



FMARD
FEDERAL MINISTRY OF AGRICULTURE
AND RURAL DEVELOPMENT



Grassroot Extension Options: *An overview of The CBA Approach In Nigeria*

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AGRA/ NAERLS/ SG2000 Project Team**

...Delivering Innovative and Proven Agricultural Information & Technologies

Outline

- Introduction
- Objectives
- AGRA CBA Extension Approach
- Methodology
- Implementation
- What is changing?
- Conclusion

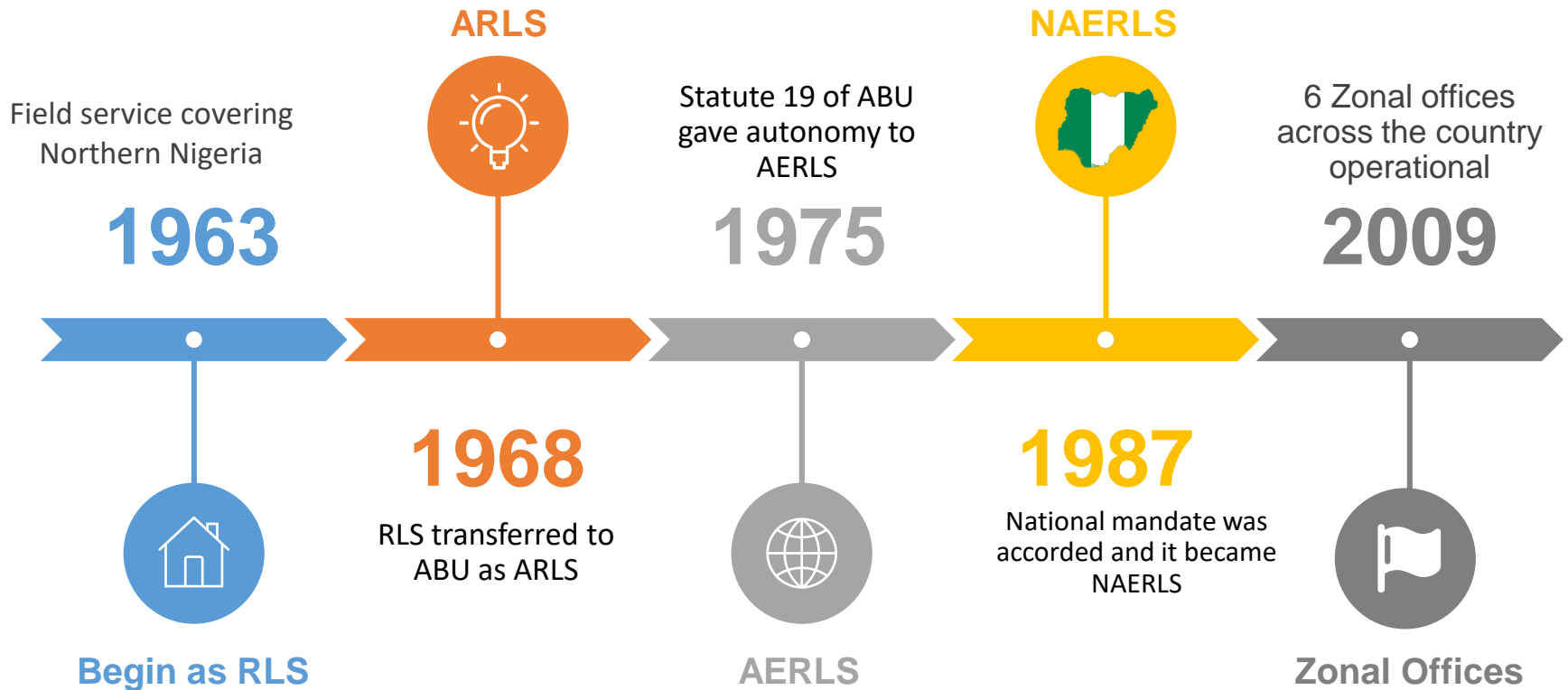


NAERLS in Brief

- One of the 17 NARIs
- Established in 1963
- Given national mandate in 1987
- Unique advantage of double parentage
 - Funded by the FMARD
 - Domiciled and Managed by ABU, Zaria
- Academic staff perform triple roles of Extension, Research and Teaching



Our History



Acronyms

- CBA – Community Based Advisors
- GAP – Good Agriculture Practices
- PHM – Post Harvest Management
- AGRA – Alliance for a Green Revolution in Africa
- Consortia – an alliance of partners executing value chain integrated interventions
- NAERLS - National Agricultural Extension Liaison Services
- SG2000 - Sasakawa Global2000



Introduction

- Agriculture is a key component of the Nigerian economy
 - 23% of GDP
 - Supports 70% of the population
- **However, incomes of agribusinesses are marginal due to:**
 - to low land and labour productivity
 - marketing constraints, and
 - policy/institutional constraints.
- This issues are associated with
 - low input use by small holder farmers with for example average fertiliser use of 18kg/hectare compared to a World average of 100kg/hectare and 150kg/hectare for Asia, only 5% of the farmers use and can access the seeds of improved varieties compared to 25% in East Africa and 60 % in Asia.



Introduction

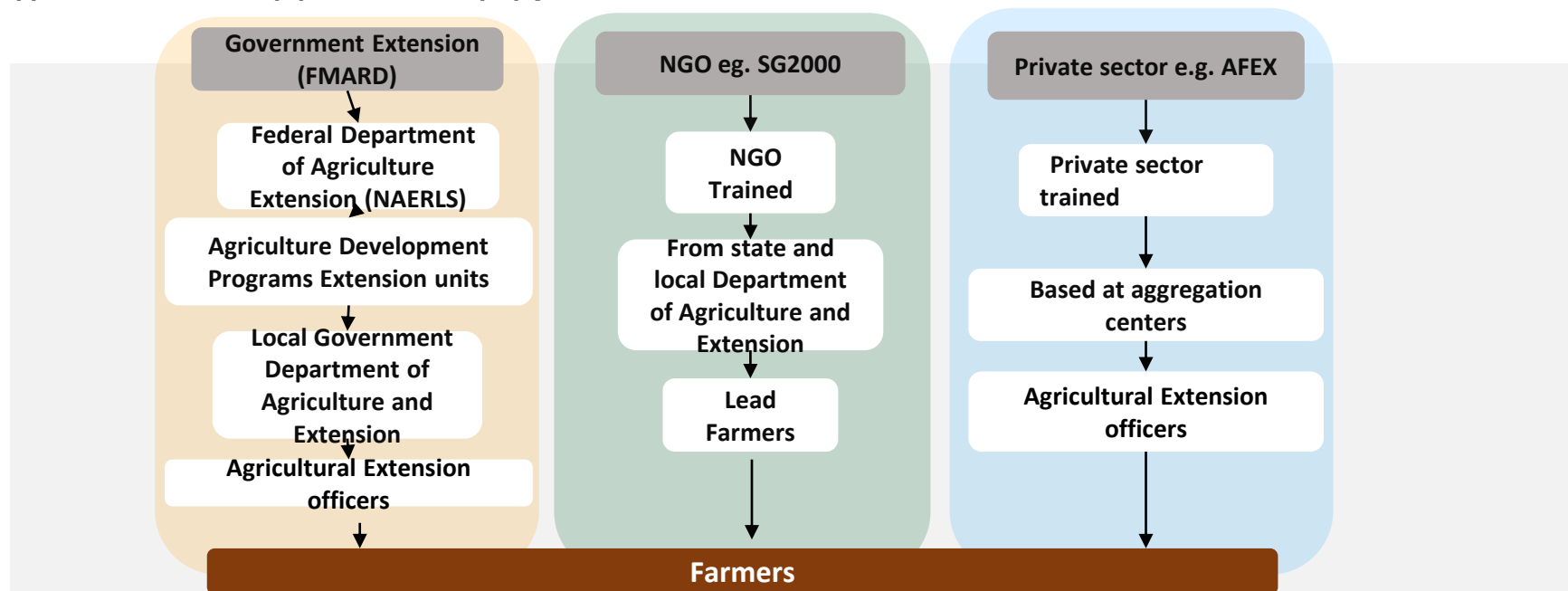
- Maize estimated average yields in Kaduna and Niger State for 2017 was 2,55 MT against optimum yields of improved varieties of 8 MT/ha, rice estimated yield was 2.15 MT against 6 MT of improved released varieties and soybean estimated yield was 0.94 MT versus an optimum yield of 2MT of released varieties available in Nigeria.
- Very low mechanisation with 10 tractors per 100 hectares compared to Indonesia with + 240 tractors per 100 hectares.
- These challenges result largely from a lack of awareness created by in-effective extension service for value chain actors.



Critical gaps in Nigeria's Extension model

Current extension system in Nigeria consists of three models:

(i) Government, (ii) NGO and (iii) private sector



Key challenges

Low numbers of Extension Agents

– Extension agent: farmer ratio in Niger 1:2900; Kaduna: 1:4100

– **Inadequate training** of Extension Agents with limited opportunities to access new technologies

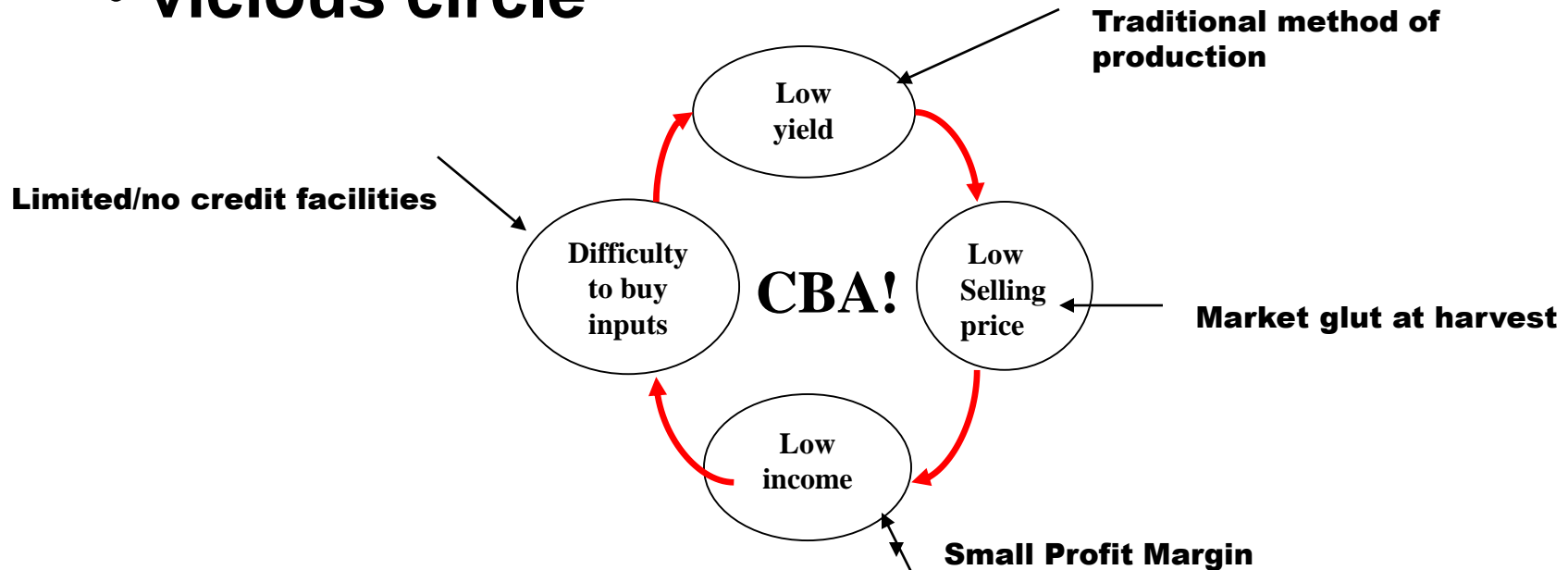
– **Lack of** content and systems for **effective use of ICT** in extension to reach large numbers of farmers

– **Inadequate extension infrastructure** that enables information and skills flow to smallholder farmers

– Lack of financial incentives for Extension Agents to offer Extension

Case for Small Scale Farmer

- vicious circle



CBA concept = Paradigm shift (Facilitation Vs Doing), an opportunity to break the vicious circle



AGRA's Extension Approach

5 main Components:

- ✓ Farmer/Extension Needs Assessment
- ✓ Self-employed Village-based Advisors
- ✓ “Mother-Baby” demonstration method
- ✓ ICT4Ag
- ✓ Partnerships



Community Based Advisors

CBAs are “self employed” agents , including women and youth who rapidly create demand for yield enhancing inputs while teaching farmers good agricultural practices and aggregating produce and linking farmers to markets

The CBA approach aims to:

- Increase awareness among farmers and catalyze the adoption of improved varieties and other yield-enhancing technologies.
- Reduce extension worker to farmer numbers to 1 to less than 500 farmers
- Advantages:
 - is relevant to the ways smallholder farmers’ process information on new crop varieties and improved agronomic practices,
 - Breaks down barriers between public and private sector actors and
 - Allows hundreds of thousands of farmers in remote villages to learn by doing
 - Ensures “last mile” access to inputs and markets

Figure 1: CBA's value chain extension &Service advisory services



Community Based Advisors

Overall Goal

To catalyze and sustain an inclusive agricultural transformation in Nigeria

- to increase incomes and improve food security
- by developing a private sector-led extension approach to increase crop productivity of maize, rice and soybean
- through increased adoption and access to yield enhancing inputs and structured markets
- for smallholder farmers in Niger and Kaduna States.

Specific Objectives

- Institutionalize Community-Based Advisor Extension Approach in Nigeria's policies for Extension at the National and State levels
- . Develop training modules for use by master trainers to identify and train CBAs and extension agents
- To develop appropriate ICT4Ag tools for use by Extension Agents and CBAs to train farmers on how to increase productivity
- To strengthen the implementation of the CBA Approach in Niger and Kaduna States in Nigeria



CBA Characteristics and Selection criteria

Basic qualifications - characteristics

- Some significant high school education
- They should be able to keep basic records
- The CBA can be trained by and recognized by the Ministry of Agriculture's Extension Services.
- Personable - can work with all farmers input and output dealers
- Good communicator - to be able mobilize and accurately pass messages to farmers
- Entrepreneurial tendencies
- Has the capacity to invest in business or already in small business
- Passionate about agriculture

Selection of CBAs

- Is democratically selected by farmers in the community to advise and serve ALL farmers.
- **Selection criteria include:**
- *Social factors*, technical and entrepreneurial tendencies
- Trusted by farmers in their villages, Honest, Respected
- Willing to share knowledge and information with ALL farmers in the Village
- Gender consideration: a criteria should be set to encourage 50% female and youth participation
- Willingness to learn and adopt new technologies
- Time available for the business and associated activities



Characteristics and Selection of VBAs

Basic qualifications - characteristics

- Some significant high school education
- The VBA can be trained by and recognized by the Ministry of Agriculture's Extension Services.
- Personable - can work with all farmers input and output dealers
- Good communicator - to be able to mobilize and accurately pass messages to farmers
- Has the capacity to invest in business or already in small business
- Passionate about agriculture
- Is democratically selected by farmers in the community to advise and serve ALL farmers.
- Facilitator needed to avoid bias of opinion leaders – role of implementing partners

Selection of VBAs

- **Selection criteria include:**
- *Social factors*, technical and entrepreneurial tendencies
- Trusted by farmers in their villages, Honest, Respected
- Willing to share knowledge and information with ALL farmers in the Village
- Gender consideration: a criteria should be set to encourage 50% female and youth participation
- Willingness to learn and adopt new technologies
- Time available for the business and associated activities



Methodology

Project Sites



Female (%)	22
Youth, 18-35 yrs. (%)	68

No. of CBAs Selected in Kaduna and Niger State

	Kaduna	Niger	Total
No. of LGAs	20	21	41
No. of communities	337	350	687
No. of CBAs selected	2240	2207	4,433
No. of CBAs trained	2,233	2200	4,433

Organization	State	Number of CBAs	
NAERLS		Male	Female
	Kaduna	932	308
	Niger	794	203
SG2000	Kaduna	952	248
	Niger	795	215
Total		3473	974(22%)



Farmer/Extension Needs Assessment

- Project worked with extension workers from the local government areas to:
 - identify the farmers' needs
 - know farmer practices
 - determine how and who prepares the land,
 - decide varieties to plant, what fertilizers they use and how,
 - chose what do they spray and why,
 - determine when to harvest, and what processes do they do during and after harvest?
- The information gathered from the above influences decisions on what and how to demonstrate new technologies



Figure 2: Farmer sensitization and community mobilization



Training of Community Based Facilitators

	Training conducted	No. trained
1.	Farmer Group, Management And Dynamics	2410
2	Gender Inclusion Strategies For Agricultural Growth	987
3	Selection of Community Based Advisors (CBAs) for Master Trainers	275
4	Training Methods for Farmers	2400
5	Demo Protocol and GAP	4,433
6	Management Of Fall Armyworm In Nigeria	4,233
7	Entrepreneurship	2410
8	Post- Harvest Handling & Quality Standards from crops	2410
9	Improved Rice Parboiling Techniques	30



Development of Training Guide

Rice Fact Sheet

Maize Fact Sheet

CBA Factsheet 3

The PIATA, AGRA, NAERLS CBA Project

Maize Good Agricultural Practices

Land Preparation
Prepare soil that is deep, medium-textured, and well drained, with a high water-holding capacity in the pH range of 5.5 to 8.0.
Prepare rows 75cm apart; prepare planting holes within the rows, 20cm apart.
Prepare soil for sowing by either tilling appropriately or leaving it untilled. Minimum tillage is profitable because most Nigerian soils (in the Savanna zone) are prone to erosion.

Seed Selection & Planting
Use recommended improved varieties that can be grown in Nigeria profitably; these include SAMMAZ 39, Ota Super 8, Ota Super 11, SC 719, SC 661, PUA 13, and 30Y87.
Plant your seed early. Do not plant too early (eg, by February) or too late (eg, by August). Plant as soon as the rains are established.
Plant 20-25kg per hectare.
Plant 75cm by 25cm or 90cm by 20cm (inter-row by intra-row respectively). It should be 1 plant per hole; if more than one plant per hole, thin (or reduce) to 1 stand per hole at 2 weeks after sowing (WAS).

Fertilizer Application
For 1 hectare of maize field, apply 8 bags of NPK 20:10:10 and 2 bags of Urea 46:0:0.
At knee-high stage, make hole 5cm from and 5cm below the 2 plants, place one soda bottle top (3 finger pinch) in the hole, cover with soil.

Weed Control
For weed control, the period between germination and tasselling is critical: For 1 hectare, apply 4-5 litres of Atrazine (mixed with 200-250 litres of water) between 0 hours and 48 hours after sowing. Should there be an attack by Fall Armyworm or other serious diseases/pests, use the control methods as recommended by your Extension Agent/Community-Based Advisor.

Plant maize one seed per hole at 25cm spacing between plants.

Keep inter-row spacing at 75cm apart.

Place one soda or soda bottle cap (or 3 finger pinch) of NPK planting fertilizer in a hole 5cm from bottom of plant.

Purchase why the Sustainable Agricultural Transformation to AF rice (S-ATSR)

CBA Factsheet 3

The PIATA, AGRA, NAERLS CBA Project

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“Mother-Baby” demonstration method



Mal Mumuni's baby demo of FARO 59 in comparison with FARO 44 a popular variety

- Each CBA conducts a mother demo, usually a quarter hectare showcasing: improved varieties from different sources, GAP, fertiliser application rates and method
- Each farmer in the community was provided a 50-100g packet of seed of an improved variety and a 200g packet of the common fertiliser used in the area to go and conduct a baby demo usually 5 x5 metres.
- A total of 5505 Mother demos and 804,738 baby demos established



Adapt ICT4Ag Applications to enhance businesses of CBAs/ Adapt and implement the use of ICT based tools (crop advice) for the project crops

- Contact Center Phone Based

- Voiced calls to Live agent at NFHL (08139890090)
- Self-service via an Interactive Voice Response (IVR) (08139890092)

- Short Message Service (SMS)

- Mobile Application: Soybean Guide, Maize Guide and Rice Guide.

INTRODUCING THE NATIONAL FARMERS' HELPLINE CENTRE

The National Farmers' Helpline Centre was inaugurated as one of the newest extension delivery approaches that will be most effective in bridging the gap experienced in the current conventional extension delivery system. This is because it involves the use of ICT and hence a greater penetration to cover wider target beneficiaries in every aspect of agriculture.

The centre is established by the Federal Department of Agricultural Extension (FADAE) of the Federal Ministry of Agriculture and Rural Development (FARMARD) to help all stakeholders in the Agricultural Value Chains including:

1. Provision of latest and proven best agricultural practices to help increase farm output.
2. Provision of real-time market information for agricultural produce buyers and sellers so that they can get maximum financial benefits on agricultural commodities.
3. Provide guidance to address farm challenges (disease outbreaks, flood, etc) and thereby mitigate losses.
4. Provide guidance and information on how and where to source quality agricultural inputs.
5. Provide information on both Government (Federal, State and Local Government) and private intervention programmes (loans, trainings, etc) on agriculture across the country.

6. Provision of an innovative platform for reaching out to youths with regard to farming as a viable and career opportunity in the agricultural sector bearing in mind that the current national farming population is aging.

7. Building a nationwide information database for stakeholders in the agricultural sector.

The centres have been equipped and furnished at Institute of Agricultural Research (IAR) Zaria, Cereals Research Institute, Madaguri, covering farmers in the North West Zone; National Cereals Research Institute, Badeggi, Niger State, covering farmers from North Central Zone; National Root Research Institute, Umudike, Abia State, covering farmers from the South East Zone; Institute of Agricultural Research and Training, Ibadan, covering farmers from the South West Zone; and National Institute for Oil Palm Research Institute, Benin, covering farmers from South-South Zone of the Country.

The National Farmers' Helpline Centre would run on a multiple contact centre model with the hub in NABEIL, Zaria and the nodes each at the six (6) Zonal Coordinating Research Institutes in the six geo-political zones. The access would be through a toll-free number the four (4) toll-free numbers and many other issues bordering on agriculture in Nigeria, call us on:

081-3989-0090
Mondays to Fridays (8.00 am – 4.00 pm)
Please call this number and choose the following language options, for:
English, press 1 Hausa, press 2, Pidgin English, press 3 Yoruba, press 4 Igbo, press 5

Soybean Guide: Disease/Pest

Disease: Army Worm

When user chooses a pest attack, then this screen displays. It shows cause(s) and a step by step guide of mitigating the effect of the pest.


Army Worm infestation is caused by


Recommendation for Army Worm infestation
Obtain 2 litres of Gramazol, mix with 25 litres of water and spray on the affected plant stands.

Repeat this after a week if....



Adapt ICT4Ag Applications to enhance businesses of CBAs/ Adapt and implement the use of ICT based tools (crop advice) for the project crops





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Why National Farmers Helpline

The traditional extension services like physical contact with farmers cannot meet the demands of millions of farm families in Nigeria. However, with the growing penetration of mobile telephony across the length and breadth of Nigeria, a phone based extension delivery system will help bring extension services to millions of Nigerians in real time

BENEFITS OF NATIONAL FARMERS HELPLINE

- Bridge the Extension Agent- Farmer Ratio
- Connect farmers to extension enlightenment programmes
- Respond to complaints, enquiries and provide feedback to all agricultural related issues
- Serve as helpdesk to all farmers along agricultural value chain of all commodities
- Provision of latest and proven best agricultural practices to help increase farm outputs
- Provision of real-time market information for agricultural produce buyers and seller so that they can get maximum financial benefits on agricultural commodities
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THE NATIONAL FARMERS HELPLINE CENTRES (NHFL)

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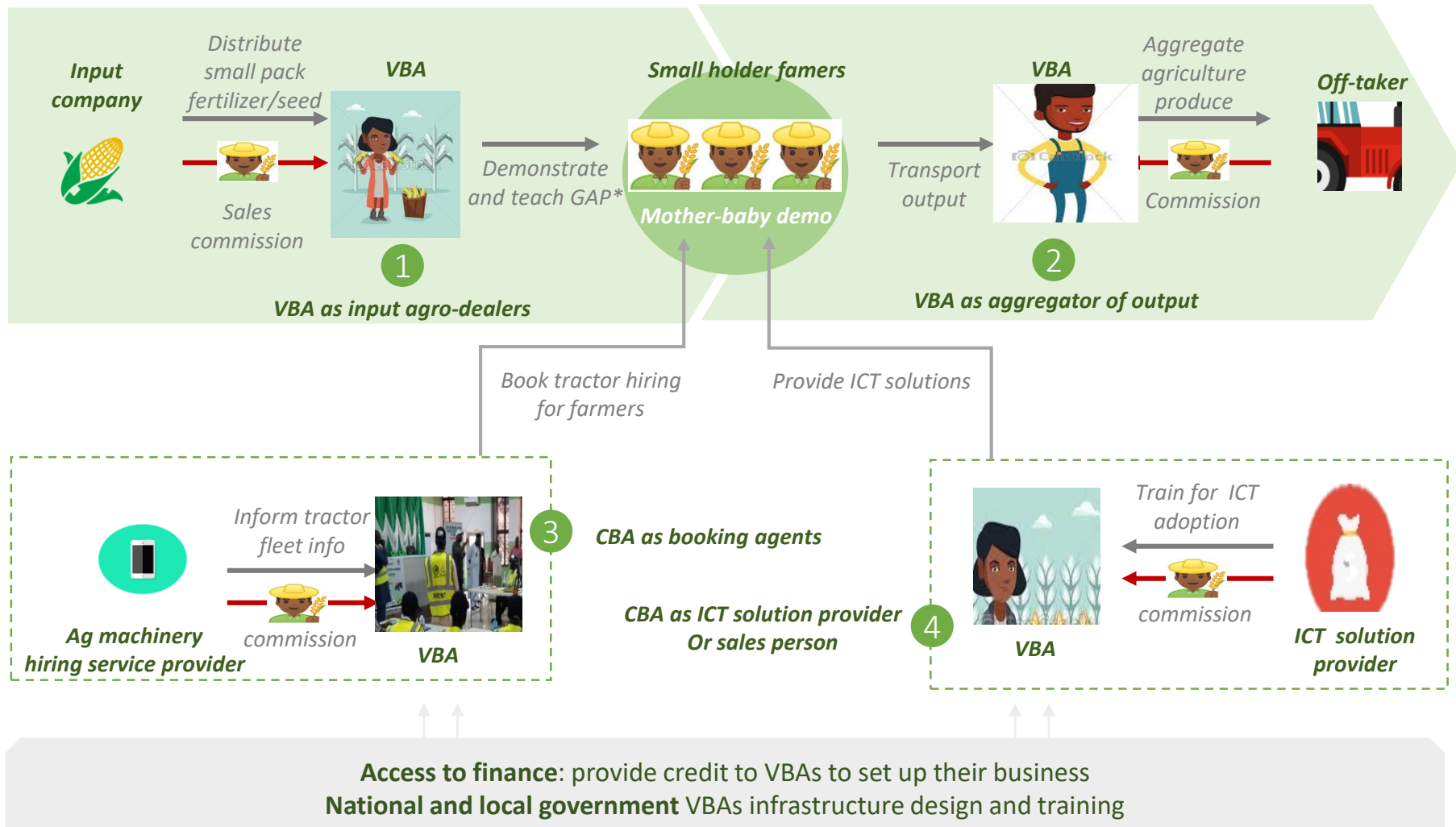
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CBAs are transforming into input agro-dealers, output aggregators, booking agents and even sales person



How can CBAs generate income?

- AGRA is building CBA capacities for service provision to generate income through a wide range of activities .



AGRA is cooperating with a range of partners

Private sector

- i. Fertilizer companies
- ii. Seed companies
- iii. Crop protection companies
- iv. Financial institutions
- v. Off takers, processors, larger aggregators
- vi. Mechanization service providers

Policy-makers and public sector

- i. National governments
- ii. Local Governments
- iii. NGOs
- iv. Research institutes
- v. Development finance institutions



Partnerships (cont'd)

SeedCo- 750Kg of hybrid Seed

- In collaboration with UPL Agro Chemical Company (Viper)- FAW control
- Treated 10 Mother Demos in Giwa and Sabongari LGAs of Kaduna State,
- Treated 10 Mother Demos in Katcha, Lavun and Mokwa LGAs of Niger State
- Trained 257 CBAs (145 Men and 112 Women)



AFEX- 138 CBAs



Partnerships

Partner	Leverage Activity	Amount (USD)	Cropping Season
Premier Seeds Ltd.	Provision of 23.5MT of seeds for baby demos	28,030	2018, 2019,2020
Value Seeds Ltd.	Provision of 23.8MT of seeds for baby demos + input loans to 1756 SHF	664,619	2018, 2019& 2020
SeedCo Ltd.	Provision of 1.6Mt of seeds and other inputs for baby & Mother demos	4,818	2018, 2019,2020
Monsanto Seeds Ltd	Provision of 850kg of seeds for baby demos	3,187.5	2018
Green Agric Seeds Ltd (GAWAL)	Provision of inputs for2 No rice mother demo	152	2019
AFEX Commodities Exchange	Training and internship of 38 of CBAs as grain collection Centre managers on warehouse operations management & input loan for about 38,000 farmers	4,896,051	2019 & 2020
KADA	Provision of 8 warehouses for renovation to serve as grain collection centres	200,000	2018
MOA in the States (Kaduna 11, Niger 6)	Provision of 17 warehouses for renovation to serve as grain collection centres valued at	425,000	2019
Gold Agric	Provided 1MT of soybean Seed	1,143	2019
Corteva	Provided 0.5MT of maize Seed	2,857	2019
OCP	Provided 5MT of fertilizer	2,285	2019
Golden Fertilizer	Provided 2MT of NPK fertilizer for demos + 10MT for blend production	1,428	2019& 2020
UPL	Agro Chemical	3050	2019& 2020
ABU Microfinance bank & SEAP	Loan to farmers and Agrodealers	253,856	2019 & 2020
NOWAIDA	Supplier Credit to agrodealers	447,221	2019&2020
Rural Hub& IITA on Cowpea demo	Training on Digitat Extn (2814) & Cowpea demo (2333.5)	5138.5	2020
Labar Grains-	Input loans to 116 farmers for 162ha	37,350	2020
Total		6,973,338	



Policy engagement to catalyze system change and achieve scale

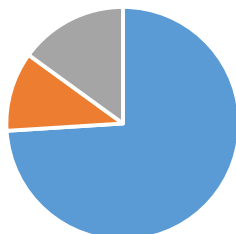
Working with governments to institutionalize Community-based Extension Approach in Nigeria's policies for Extension. Strategic relationship with relevant Ministries, and parastatals is increasing awareness

- To institutionalize the CBA approach at the 3 tiers of government.
- Held Advocacy Meetings with the Federal, State and Local Government
- A memo was sent to the Minister of Agriculture at the Federal level for consideration
- At the State level, the State Agricultural Investment Plan (SAIP) reviewed to accommodate the CBA approach in the Extension policy. Held two Stakeholders meetings
- The Local Governments are critical for sustainability of project beyond the Project intervention

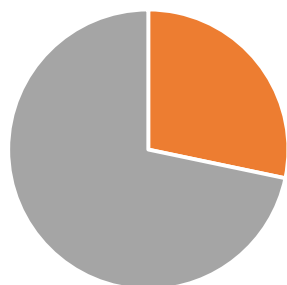


Changes in agronomic practices – seed and planting

Before

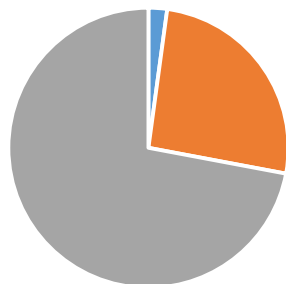


Best



■ Local varieties ■ OPV ■ Hybrids ■

Struggling



■ Local varieties ■ OPV ■ Hybrids

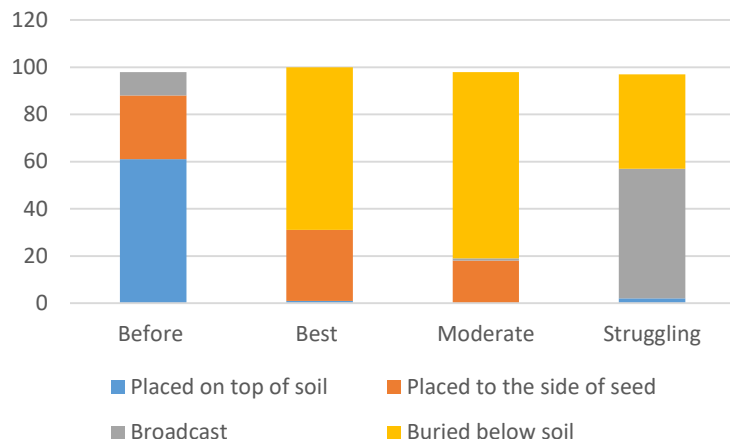
- Before AGRA interventions 60-74% of the farmers were using local varieties
- Farmers adopted the use of improved varieties with
 - 67-71 % using seeds of hybrids,
 - 24 -28 % using OPVs and
 - little to no local varieties used
- Even the struggling farmers adopted the use of improved seeds with mainly hybrids
- Hybrids used are from both local and multinational companies and included
 - Sammaz- 49, 24
 - Sammaz –OPV 12, 14, 15, 16, 17, 18, 59
 - Oba super – 2, 3, 6,11, 98
 - SeedCo – SC719, SC513
 - Value Seeds – VSL 2065
 - Monsanto – DK777
- All farmers adopted
 - planting 1-2 seeds – range from 79-87 % planted 1 seed and 18-20 % planted 2 seeds,



Changes in agronomic practice

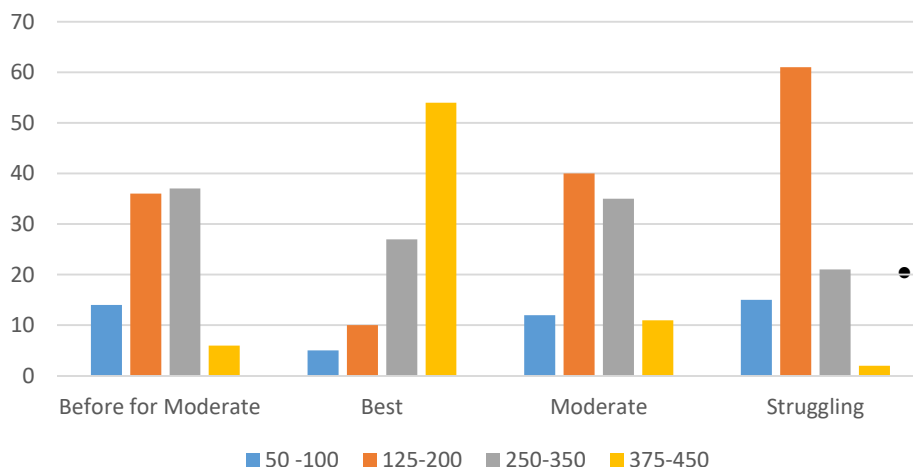
Fertilizer application methods and quantity used

Fertiliser Application Method

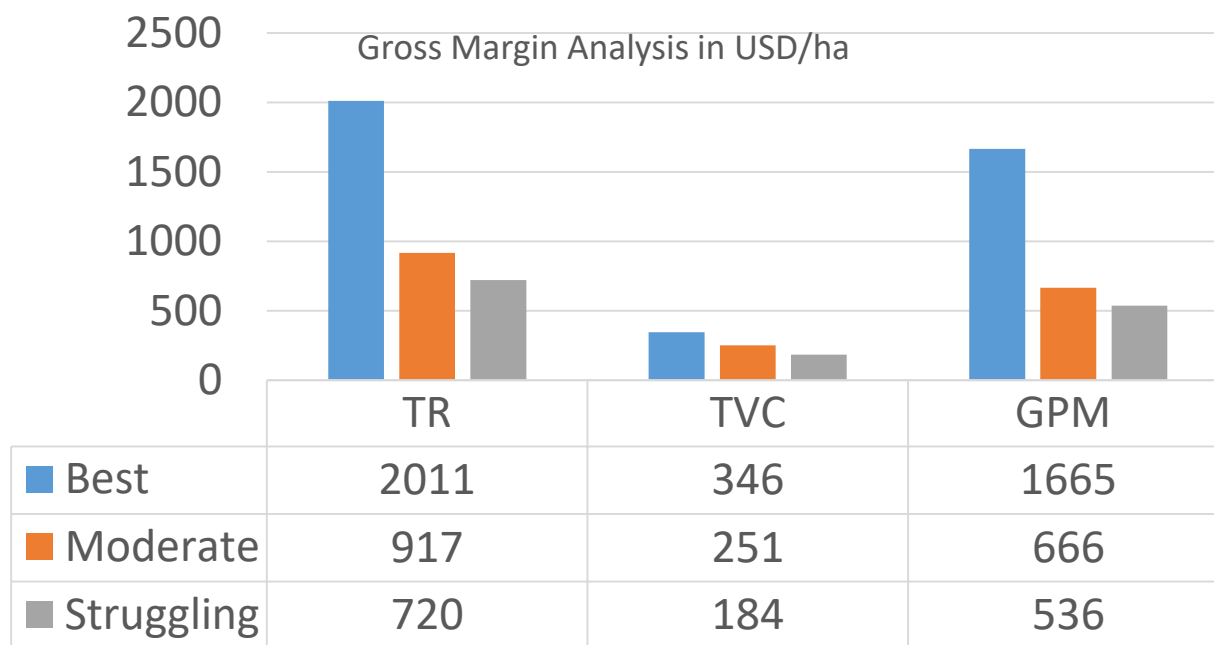


- Before AGRA interventions 60 % of the farmers applied fertilizer on the top of the soil
- After interventions both best and moderate farmers applied the fertilizer below the soil whereas the struggling farmers still had over 50 % broadcasting the fertilizer
- 80 % of the struggling farmers applied less than 350 kg NPK per ha
- The cost of the fertilizer maybe an issue as 76% of struggling farmers applied less than 200kg/ha or less compared to best farmers with only 15 % of the farmers applying same amount
- More than 80 % of the best farmers applied more than 250kg/ha of fertilizer compared to 46 % moderate and 23% struggling farmers

Fertilizer quantities applied



Gross Profit Margin Analysis (USD/ha); Kaduna State, Nigeria



In Kaduna, Gross Profit Margin for “Best” farmers was on average USD 1665/ha.

Gross Profit margins for “Moderate” and “Struggling” farmers was USD666 and USD536, respectively reflecting lower productivity

$$\text{Gross Profit Margin (GPM)} = \text{Total Revenue (TR)} - \text{Total Variable Cost (TVC)}$$



Stories from the field (Cont'd)

- CBAs facilitating training of farmers on GAP & PHH& SM (856,000 Farmers, 27% women, 40% youths)
- Improved crop yield from the GAP and use of Improved Seed- farmers response' Wow, This is one of the maize cob harvested from baby demo in Chikun LG, Sabongayan. premier seed (variety) Oba 6'



Expectations From this meeting

- Increased understanding of objectives and implementation strategies
- Buy-in new partners
- Specific options with NIFAAS and other stakeholders on policy options for best bet grass root extension practices including the CBA's.
- Specific options with stakeholders to adapt/ upscale/ integrate the CBA's CBA's concept into prevailing individual stakeholder practices in new states.

Conclusion

Limited extension personnel and infrastructure constitute a critical challenge in the bid to catalyse agricultural transformation in Nigeria and rest of Africa. A new approach is needed to extend advisory services to value chain actors in a sustainable manner.

The CBA concept has shown strong capacity to catalyse private sector and farmer led extension System change to improve Extension Service Delivery which if sustained can lead to the desired agricultural transformation.

There is a lot of potential goodwill and buy-in from the stakeholders that will require innovative partnership options to harness.

Institutionalize Community-Based Advisor Extension Approach in Nigeria's policies for Extension at the National and State levels will help resolve the challenge.



Recommendations

- showing strong potential for being part a sustainable solution to the dearth of grass root extension personnel and should be up scaled to other parts of the nation
- Existing gaps and challenges
 - financial inclusivity at smallholder levels,
 - involvement of women groups in production and processing without affecting existing sociocultural norms.
 - Continued capacity building for farmers' group organization and management is vital;
 - continuing effort to strengthen partnerships of stakeholders with different operational mechanisms (public versus private sector) is required.



Collaborating Institutions/ Organizations

- Institute for Agricultural Research (IAR)
- Federal Department of Agricultural Extension (FMARD)
- National Cereals Research Institute (NCRI)
- Bank of Agriculture
- State and LGA's extension outfits
 - i. Kaduna & Niger State Ministry of Agriculture
 - ii. Kaduna & Niger State Agricultural Development Agency (KADA & NAMDA)
 - iii. LGA Departments of Agriculture, Kaduna & Niger State Ministry of Local Government affairs

Collaborating Institutions/ Organizations

- Private sector
- Fertilizer manufacturers and dealers: FEPSAN, OCP, Notore, Indorama, Golden fertilizer
- Seed companies: SEEDAN, Premier, Da-green, Value Seeds, Seedco, Monsanto, Tecniseed, Corteva, SeedCo, Maslaha,
- Agro-input agencies- NOWAIDA/ NOCAIDA
- Offtakers - OLAM, Flour Mill, Umza and Onyx
- Savannah Resource Foundation (Kaduna State)
- NIFAAS
- Others, as necessitated by activity



Last Remarks

- Africa can feed Africa. Africa should feed Africa. And I believe that Africa will feed Africa Nwanze, 2013
- Nigeria can feed Nigeria. Nigeria should feed West Africa. And I believe that Nigeria will feed a significant proportion of Africa. Daudu, 2018



Thank You for Listening.
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Thank You!

