Rice Farming in Kenya – proposed model for Nigeria

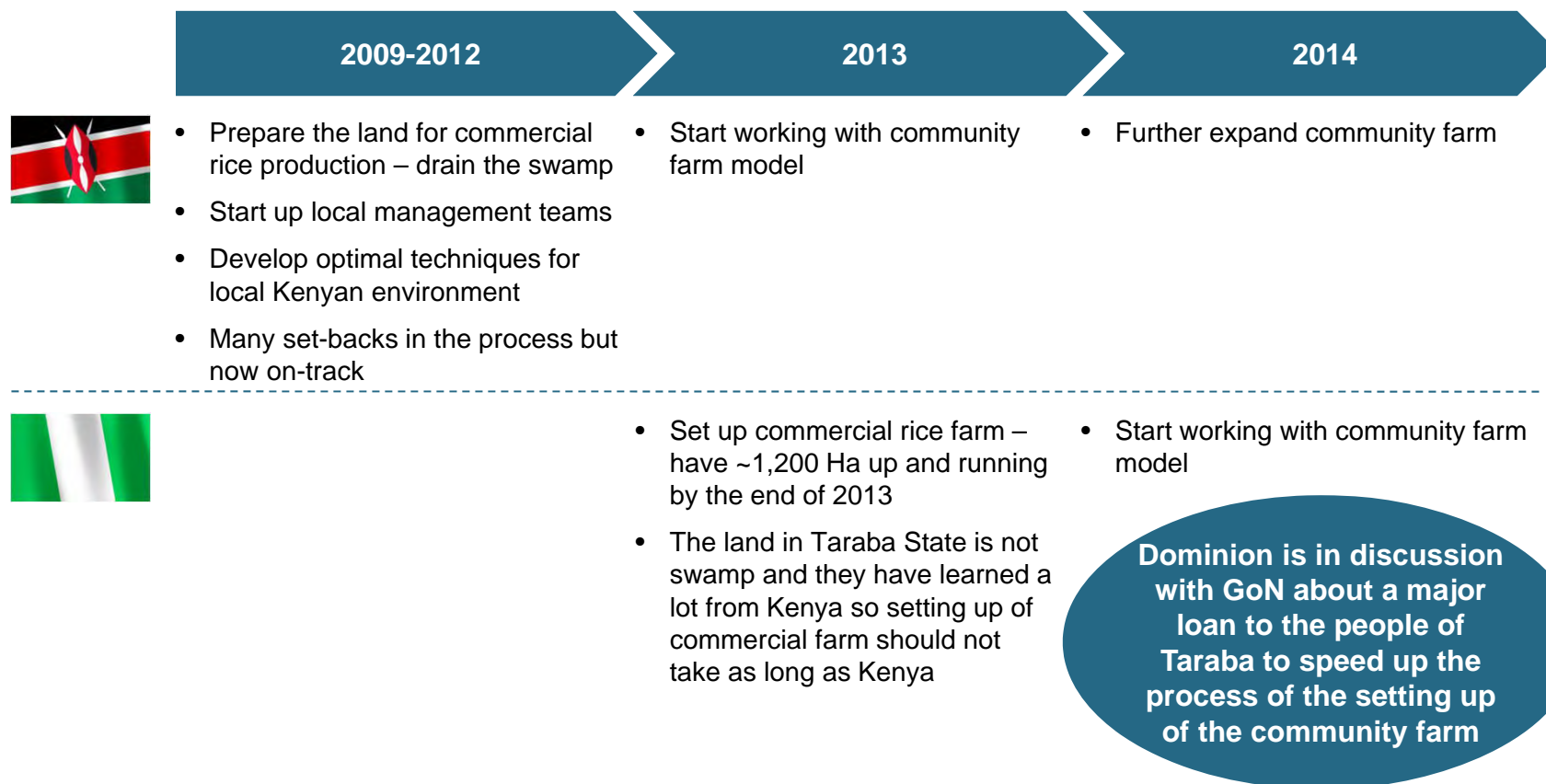


**Dominion model not rolled out in Taraba State Nigeria yet – commercial farm will be developed first in 2012 / 2013**



## Dominion Farms is currently operating a commercial farm and community farm in Kenya – they are planning to do the same over time in Taraba State

INDICATIVE





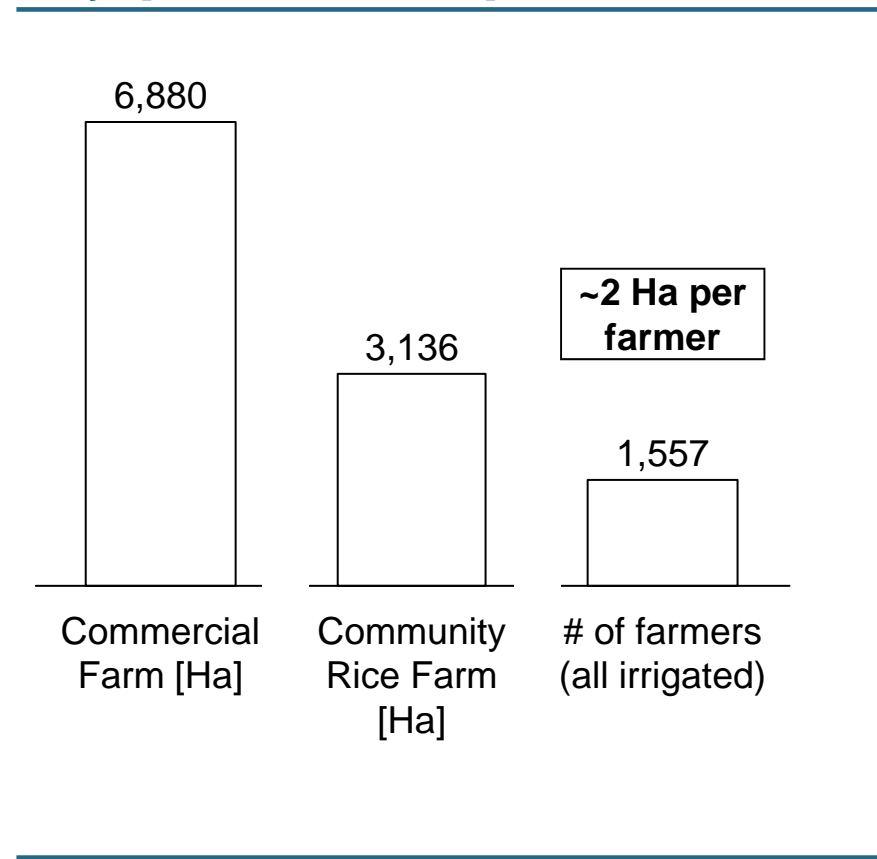
## The size of a potential community farm in Taraba depends on success of the pilot – in Kenya Dominion Farms is planning to work with ~1,500 farmers

INDICATIVE

### Community farm plans for Taraba State, Nigeria

- Dominion Farms will start commercial rice farming operations in Taraba State at the end of 2012; **set up of smallholder program will not start before 2014**
- **Total land available to Dominion Farms in Taraba State is 4 times the land available in Kenya [30,000 Ha];** it therefore has the potential to build a very large community farm
- However, it has not been decided by the stakeholders yet that there will be a community farm in 2014 and **the size of the community farm will depend on findings in the Nigerian pilot**

### Proposed farmer numbers in community farm in Kenya [Ha and # of famers] <sup>1)</sup>



1) Based on Dominion estimates of farmer numbers in year 6 of the program  
Source: Interviews with and data from Dominion



## Dominion Farms will manage the community farm with selected farmers as part of their commercial rice operation

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### Vision of Dominion Farms Community Farm

- Dominion Farms regards the Community Farm as a coordinated partnership between Dominion Farms and well-trained groups of locals to produce high quality products together
- The Community Rice Farming groups will work on a block farm in cooperation with, and under the direction of, Dominion Farms
- The only difference in production between the Community Farm and Dominion Farm is that cooperatives will replace their labour for otherwise mechanized operations
- Dominion's Community Rice Farming Program will rely heavily on Dominion's expertise and modern technology

### Dominion Farms Ltd. Nigeria

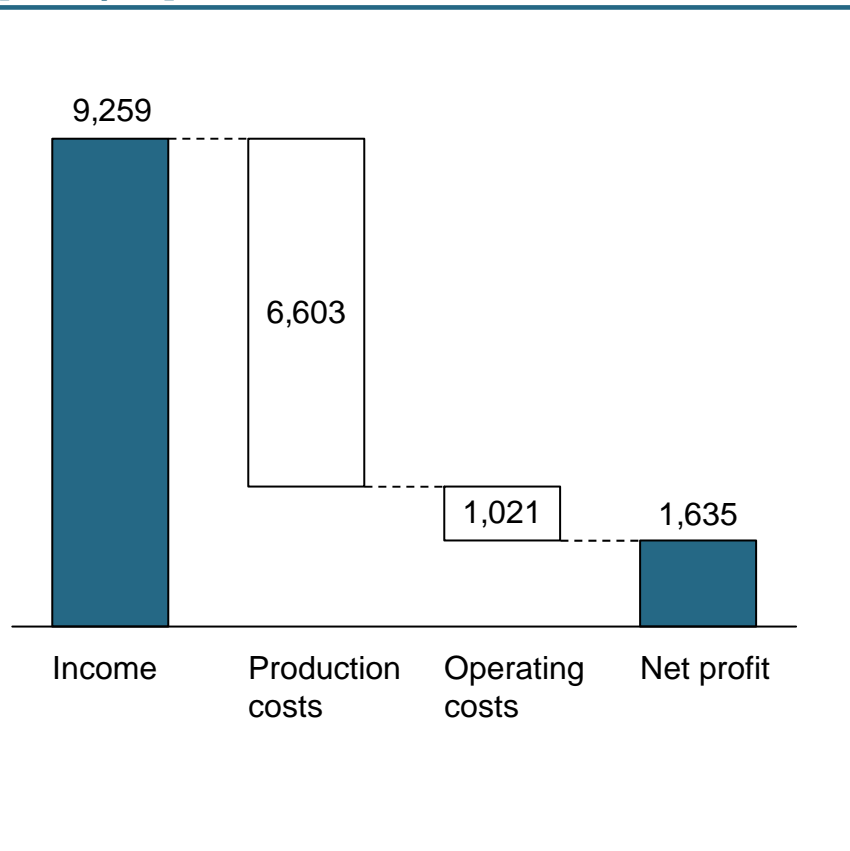
- The initial portion of the business is planned to be the development of 3,000 hectares of commercial rice to first retire some of the debt and be an area to train others in rice production
- Overall the project has 30,000 Ha and it will take 10 years to develop all the land
- The entire farm is owned by the corporation which has 3 shareholders;
  - Dominion Farms (majority shareholding)
  - Taraba State
  - TY Holdings (an investor from Taraba State) - Notore has a major shareholder in TY Holdings



## The Dominion community farm is expecting to reach USD 1,635 p.a. income per farmer in Kenya – almost quadrupling current income

INDICATIVE

### Expected income for farmers in community farm [USD p.a.]



### Income improvement and Nigeria implications

- Dominion Farms expects to achieve USD 1,635 income p.a. for farmers in the community farm in Kenya
- **It is estimated that this net profit is almost four times as much as current local farmer income<sup>1)</sup>**
- Depending on success of the pilot community farm program in Taraba State, Nigeria, similar income increases can be expected there

1) Based on a current income of USD 450 for 700kg/Ha, 2 times per year at USD 0.31



## Key assumptions for irrigated farmer income

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### Assumptions for irrigated smallholder income in Dominion Farms Community Farm Kenya

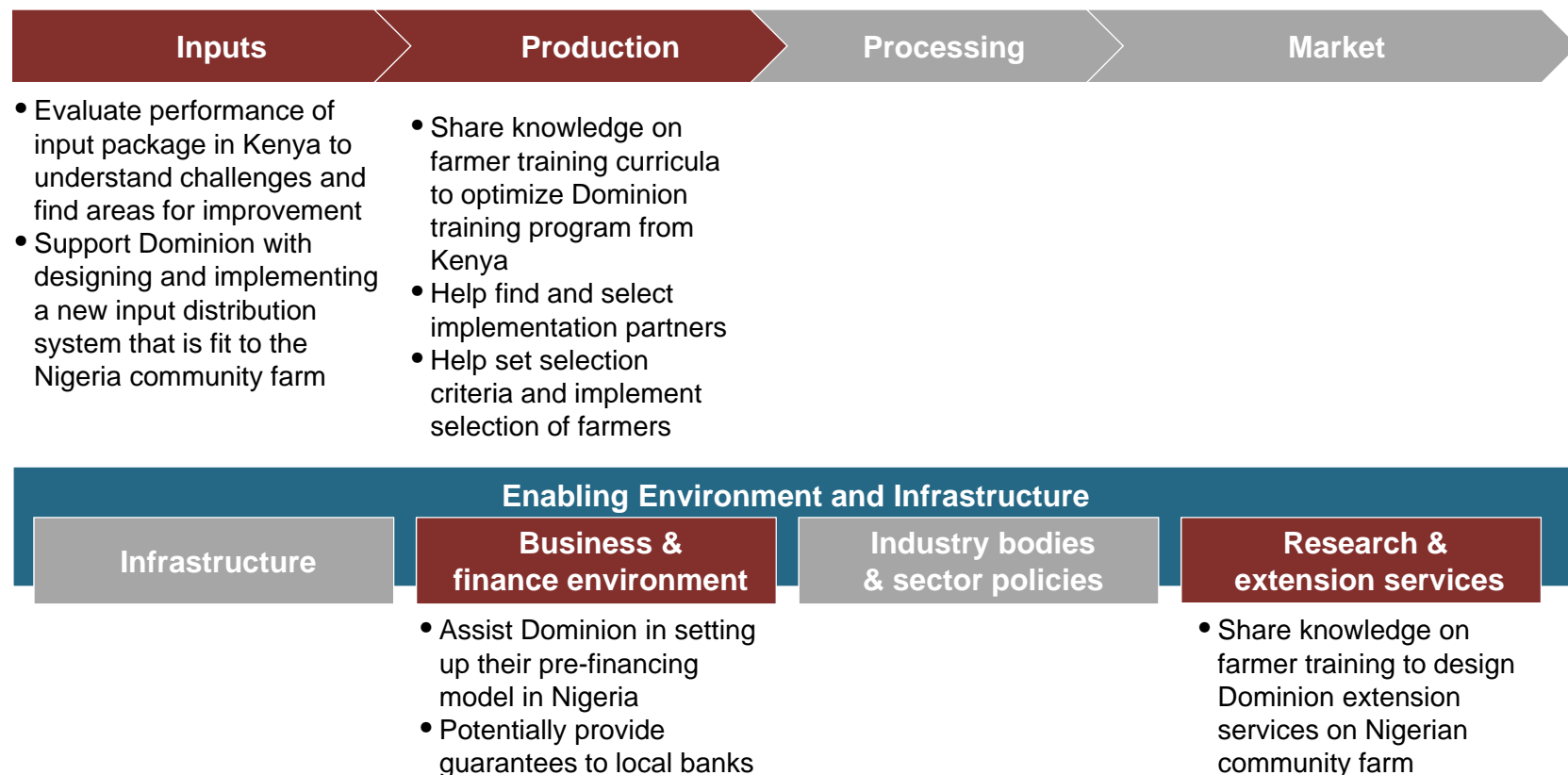
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<b>Area planted [Ha]</b>	<b>2</b>
<b>Harvests p.a.</b>	<b>2.4</b>
<b>Average paddy yield [MT/Ha]</b>	<b>6.2</b>
<b>Dominion price for paddy [USD/MT]</b>	<b>310</b>
<b>Smallholder income</b>	
• Total MT of paddy [MT]	29.7
• Total revenue for paddy [USD]	9,259
• Total production cost for paddy [USD]	6,603
• <i>All farm inputs, field overhead and land lease</i>	
• Total operational cost for paddy [USD]	1,020
• <i>Education and training, equipment and interest on loans</i>	
<b>Net income for paddy [USD]</b>	<b>1,634</b>





## A donor could support Dominion with setting up their new Taraba community farm based on both Dominion Kenya and donor experiences starting from 2014



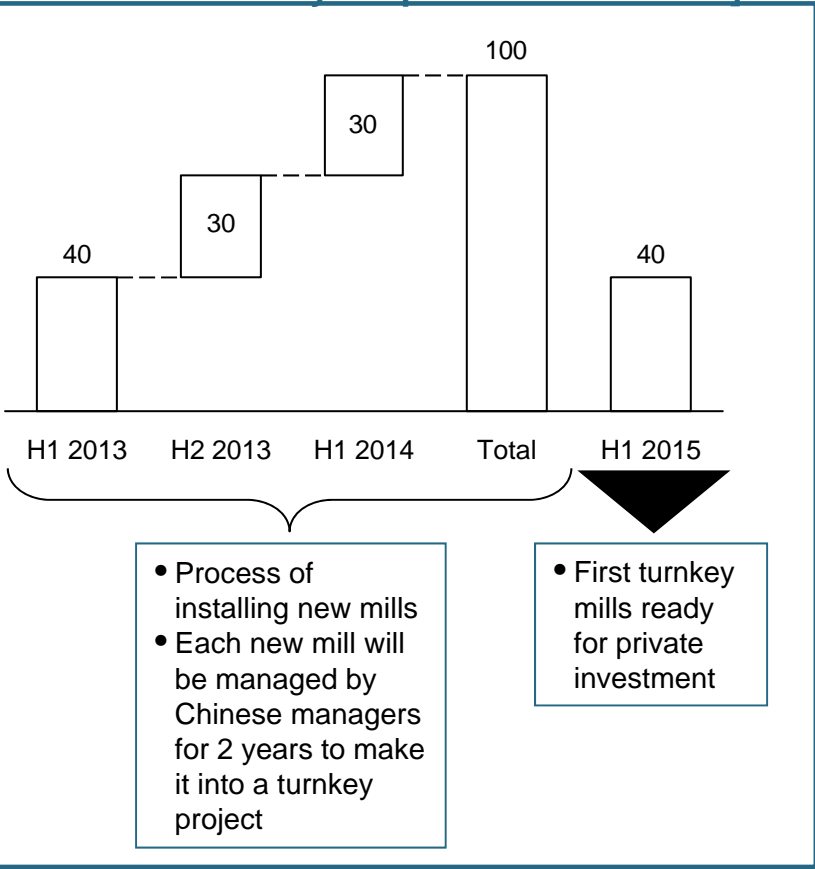
**Follow-up: Determining timeline for setting up community farm after developing commercial farm**

**C. Potential partners in Nasarawa, Taraba and Niger States  
- 100 Chinese mills and DADTCO small mills**

# Anticipating a dramatic increase in paddy production as a result of the new rice transformation plan, the GoN is importing 100 new Chinese mills

**INDICATIVE**

**Projected development of 100 new Chinese mills [# of mills installed / ready for private investment]**



- The Federal GoN projections for paddy production increase are high, based on the large investments they are making in the industry
- Therefore they are purchasing significant additional milling capacity in the form of 100 new mills imported from China
- Most states will receive two mills, while major paddy producing states can receive up to four mills each
- GoN has a beneficial financing agreement with China
- Furthermore China will deliver Chinese managers that will set-up the mills for two years
- After that period GoN aims to sell the mills to private local investors

# DADTCO might want to start a mechanization and milling project in Taraba State, based on the existing concept for cassava processing

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## Rice processing company element

- The processing company would consist of several elements
  - Mobile pre-cleaning and pre-sorting equipment
  - Good quality processing equipment to mill high quality white rice
  - Good quality processing equipment to mill highest quality white parboiled rice
- The outcome of this processing would be high quality products that can be sold to replace imports

## Rice mechanization company element

- The rice mechanization company would set up a sustainable soil tillage farm mechanization scheme through small walking tractors
- This would be complemented by small winches (called Monkey Winches) for land clearing
- The walking tractor would be equipped with the rightly sized implements
- A vortex rice fan will be used for small scale threshing
- There would be central facilities provide maintenance service

• This model could be replicated in large rice producing states like Niger  
• No concrete implementation plans or funding are in place yet

## DADTCO's cassava processing plants have been very successful in Nigeria and is changing the way cassava is grown

INDICATIVE

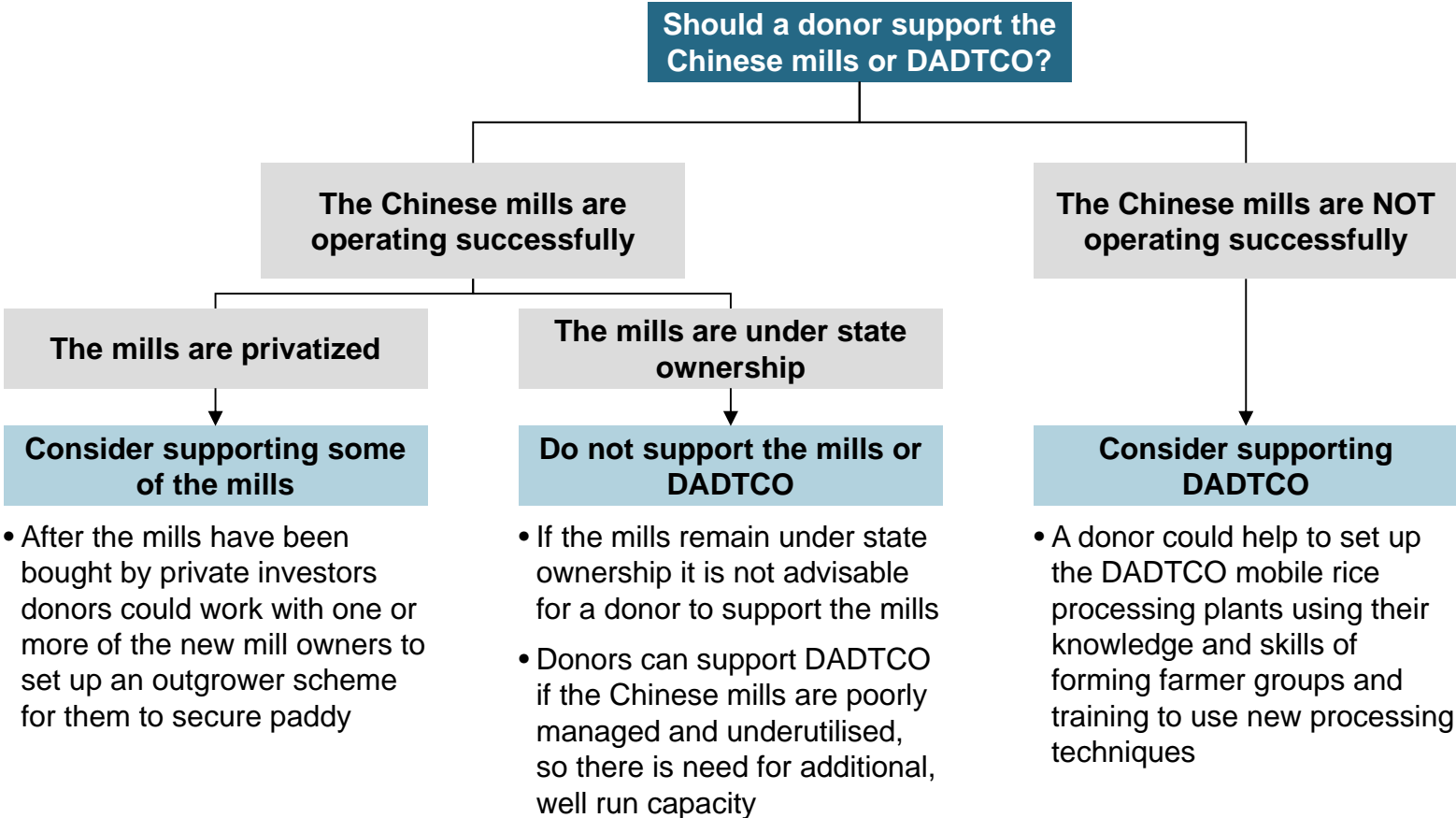
### DADTCO in cassava processing

- The mission of DADTCO cassava is to initiate a cassava revolution across Africa
- They developed a “split” processing technology (in the field and at the factory) that has changed the way cassava is perceived, grown and processed in Nigeria
- The company's Autonomous Mobile Processing Units (AMPUs) process fresh cassava on-farm or nearby
- Each AMPU processes harvested cassava into cassava cake, which can be used by the brewing industry or transported to a DADTCO factory for further processing into high-quality cassava flour (HQCF), starch and glucose
- DADTCO establishes contracts with farmers who are trained in best agricultural practices and provided with services (inputs, credits, infrastructure, mechanization) through the Cassava+ Program of IFDC
- *“If the farmer cannot come to the factory; let's bring the factory to the farmer!”*

### Example of an AMPU



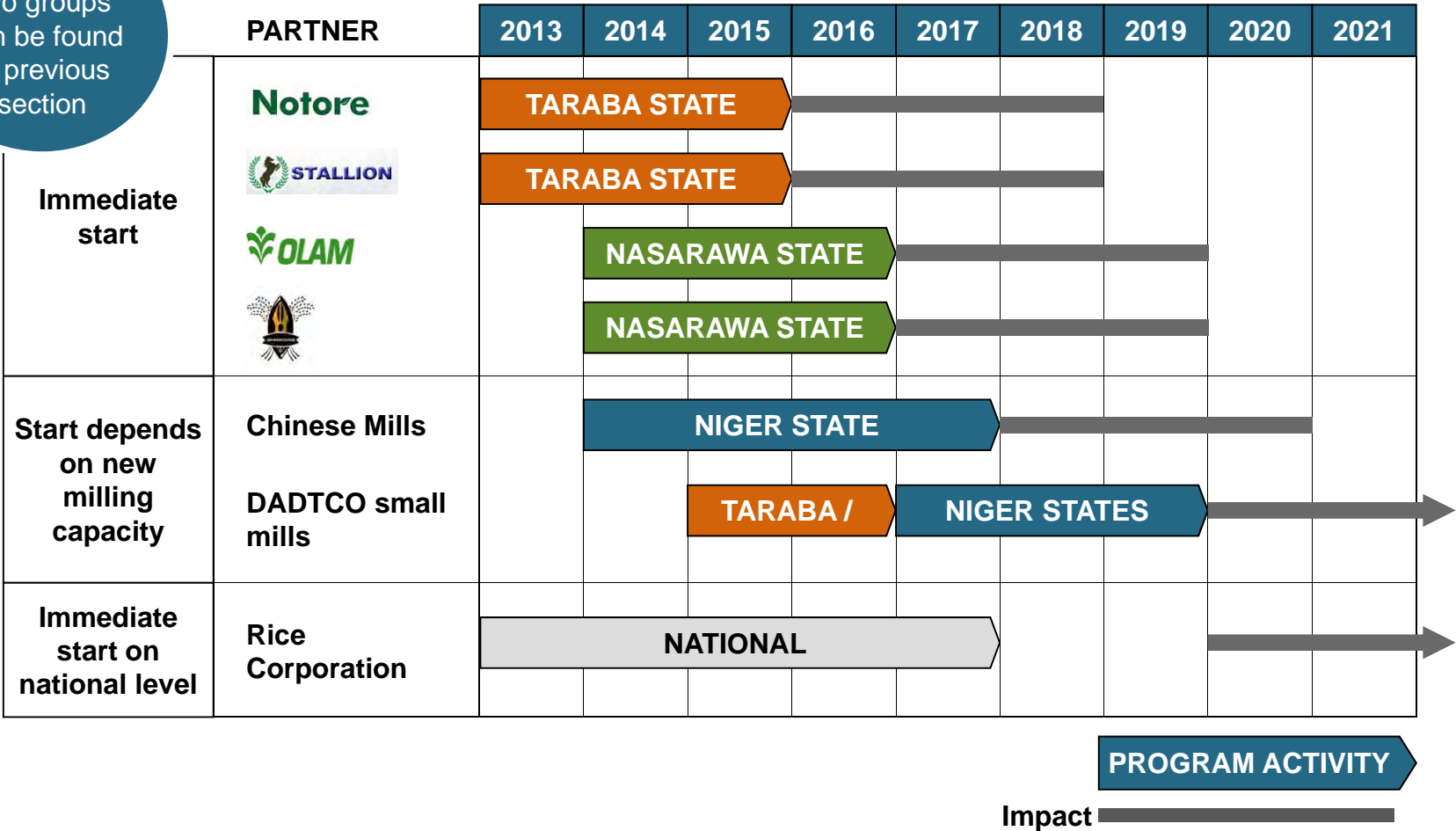
# Donors should decide whether to work with the Chinese mills or to support DATDCO based on the success and ownership of the Chinese mills



## **D. Recommendations**

# We have outlined a high level program of support to the rice industry development in Nigeria

Detail on first two groups can be found in previous section



Source: Team analysis



# Lastly, a donor could aid set-up of ‘Rice Corporation’ - a body to influence policy, production and marketing

Industry alliance	Opportunity
<p>Rice Corporation</p> <ul style="list-style-type: none"> <li>The President’s Rice Value Chain Transformation Team aims to stimulate the setting up of an industry alliance, the Rice Corporation</li> <li>The body would play the role of former marketing boards – influencing policy and production and stimulating marketing</li> </ul>	<ul style="list-style-type: none"> <li>A donor could help to set up this industry alliance by:               <ul style="list-style-type: none"> <li>Convening stakeholders from across the industry</li> <li>Develop the legal and organisational structure</li> <li>Develop the business model</li> <li>Provide technical assistance to the steering committee and management team</li> <li>Funding the Rice Corporation for up to 5 years as it develops a sufficient revenue base (through membership fees) to cover its costs</li> </ul> </li> <li>In addition, the donor could help set the strategy and agenda for the Corporation’s activities</li> </ul>

## There are some open questions for further investigation

<b>Topic / Company</b>	<b>Key questions</b>
<b>Rice quality standards</b>	<ul style="list-style-type: none"><li>• What are the exact characteristics of the imported rice that needs to be replicated in local rice in order to be able to replace the imports?</li></ul>
<b>Notore</b>	<ul style="list-style-type: none"><li>• What is the attitude of farmers in Nasarawa and Taraba States towards Notore?</li><li>• How would Notore like to work with a donor?</li><li>• Exactly how does the current Notore seed outgrower scheme work and how committed are they in going to Nasarawa / Taraba?</li></ul>
<b>Stallion</b>	<ul style="list-style-type: none"><li>• What is the attitude of farmers in Nasarawa and Taraba States towards Stallion?</li><li>• How would Stallion like to work with a donor?</li><li>• What is the detailed process for Stallion's outgrower model and how effective is it?</li></ul>
<b>OLAM</b>	<ul style="list-style-type: none"><li>• What were the opinions of farmers in the previous OLAM outgrower scheme?</li><li>• How would OLAM like to work with a donor in this project?</li><li>• What are OLAM's intentions with this outgrower scheme and how much are they willing to invest?</li></ul>
<b>DOMINION</b>	<ul style="list-style-type: none"><li>• What does the proposed land in Taraba State look like?</li><li>• How does the Taraba State governance consider Dominion?</li><li>• Will Dominion be ready to start up their community farm so soon after setting up their commercial farm?</li></ul>

## There are some potential partners who a donor could work with on the implementation, most of whom have local implementation staff

### Potential implementation partners



- Extensive experience in implementing programs in Nigeria (through USAID MARKETS and current implementing partner of the USAID MARKETS II)



- Experience in implementing programs in Nigeria (through DFID PropCom program)



- TechnoServe has experience with agricultural value chain enhancement through DFID PropCom



- International NGO with successful programs on new types of fertilizer and a fertilizer voucher scheme
- Have longstanding and successful experience in Taraba State

### Potential funding partners



- USAID is active in rice through the MARKETS II program



- Have been in Nigeria for three years – aim to make soft loans rather than grants
- Actively looking for opportunities



- An agricultural investment fund run by the Central Bank of Nigeria that aims to increase investment by banks into the agricultural sector
- Operate as a facilitator between value chain links in different crops in Niger State
- Aim to be privatized by 2013

BILL & MELINDA  
GATES *foundation*