AIP FINAL NARRATIVE PROJECT REPORT:

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FARM RADIO INTERNATIONAL RADIOS RURALES INTERNATIONALES

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List of acronyms

AEZ(s)	Agro-Ecological Zone(s)
AIPs	Agricultural Input Package(s)
ATT	Agricultural Technology Transfer
ECOWAS	Economic Community of West African States
FGD(s)	Focus Group Discussion(s)
FM	Frequency Modulation
FRI	Farm Radio International
GAP(s)	Good Agricultural Practice(s)
Ha	Hectare
ICT	Information Communication Technology
IFDC	International Fertilizer Development Center
Kg	Kilogramme
KII(s)	Key Informant Interview(s)
LGA(s)	Local Government Area(s)
NARS(s)	National Agricultural Research System(s)
PRC	Participatory Radio Campaign
USAID	United States Agency for International Development
WA	West Africa

Definition of terminologies

VOICES standards for effective farm radio programming

V – The program ***values*** **small-scale farmers, both women and men**. It respects farmers for their hard work producing nutritious food for their families and the markets, often in the face of major challenges. It reaches out to farmers to understand their situation, and is dedicated to supporting them in their farming work and in their efforts to improve rural life.

O – The program provides farmers with the ***opportunity*** **to speak and be heard** on all matters. It encourages small-scale farmers to name their concerns, discuss them, and organize to act on them. It holds to account those with a duty to hear farmers and serve their needs.

I – The program provides farmers with the ***information*** they need, when they need it. Farmers require specific information and they need it in time to act on it.

C – The program is ***consistent*** **and** ***convenient***. It is broadcast at least weekly, at a time when women and men farmers can listen.

E – The program is ***entertaining*** **and memorable**. It appeals to the interests and tastes of a wide range of local farmers. Complicated material is presented in a way that helps farmers

S - Our programs ***support*** rural Africans as they test, choose, and implement practices they consider beneficial for their families and communities.

1.0 Introduction

Farm Radio International, through IFDC/CORAF, implemented the 8-month Interactive Radio Program to Support the Dissemination of AIP in Ghana and Nigeria project to deepen and improve the uptake of AIPs by farmers in Ghana and Nigeria.

This report provides detailed information about activities undertaken within the reporting period (from June to November 2022) to achieve project objectives/outcomes. Key activities that were undertaken in pursuance of the project objectives/outcomes included:

- radio station selection
- formative research
- baseline research
- program design workshop
- in-station training
- quality assurance (field monitoring and review meeting with radio stations)
- digital innovation setup (Uliza Polls and Log),
- radio station assessment, training, and provision of equipment.
- Endline evaluation

Also included in the report are success stories of project beneficiaries, challenges, lessons learned and conclusions.

Components of the project

1.1 About the project

Background

The output of agricultural productivity in West African countries is partly related to the insufficient use of suitable agricultural inputs, including improved seed varieties and appropriate fertilizer recommendations. Currently, the coverage rate of quality certified seeds in sub-Saharan Africa is still

about 25%. At the same time, the average amount of fertilizer nutrients used in the ECOWAS zone in 2017 was about 17 kg/ha, which is well below the 50 kg/ha target to be reached in 2015, as called for by Heads of State at the Abuja Summit in 2006.

Thus, IFDC and CORAF, under their respective projects "Enhancing Growth through Regional Agricultural Input Systems (EnGRAIS)" and "Partnership for Agricultural Research, Education and Development (PAIRED)," funded by the United States Agency for International Development, West Africa Regional Mission (USAID/WA), are encouraging producers to make more profit by using Agricultural Input Packages (AIPs), which are a combination of improved seed varieties, appropriate fertilizer recommendations, and Good Agricultural Practices (GAPs) specific to Agro-Ecological Zones (AEZs) for a given crop.

EnGRAIS and PAIRED developed the AIPs in collaboration with several organizations in the region, including National Agricultural Research Systems (NARSs). In July 2021, the projects commenced the dissemination of the AIPs. The projects contacted Farm Radio International to achieve uniform dissemination through mass media and monitor the impact on farmers, resulting in this project.

Project goal

The overall project goal is to improve the uptake of AIPs by farmers in Ghana and Nigeria through capacity building and accompaniment of 4 radio stations to produce an effective ICT supported Radio campaigns to all stakeholders on the combination of the use of improved seed varieties, appropriate fertilizer recommendations, and Good Agricultural Practices (GAPs) specific to Agro-Ecological Zones (AEZs) for a given crop.

Specific objectives

- To provide over 700 000 farming families and other stakeholders with appropriate and relevant Agricultural Input Package for specific information about the Agricultural Input Package for Good Agricultural Practices (GAPs) specific to Agro-Ecological Zones (AEZs) for a given crop
- Evaluate the impact of the program in making farmers adopt the AIP, with a target of 300 000 farmers adopting the AIP
- To support the 4 selected radio stations to broadcast Agricultural Input Package program integrated with Good Agricultural Practices (GAPs) specific to Agro-Ecological Zones (AEZs) for a selected crop
- To integrate the radio campaign programs with a mobile based campaign and competitions using the Farm Radio ICT Platform.

Project coverage (regions, districts, communities and selected radio stations)

The project was implemented in eight districts (Tamale Metropolitan, Hohoe Municipal, Garu, Tempane, Sissala East and West, Nkoranza South and Atebubu-Amantin) across five regions (Northern, Upper East, Upper West, Bono East and Volta) in Ghana and Kano, Nasarawa and Oyo states in Nigeria. FRI collaborated and worked with nine radio stations and 25 communities. Tables 1

and 2 below show the regions, districts, communities and the radio stations engaged in this project by country.

Table 1: Ghana regions, districts, communities and radio stations

REGION	DISTRICT	COMMUNITY	RADIO STATION
Northern	Tamale Metropolitan	Jarigu	Radio Savannah
		Juni	
		Tugu	
		Manguli	
Volta	Hohoe Municipal	Wli	Lolonyo FM
		Gbi Wegbe	
		Gbledi Chebi	
		Amele	
Bono East	Atebubu-Amantin	Akokoa	Atoobu FM
		Abour	
		Dobidi Nkwanta	
		Primukyea	
		Asuono	Fabea FM
		Nkwabeng	
		Pruso	
		Amangoase	
Upper West	Sissala East & West	Bandie	RADFORD
		Tasor	
		Jeffisi	
		Sorbelle	
		Pulima	
Upper East	Garu & Tempane	Kpatua	Quality FM
		Nafteen	
		Yabrago	
		Busum	

Table 2: Nigeria regions, districts, communities, and radio stations

STATE	Local Govt Area	COMMUNITY	RADIO STATION
Nasarawa	Lafia	Adogi	NBS
		Chiroma	
	Awe	Azara	
		Kanji	
Kano	Garum Mallam	Ciromawa	Pyramid FM
		Garin Baba	
	Kura	Dalili B	
		Kura Community	
Oyo	Afijio	Abojupa	BCOS
		Idito	
	Iseyin	Agbeloba-Oke Eyin	
		Oremoje/Custom	

Estimated listenership of radio broadcasts

The approach to assess the potential audience of a given station is first based on an estimation of the geographical coverage of that station. To do this, FRI uses a combination of height of transmission tower, power of the transmitter, gain of the transmitter and topographic geography to create the spatial maps showing the coverage of each station. The maps adhere to commonly accepted principles of FM radio signal propagation as shown in the Irregular Terrain Model (ITM), also referred to as the Longley-Rice prediction model (Longley & Rice, 1968)[1]. FRI then overlays the most recent population data obtained from https://www.worldpop.org to estimate the potential audience within that coverage area. The population data can then be filtered in terms of active population (15-64 yrs) living in rural areas.

As indicated in Table 3 below, an estimated 5,306,662 (Ghana 769,593 and Nigeria 4,537,069) men and women listened to the programs on nine radio stations. This estimate is based on the coverage area of the nine stations, as shown in the maps below and the information gathered during the endline evaluation.

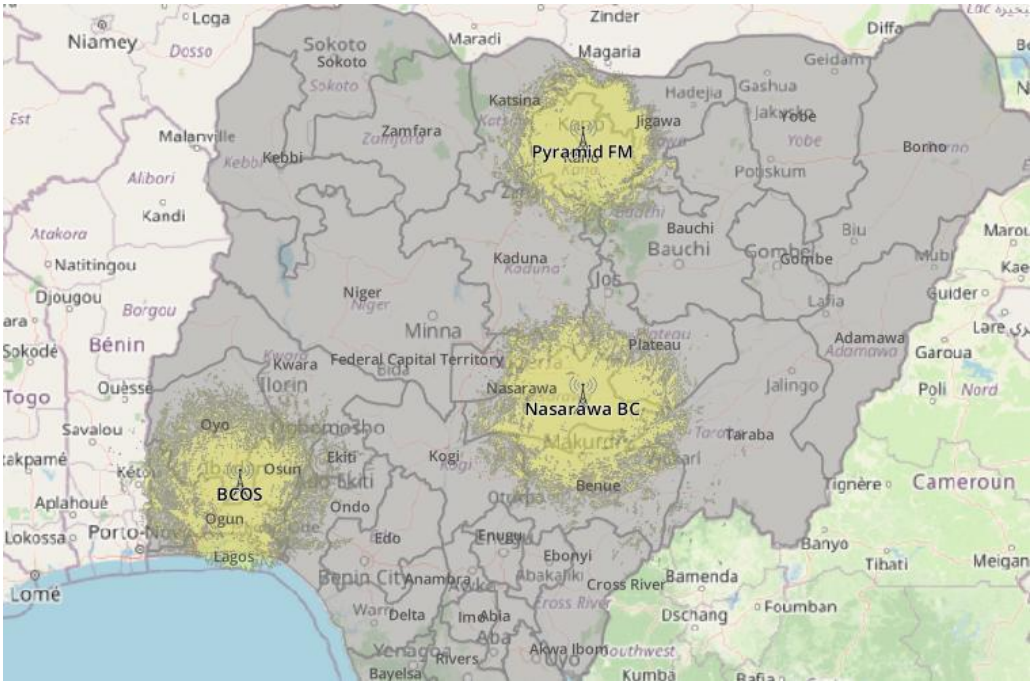
Table 3: Estimated listenership

Radio station catchment area	Total rural working age population	Percentage of farmers that listened to FRI program	Extrapolation of listenership to population estimate
Atoobu FM	171,573	58.6%	769,593
Fabea FM	397,565		
Lorlornyo FM	171,505		
Quality FM	163,815		
Radford FM	38,743		
Radio Savannah	370,098		
NBS covers Nasarawa & parts of Plateau, Abuja and Benue states	2,861,567	47%	4,537,069
Pyramid FM kano andcovers some part of Katsina and Jigawa States	3,656,274		
BCOS covers Oyo & parts of Ogun, Osun and Lagos States	3,135,498		
TOTAL			**5,306,662**

[1] "Prediction of tropospheric radio transmission loss over irregular terrain. A computer method-1968", A. G. Longley and P. L. Rice, ESSA Tech. Rep. ERL 79-ITS 67, U.S. Government Printing Office, Washington, DC, July 1968.This is the model adopted as a standard by both Industry Canada and the United States Federal Communications Commission (FCC) for both FM radio and over-the-air television broadcasts.

Map showing radio coverage in Ghana

Map showing radio coverage in Nigeria



FARM RADIO INTERNATIONAL

2.0 Key project activities and achievements

A summary of the progress made in achieving key project activities is illustrated below

ACTIVITIES	STATUS
Conduct Formative and Baseline Research	Completed
Produce script for the radio program (design document)	Completed
Program design workshop	Completed
Facilitate training program (IST)	Completed
Procure ICT equipment, install and train radio station personnel to use them	Completed
Support the selected radio stations to produce and broadcast the weekly program	Completed
Organize a Monthly quiz competition using the interactive voice system and "beep to vote"	Completed
Quality Assurance	Completed
Field Monitoring	Completed
Final Evaluation of the Project	Completed
Final Report	Completed

2.1 Formative and baseline research

These activities were carried-out in three districts (Tamale, Atebubu-Amantin and Hohoe) across three regions (Northern, Bono East and Hohoe) in Ghana and in Kano, Nasarawa and Oyo States in Nigeria.

Formative Research

The main objective of this activity was to identify information needs of beneficiary farmers which will ensure that the campaign messages and formats address the information needs and preferences of the target audiences.

In addition, the formative research was aimed at building up an in-house capacity (i.e. within each radio station) to conduct this type of research in the form of a 'listenership survey' at various times during the project and beyond. Table 4 indicates the timelines used for conducting the formative research under this project.

Table 5: Timelines for the Formative Research

Ghana

REGION	DISTRICT	COMMUNITY	DATE OF DATA COLLECTION
Northern	Tamale	Jarigu	7th August to 16th August 2022
		Tugu	
		Manguli	
		Juni	
Volta	Hohoe	Wli	7th August to 16th August 2022
		Amele	
		Gbi Wegbe	
		Gbledi Chebi	

Bono East	Atebubu-Amantin	Abour	7th August to 16th August 2022
		Primukyi	
		Akokoa	
		Dobidi Nkwanta	

Nigeria

REGION	DISTRICT	COMMUNITY	DATE OF DATA COLLECTION
Kano	Garum Mallam	Ciromawa	August
		Garin Baba	
	Kura	Dalili B	
		Kura Community	
Oyo	Afijio	Abojupa	August
		Idito	
	Iseyin	Agbeloba-Oke Eyin	
		Oremoje/Custom	
Nasarawa	Lafia	Adogi	August
		Chiroma	
	Awe	Azara	
		Kanji	

Methodology or tools used

The formative research involved desk review, key information interviews (KIIs) stakeholders and focus group discussions with smallholder farmers to identify relevant topics and suitable radio stations for implementation. The FGDs explored group/community level knowledge, practices and attitudes towards radio programs and the dissemination of information on the AIPs to farmers. The KII was geared towards understanding individual level concerns and experiences of radio programs on AIPs as well as understanding institutional cultures and systems that support access to information on farming in the respective target districts and communities.

The formative research was conducted in three ecological zones of Nigeria namely Sudan Savanna, Derived Savanna and North Central and for Ghana, it was conducted in Guinea Savanna, Transition Zone and Semi-deciduous forest.

Formative research results

Ghana

The findings show that farmers' knowledge, attitudes and practices have improved as a result of regular access to agricultural programs on radio across the regions. However, due to the high cost of inputs and the continuous adoption of manual means of farming and the inability to source credit to expand their farms, smallholder farmers still face the challenge of increase in productivity.

Findings across the three zones show that a high number of farmers have access to radio. On average farmers have two radio stations as their preferred choices and mostly prefer listening to the radio in the evening after they return from their farms, usually at 7:00 pm for 30 minutes to one hour. The most preferred and popular radio stations in Bono East are Atoobu FM, Lorlornyo FM in

Volta and Zaa Radio in Tamale. Farmers' preferred languages differ in each region. In the Northern Region, the preferred language was Dagbani, Bono East is Asante Twi and Bono while Volta is dominated by Ewe except for one community that selected Asante Twi.

During the engagement with the stakeholders through KIIs and FGDs, farmers listed critical topics they prefer to be discussed on the radio program. These included:

- Site selection - the type of land to choose in a specific season, considering how the land can hold water, responding to fertilizer application and flood-prone areas
- Land preparation - this includes preparing the land to receive seeds, clearing weeds, burning weeds if possible and removing stumps.
- Pest and disease control - how to scout for pests and to know the kind of pests and diseases in the locality so as to use the required and standard approach of controlling them relating to crops planted. Types of insecticides, pesticides and traditional approaches needed in this practice are also included.
- Fertilizer application - the method of applying fertilizer on the farm to specific plants. The kind of fertilizer(organic/inorganic) to use during the stages of plant cultivation. In the area of maize, farmers mostly use NPK 15.15.15, Urea and Ammonia.
- Weed control - selective chemicals used on the farm before and after germination, accurate plant spacing and traditional methods of control.
- Improving rainwater harvesting so as to retain water in the rice fields
- Using varieties that are resistant to major insect pests and diseases prevalent in the municipality
- Use of appropriate herbicides in the rice fields
- Farmers should plough once at the beginning of the rainy season
- Good drainage allows for early cultivation and better weed control
- Production plan and access to credit

Most farmers in the KIIs and the FGDs preferred radio discussions format with a call-in option to ask questions or seek clarification on topics under discussion.

Key insights from formative research:

- Farmers have some level of knowledge about good agronomic practices but the high cost of inputs is hindering the implementation of these practices
- AIP should be made available and subsidized by the Government to make them affordable for farmers.
- Private entities could also provide inputs to farmers on reasonable terms to ensure a win-win situation (e.g. pre-financing, payment spread over a realistic period etc).
- Radio sets should be made available to encourage community members to listen more to the program in the comfort of their homes and to increase listenership as other household members could also join in listening.
- Apart from the phone-in segment and the interviews, the radio program organizers should endeavor to invite local farmers from various communities to also come over to share their experiences on the program.

- The women always feel happy and proud to hear them being praised by the program because they sometimes see themselves as less important compared to the men.

Nigeria

Preferred stations

Farmers in Oyo state preferred Amuludun, Lagelu FM, Alaga FM and Okeogun mostly because they air interesting programs and had good broadcast signals. Respondents in Nasarawa state preferred NBS, BBC, and Precious FM, while farmers in Kano preferred Freedom FM, Arewa Radio, Dala and Kano Radio.

Preferred Languages of Broadcast

Yoruba language was the most preferred language of broadcast affirmed by the Cassava/maize smallholder farmers in Oyo state during the study. The farmers in Kano and Nasarawa states spoke the Hausa language.

Programme Format Preferences

During the focus group discussions, the following programme formats were highlighted by the respondents: Discussion, phone-in, drama, interviews, and magazine. The respondents' choice of preferred programme format in Oyo, Kano and Nasarawa States all share similarities.

Programme Duration Preferences

The majority of women and men farmers across the study areas prefer listening to agricultural radio programmes that are at least between 30 minutes to one hour. **Preferred Topics**

The agricultural topics indicated by listeners include site selection, land clearing, earthing up, i.e., second ploughing, weeding, planting through improved methods, control of pests and diseases, application of pesticides, particularly to treat the fall armyworm, the application of aflasafe (maize herbicide), financial literacy, harvesting and storage, and market linkages. Value addition was indicated as an agricultural radio topic of interest in Oyo State.

Key insights from formative research:

1. Provision of support to farmers in form of incentives to purchase farming inputs: Smallholder farmers have limited access to credit to purchase agricultural inputs
2. Provision of support to farmers by providing them with solar-powered radio to bridge the electricity and radio battery issues faced by farmers. In providing this support, female farmers should be prioritized.
3. Farmers' perception surveys should be conducted on a quarterly basis so as to assess farmers' level of satisfaction with the radio programme, and also identify emerging farmers' needs to be inculcated into the radio programme. This will ensure effective project and service delivery.

4. Farmers should be provided with adequate information on how to access farm credit from financial institutions
5. Collaboration with agricultural research institutes and other relevant stakeholders to provide best-suited information on respective value chain crop production disseminated through the radio programme.
6. The project team should collaborate closely with extension agents to provide farmers with a physical demonstration of GAPs so as to increase the uptake of these practices by farmers
7. The radio programme should reinforce messages on recommended fertilizer application, land preparation, pests and diseases management control and GAPs consistently until the adoption of standard GAP becomes a norm for farmers.
8. Farmers should be adequately sensitized on the business aspect of agriculture

Baseline Research

The rationale for the conducting of the baseline were as follows:

- To provide information on access to radio and mobile phones, as well as the radio listening behavior of farmers.
- To generate information on the current state and gaps related to knowledge, attitudes, and practices of smallholders in the AIPs.
- To identify farmers' agricultural practices, as well as barriers and enablers for applying AIPs promoted by the IFDC.
- To identify relevant topics for the radio programs based on consultations with IFDC, smallholder farmers and key stakeholders.
- To identify suitable radio stations commonly listened to by farmers to implement the pilot project.
- To assess the potential outreach of the selected radio stations.
- To develop a road map for the implementation of the radio program

Methodology/tools

Both qualitative and quantitative methods were used for this evaluation. Extensive desk review of IFDC documents was carried out to get a better understanding of the scope of the assignment and the key intervention areas. A questionnaire was developed for both Focus Group Discussions (FGDs) and farmer interviews. The questionnaire was reviewed and approved by IFDC before it was programmed into the KoBo Toolbox for deployment. A total of 360 agricultural households were covered in 12 communities across three districts to establish the knowledge, attitudes and practices (KAP) of respondents. Field work was carried out over a twelve-day period across all three project regions/ecological zones from August 8th to 20th, 2022. The enumerators were made to upload their data on a daily basis for routine checks on the server.

The data was exported from KoBo Toolbox Server to MS-Excel for cleaning and data analysis. The quantitative analysis hinged heavily on the completed questionnaires and dataset to obtain information to address the project's objectives.

Table 6: Sample frame for Baseline Survey.

Ghana

REGION	DISTRICT	COMMUNITY
Northern	Tamale Metropolitan	Jarigu
		Juni
		Tugu
		Manguli
Volta	Hohoe Municipal	Wli
		Gbi Wegbe
		Gbledi Chebi
		Amele
Bono East	Atebubu-Amantin	Akokoa
		Abour
		Dobidi Nkwanta
		Primukyea

Nigeria

Nasarawa State	Lafia	Adogi
		Chiroma
	Awe	Azara
		Kanji
Kano State	Garun Mallam	Ciromawa
		Garin Baba
	Kura	Dalili B
		Kura community
Oyo State	Afijio	Abojupa
		Idito
	Iseyin	Agbeloba-Oke Eyin
		Oremoje/Custom

The data collection team was made up of three teams of nine researchers, including two women and seven men (three in each district/zone). Each team was supervised by one researcher who had a constant supervisory role for quality purposes. The teams used handhelds where data collected was transmitted to a central server on a daily basis for data validation and quality checks.

Results

The analysis of the data collected provided key suggestions for the implementation of the project which include:

Ghana

Knowledge

- Farmers still lack knowledge about the appropriate use of some agricultural inputs (spraying of farms, use of protective clothing, etc.) and are unable to discern fake pesticides from genuine ones.

- It is recommended that, where the proportion of farmers lacking some technical knowledge regarding a farming practice is 20 percent and above, strenuous effort should be made to provide them with physical training (i.e. interpersonal contacts, using demonstrations farms, etc.)

Attitudes

- There is an urgent need for attitudinal change as some proportion of farmers/respondents (28%) think it is good but not required to use protective equipment when spraying herbicides, pesticides or insecticides, probably oblivious of the health implications of non-use.

Practices

- There is a need to ensure that agricultural inputs are affordable to farmers as they expressed concerns about high costs yet are willing to pay more for quality seeds if it gives them better harvest.
- Availability of inputs at the right time also encourages usage, thus there is the need to ensure that agricultural inputs are readily available on the market and dealers have an arrangement with farmers to buy on credit or pay over a period of time.

Radio Listening Preferences

- FRI should engage, collaborate, and support the identified most often listened to/popular radio stations in the study area to promote the AIPs initiative. These are Atoobu FM and Atebubu FM (Bono East), Zaa radio and Savannah radio (Northern), Lorlornyo FM and Volta Star (Volta)
- Since the overwhelming majority of farmers obtain agricultural information from radio, FRI would have to design very catchy, educative and interesting programmes regarding AIP to retain and attract more listeners, particularly since most farmers are not aware of FeSeRWAM and the resources therein.
- The majority of respondents prefer radio programmes of AIP with a duration of between 30 minutes and one hour and broadcast on weekday-evenings and Sunday-Evenings.
- In view of the fact that some respondents do not have access to radio, FRI should also explore the possibility of teaching farmers how to access radio programmes using their phones as phone ownership and usage is high in the study regions.
- FRI should explore the possibilities for increasing participation in radio programs as a significant proportion of respondents have never taken part in a radio program.
- FRI should also work towards building radio listening groups as they were found to be minimal in the study areas. Listening groups undoubtedly create a platform for exchange of ideas and healthy discussions amongst people.

Nigeria

1. Support farmers by providing them with solar-powered radio to bridge the gap of lack of access to radio and radio battery issues faced by farmers.
2. The radio program should reinforce messages on recommended improved seed varieties, recommended fertilizer, its use and application, seed selection and GAPs consistently until the adoption of standard GAP becomes a norm to farmers.

3. The selection of a suitable broadcast time for an agricultural radio programme will go a long way to get the renewed attention of farmers, especially when the topics meet their needs.
4. Adequate training should be provided to farmers to ensure that they are technically empowered on the use of AIPs to boost their activities in the selected value chain crop.
5. The effectiveness of radio listening groups should be reiterated to farmers because it serves as a platform for the exchange of ideas and information towards improving the uptake of good agricultural practices for agricultural development.
6. Farmers need to be reoriented on the need for PPE during fertilizer application as it prevents the risk of exposure to hazardous chemicals.

2.2 Radio station selection and engagement

Field visits and other FRI methods of identifying and engaging appropriate radio stations led to the selection and engagement of nine radio stations namely Radio Savannah, Quality FM, RADFORD FM, Atoobu FM, Fabea FM, Lolonyo FM all in Ghana and in Nigeria BCOS Oyo, Pyramid FM Kano and NBS). Memoranda of understanding were signed between FRI and these radio stations.

In Ghana, six radio stations were selected because the initial three stations that were stated in the contract couldn't cover all the agroecological zones and the specific crops being addressed by the project. Also during the formative research community members preferred to listen to radio stations that were located in their district rather than regional stations.

2.3 Radio program design workshop and script (design document)

An Interactive Radio Component Design workshop was held in Abuja and Accra. The Nigeria workshop was organized from July 25 to 27, 2022, while that of Ghana took place from July 28 to 30, 2022 respectively.

Achievement: The outcome of the radio design workshop was the development of a detailed interactive radio strategy outline/design document that promoted the Agricultural Input Packages (AIPs), the FeSeRWAM platform, crops and agroecological zones as covered by the selected stations. This resulted in the 32 hours of total live and repeat broadcast per each radio station.

2.4 In-station training

Target and training lessons: The in-station training for radio broadcasters was intended to strengthen their research, design, production and broadcasting skills on farmer programs. This was to ensure the production and broadcast of impactful PRCS according to the VOICES standard. The target was to engage nine radio stations in a total of six days training session engaging 33 participants across the 2 countries. They were made up of 16 men and 3 women, while in Nigeria, 14 broadcasters, 9 men and 5 women participated in the training

Immediate output: 33 Broadcasters selected from 9 radio stations were trained for a total of 6 days each during the project period. Trainees were made-up of 8 women and 15 men.

Achievement: The in-station training strengthened the capacity of broadcasters to design and broadcast radio programs based on the Agro Input Packages (AIP), FeSeRWAM platform, agro

ecological zones and the value chains in the zones. The in-station training looked at one subject area on a daily basis to allow for understanding, feedback and interaction between participants and the facilitators. A total of 288 hours of radio programs were broadcasted to beneficiary farming communities in both Ghana and Nigeria. Topics broadcasted in at least one local language by each radio station in the project regions.

The partner radio stations also produced and broadcasted 23 radio spots and jingles in different local languages across the selected regions in both countries.

2.5 ICT installation/set-up and training

The ICT training was inculcated into the entire in-station training to equip broadcasters with skills to access and promote the usage of the Uliza platform by beneficiary farmers.

Immediate output: In the nine partner radio stations, a total of 33 broadcasters were trained for the ICT component of the In-Station Training. The broadcasters trained were made-up of 25 males and 8 females.
To enhance the production and broadcasting of quality interactive radio programs, the nine stations were equipped with two (2) laptops (one for each country)and six (6) Mobile Wifi devices were purchased for the radio stations in Ghana to enable them to produce and broadcast the radio programs.

Achievement: The Uliza platform was installed in each partner radio station which enhanced their monitoring of the beep to vote polls and other interactive services designed into the radio programs aired. Seven circuit switch numbers (Uliza numbers) were assigned to the radio stations per the ecological zone they fall under. The Uliza system was setup with poll content in seven languages (Kusaal, Sisaala, Twi, Dagbani and Ewe) in Ghana and (Hausa and Yoruba) in Nigeria for all sixteen (16) episodes. Broadcasters were trained on how to use digital tools to achieve interactivity in their radio programs and also submit logs.

Overall, a total 30,317 (17,127 in Ghana and 13,190 Nigeria) interactions (with farmers) were captured from the nine radio stations through the weekly voice poll surveys on the Uliza system.

2.6 Production and broadcast

Target for production: The nine radio stations produced appropriate and relevant agricultural input package information to farmers with particular emphasis on soybean, maize, groundnuts, yam cassava, sesame and rice cultivation. These were done through the design of Participatory Radio Campaigns (PRCs).

Output: 16 episodes produced per each station during the period. Each partner radio station broadcasted 1 hour live program and a repeat version per week in the preferred local language indicated by farmers.

Achievement:

- Radford FM - Six radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- Radio Savannah - Six radio spots designed and produced. Aired two days a day and for four months, for a total of 16 broadcasts.
- Quality FM - Six radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- Fabea FM - Six radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- Atoobu FM - Six radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- Lorlornyo FM - Six radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- NBS FM - Three radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- Pyramid FM - Three radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.
- BCOS FM - Three radio spots designed and 3 produced. Aired two days a week for four months, for a total of 16 broadcasts.

A total of 144 episodes were broadcast by the partner radio stations which reached an estimated 5,306,662 small-scale farmers across the two countries with relevant agricultural input packages for soybean, maize and rice production.

2.7 Quiz competition

The AIP program series incorporated quiz competitions in every week's episode to help upscale knowledge around the agricultural input packages. Participants drawn from the Uliza platform answered questions developed around the topic for discussion. Each participant was given a minute to participate in the quiz competition for the week. Winners were awarded prizes.

2.8 Quality assurance of radio programs including interactivity

This included checking conformance of presenter synopsis and log sheets with designed outline and evaluation of the audio files using the FRI VOICES standards. Weekly feedback was provided to the nine radio stations to improve the quality of the programs.

Monitoring the Uliza system: Information recorded as a result of monitoring interactivity with beneficiary farmers during live radio program sessions and off-air periods yielded the following results in table 7.

Table 7: Uliza System Monitoring Data

INDICATOR	TARGET	RESULTS
# of interactions with IVR over the lifetime of the broadcasts	25,000	30,317 interactions were captured from the nine radio stations through the weekly voice poll surveys.

# of respondents (unique individuals) who interacted with the Uliza system over the lifetime of the broadcasts	4000	6,123 unique individuals interacted across the nine radio stations through the weekly voice poll surveys.

2.9 Field monitoring

Monitoring Activities

Monitoring visits were conducted weekly by radio broadcasters to project communities. The FRI project coordinating team together with the IFDC team also embarked on monitoring visits to six project communities and two radio stations in Ghana and Nigeria and interacted with farmers, input dealers and the Department of Agriculture to assess the progress of the project. Monitoring reports were shared with IFDC.

Monitoring Outcomes

Monitoring visits to project communities: Broadcasters visited farmers on a weekly basis to collect their voices on specific topics and also recorded success stories which were shared on live radio shows. FRI Project and IFDC monitoring teams also embarked on visits to some project communities and recorded success stories on how some farmers were applying the agricultural input packages information to their farming activities.

2.10 Outcome evaluation

The evaluation was conducted in both Ghana and Nigeria.

Evaluation objectives

The overarching aim of the final evaluation was to assess the progress and impact of the AiP project against the baseline situation. The specific objectives included:

- Determine the level of the listenership of radio programs to each radio station involved in airing programs amongst on the AIPs
- Assess the impact of the radio program on knowledge, attitude and intention to practice during the next season.
- Assess differences in knowledge, attitude and practices between:
- (i) listeners and non-listeners of the radio program
- (ii) baseline and endline listeners,
- Provide success stories and field stories including failures/poor results
- Detail significant challenges encountered during implementation
- Assess the potential and actual changes as a result of the program

Methodology

The evaluation utilized qualitative and quantitative methods of collecting primary data, and desk review to gather secondary data, in order to minimize the limitations of any individual research

method. This is because the design of the evaluation was 'participatory' by reaching out to all key stakeholders to have their views, opinions and suggestions to inform the evaluation.

In Ghana, a total of 425 agricultural households were covered in 12 communities across three districts to find out changes in knowledge, attitudes, and practice (KAP) of respondents in relation to the AIP. An average of 30 household surveys were conducted across each of the 12 communities. Farmers surveyed were involved in the cultivation of different crops and the sampling approach took into consideration the wide range of experiences in farming. Whereas the same set of questions were asked, a conscious effort was made to make references to practices applicable to the targeted value chains of the baseline study. Maximum variation and heterogeneous purposive sampling approaches were used to select individual farmers. This helped to capture different characteristics of farmers such as residence (rural-peri-urban), age, marital status, educational level, the scale of farming activities and challenges, among others.

In Nigeria, A total of 418 respondents were reached for the survey in Kano, Nasarawa and Oyo States. The distribution of respondents by LGA is shown in the tables below: The LGAs were selected based on a large number of farmer-producing groups, and ease of accessibility.

Sampling Distribution for the Survey in Nigeria

Location	LGA	Communities	No. of respondent	Total
Kano	Garun	Ciromawa	26	46
	Mallam	Garin Baba	20	
	Kura	Dalili B	26	53
		Kura Community	27	
Nasarawa	Lafia	Adogi	73	136
		Chiroma	63	
	Awe	Azara	22	52
		Kanji	30	
Oyo	Afijio	Abojupa	22	44
		Idito	22	
	Iseyin	Agbeloba-Oke Eyin	43	87
		Oremoje/Custom	44	
Total				**418**

The Sample selection was based on communities that mostly cultivate the respective value chain crops (rice, maize, cassava and soybean). Localities/ communities were the Primary Sampling Units (PSUs). Each community was regarded as a cluster. Identification was made based on the probability percentage of the population of farmers engaged in the cultivation/production of selected value-chain crops. Communities that were inaccessible due to security problems were excluded. The Secondary Sampling Units (SSUs) were the households in the selected localities/clusters. The selection of farmers in each community involved Simple Random Sampling (SRS) procedures, as follows

Tools and method of data collection

The evaluation was conducted mainly through both Focus Group Discussions (FGDs) and farmer interviews. The questionnaire went through several review processes before it was approved by IFDC. The farmer interview questionnaire was programmed electronically using KoBo Toolbox and was deployed into the KoBo Collect application for data collection.

Evaluation Team, Ghana

The endline study comprised three teams of nine researchers, including two women and seven men (three in each district/zone). Team One was stationed and worked in the Hohoe township and neighbouring communities in the Volta Region. Team Two was stationed and worked in the Atebubu township and surrounding communities in the Bono East Region, and Team Three was stationed and worked in the Tamale township and surrounding communities in the Northern Region. Each team was supervised by one researcher who had a constant supervisory role for quality purposes.

Training of Enumerators: A one-day training session was organized to prepare the field teams for data collection. The training took place on Thursday, December 22nd. The training session focused on the appropriate administration of data collection instruments and probing techniques. The training session also included ethical considerations relating to obtaining participants' consent and ensuring gender sensitivity during data collection.

Field data collection and data quality monitoring: Following the successful completion of training, fieldwork was carried out over a 10-day period across the evaluation areas from December 27th to 7th January 2023. The enumerators went into the selected farming communities and identified the specific farmers with the help of agriculture officers and some lead farmers in the communities. The enumerators uploaded their data daily for routine checks on the server to reduce errors and to provide timely feedback on the progress of data collection

Data analysis and reporting: The data was exported from KoBo Toolbox Server to MS-Excel for cleaning and data analysis. The quantitative analysis hinged heavily on the completed questionnaires and dataset to obtain information to address the project's objectives. This included types of crops cultivated in the communities, farmers' main crops, general knowledge of best agricultural practices, attitude and practice questions, and radio listening habits. The indicators were disaggregated across gender, the major crop cultivated, educational levels, regions and listenership. Tables and charts were generated, and the results were used to prepare this report.

Evaluation Team, Nigeria

The endline survey was made up of three teams of twelve researchers, four for each zone/state. Each team was stationed in Oyo, Nasarawa and Kano state. They were all supervised by the researcher including the FRI monitors working in those areas who were also part of the enumerator's training.

Training of Enumerators: A 2-day training session was provided to enable enumerators and field supervisors to effectively administer the survey tool. The training was intended to familiarize the enumerators with the project, the sampling procedures, and the survey tool. Subsequently, pilot testing was carried out, familiarizing the team with the data collection tool and digital data collection platform. Detailed records of recommendations were kept and incorporated before the instruments were uploaded to the online platform.

Field Data collection and data quality monitoring: At the end of the training, enumerators went to the field for a ten day evaluation across the target areas starting on the 10th to 19th January, 2023. With the assistance of some of the leaders, extension workers and FRI monitors, target farmers were reached and feedback immediately uploaded to avoid delays.

Data analysis and reporting: Following the pre-test of the tools, the field team commenced the actual data collection process. Data collection for the household survey was undertaken by using KoBo Collect, a Computer Assisted Personal Interviews (CAPI). This enabled the enumerators to administer questionnaires via mobile phones and tablets.

A total of 418 respondents were surveyed in the study locations of which 198(47%) were listeners of the radio program while the remaining 220 (53%) were non-listeners. Of the total number of respondents surveyed, 57% were aged 30 and above, while 43% were between the ages 15-29 years. The male gender constituted the majority of the respondents (61%) while only 39% of the respondents were females. In terms of educational attainment, only 15% of the respondents have not attained any formal education, meanwhile 40% have completed secondary education. The educational characteristics of respondents suggest that a vast majority have a high potential to access various sources of agricultural information, having completed some level of formal education.

In assessing the gender of the head of households, only a few (6%) were females, while the majority (94%) were males.

Summary of evaluation outcome/results

Nigeria

The crop value chains assessed include soybean and rice in Nasarawa State; cassava and maize in Oyo state; and rice and maize in Kano State. Although the gender distribution of the respondents was slanted towards men, women accounted for 39% of respondents. Also, the age distribution of the respondents was 43% for respondents between ages 15-29 and 57% for respondents aged 30 and above, revealing a considerable representation of the youthful population.

Radio Listening Habits: Overall, the endline showed that the majority of the respondents in Kano (63%), Nasarawa (48%), and Oyo (35%) states listened to 4-7 episodes of the radio program. episodes, and 23.7% heard 9-12 episodes of the radio program, indicating a medium to high intensity of listenership. Aggregately, 60% of the respondents reported discussing the topics with others. Respondents evaluated the radio program by indicating their levels of agreement with six statements about the quality of the radio program. A majority of listeners strongly agreed that they benefited from the experience of farmers who participated in the radio show (72%). A majority also strongly agreed that the information provided was relevant or useful (70%); that the technical quality of the radio program was high (69%); and that the program was entertaining (66%).

General knowledge about maize farming: Overall, only 13% of the respondents were able to identify at least two of the improved maize varieties. The findings disaggregated by listeners and non-listeners indicates that more adequate responses were provided by listeners (16%) than non-listeners (11%). In comparison between listeners in the endline and the baseline result, the

endline results showed a significant improvement from the baseline as only 1% of the respondents in the baseline responded accurately, indicating that the radio program may have contributed towards improving farmers' knowledge of recommended improved maize varieties.

Farmers' knowledge of recommended use and application of fertilizer was also assessed. Respondents provided responses whether true or false as to 'whether the best fertilizer to apply in a maize farm for the first fertilizer application is NPK 15-15-15'. The appropriate response is 'false' as the recommended fertilizer application is NPK 20-10-10. Overall, the endline indicates a decline from the baseline as none (0%) of the respondents provided the correct response amongst listeners and non-listeners.

General Knowledge about Rice Farming: To gauge their level of understanding, farmers were asked to respond to questions relating to the use and planting of improved seed varieties and the use of recommended fertilizers and their application. Respondents were asked to choose from a list of multiple-choice responses which included two improved rice varieties (Faro 66 and UPIA 3). Respondents were deemed to have provided the correct answers if they were able to identify the two listed improved rice varieties. Findings from the endline indicate that none (0%) of the respondents answered correctly (had adequate knowledge of the recommended improved rice varieties). As regards the appropriate time for the first application of fertilizer on the rice farm, majority of the respondents (99%) in the endline were fully aware of the appropriate timing having answered correctly (true) when asked 'True or false, the right time for the first fertilizer application on your rice farm is 2-3 weeks after planting'. The endline findings indicate an improvement from the baseline.

General Knowledge about Cassava Farming: In Oyo state, the survey assessed the knowledge of good agricultural practices among cassava growers. Farmers were assessed on their knowledge of improved seed varieties and the application of recommended fertilizers on their cassava farms. Respondents were asked to choose from a list of multiple-choice responses which included four improved varieties (TME 419, Obasanjo ii, Dixon, and Game Changer). Respondents were deemed to have provided the correct answers if they were able to identify at least two of the improved varieties. The endline results indicate increased uptake of improved cassava varieties as 59% of the total respondents responded correctly (had adequate knowledge of the available recommended cassava varieties). Additionally, more accurate responses were recorded for listeners (69%) than non-listeners (49%), and the results showed improved knowledge compared to the baseline findings where only 46% of the respondents responded correctly. Farmers' knowledge of fertilizer use and application was also assessed. As regards the recommended time to apply fertilizer on the cassava farm after planting, the majority of the respondents (93%) had inadequate knowledge of the recommended standard practice. Only about 7% of the respondents in the endline answered correctly (8 weeks) when asked "how long after planting is it recommended that farmers add fertilizer". The endline results also indicate a decline from the baseline.

General Knowledge about Soybean Farming: As regards the recommended improved soybean varieties, findings from the endline revealed that listeners (54%) were more aware of the recommended soybean varieties than non-listeners (30%), as observed from the responses disaggregated by listeners and non-listeners. Only 28% of respondents responded correctly in the baseline compared to the 54% of listeners who provided accurate responses in the endline,

demonstrating a significant improvement from the baseline, and also suggesting that the radio program may have improved farmers' understanding of recommended improved soybean seeds.

Attitudes: Of farmers' attitudes towards good agricultural practices, the survey findings revealed that the majority of the respondents agreed or strongly agreed that they would pay more for good quality seeds if it will result in a better harvest. In the endline, more listeners (71%) strongly agreed than non-listeners (69%). The endline result indicates an improvement from the baseline implying that farmers are beginning to attribute more value to the use of quality seeds.

Notably, there were factors that hindered changes in farmers' knowledge, attitude, and practices; they include late implementation of the radio program, lack of access to credit facilities and inflation, which has led to the increase in prices of goods and services (including fertilizers, pesticides, and seedlings). On the potential and actual changes as a result of the radio program, the AIP radio program fostered real-time conversation on AIPs and good agricultural practices, and farmers, broadcasters, agricultural extension agents and other critical stakeholders affirmed that the AIP radio programming has been very educative, supportive, and impactful. Overall, rural farmers now possess working knowledge of good agronomic practices and how these practices can be effective in diversifying or boosting their agricultural yields.

Generally, listeners had largely positive opinions of the radio program, indicating a high level of audience satisfaction. The majority of listeners agreed with statements which indicated that the program gave farmers a voice, that the information on the program was relevant, that the program was technically sound, that the program was entertaining, and that the host effectively addressed farmers' concerns. Based on the endline results, a significant improvement from the baseline was recorded as regards knowledge of recommended improved seed varieties amongst maize, cassava and soybean farmers. The improved knowledge was predominant among listeners, indicating that the radio program may have positively influenced attitudes towards recommended practices. As regards the recommended fertilizer application, there were slight declines in knowledge from baseline to end-line.

Ghana

The results reveal that 59 percent of respondents (249) listened to the AIPs radio program compared to 41 percent (176) who did not. Patronage of the radio program was highest in the Volta region (64.7%) but lowest in the Northern region (54.7%) Table 1 refers. The three most important sources of agricultural information, namely radio (66.1%), family friends, and neighbours (64.2%) and extension services (60%) in that order. Printed materials, social media and traditional but outmoded methods taught by parents which fall in the "Other" response category are the least used sources

Regional breakdown of radio listeners and non-listeners

Region	Listeners	Non-listeners	Total	% Listeners	% Non-listeners	%Total
Bono East	87	66	153	56.9%	43.1%	100%
Northern	76	63	139	54.7%	45.3%	100%
Volta	86	47	133	64.7%	35.3%	100%
Total	**249**	**176**	**425**	**58.6%**	**41.4%**	**100%**

Household headship: The analysis revealed that a significant proportion of household heads are men (78%) as against women (22%). Additionally, four out of ten household heads have never been to school whilst 25 percent have completed Junior Secondary school and another 10 percent did finish senior secondary school

Major crops produced by farmers: The farmers cited maize (49.4%), rice (28.0%), cassava (7.8%), soybean (6.1%), cocoa (3.3%), cowpea (2.8%) and others (2.6%) as the main crops they grow. Across the regions, farmers in Bono East are the ones into the production of maize, cassava and cowpea in that order. In the case of the Northern region, rice, soya bean and maize are predominant. Maize, rice, and cocoa are the main crops cultivated by farmers in the Volta region.

General knowledge of Good Agricultural Practices

Identification of fake pesticides: The responses show that over one half (i.e., 54%) have no idea or do not know the indicators. The remaining respondents had some fair knowledge about fake pesticides such as No expiry dates (23.5%); It has few or no instructions (17.4%); No manufacturers logo (14.4%); and there is no batch number (5.9%) amongst others.

Weeding: A higher proportion of women found to be ignorant about weeding crop plants when flowering (25.2%) compared to men (23%).

Chemical fertilizer Usage: 58 percent knew that fertilizer should not contact the seed when added to planting holes, and the remaining 42 percent displayed poor knowledge as they got the answer wrong (this group includes those who did not know and those who responded wrongly to the statement). In terms of gender, a higher proportion of females (46.4%) displayed poor knowledge than males (39.1%).

Practices of good agricultural practices

The data showed that most of the farmers are particular about avoiding any broken or crushed seeds (72%), followed by selecting whole seeds (62%) and free from infection (54.1%). Some 44 percent will consider sowing seeds of high quality, whiles others (42.4%) claim they consider the high germinating capacity of the seed

62 percent of farmers do wear protective equipment as though some 11 percent do not. About 28 percent do not apply pesticides themselves as they hire the services of others/operators. The results also indicate that a higher proportion of AIPs radio listeners (65.6%) wear protective clothing than non-listeners (55.7%). From the data, 262 (61.6%) of the farmers who sprayed their farms themselves, the majority use long pants (26%), long sleeves shirts (25%), rain boots (24%) and masks (19%) in that order. Wearing of gloves and goggles was reported by some 13 percent whiles 1 percent (3 persons) sprayed without using any protective equipment

Results from the survey indicate that 76 percent of respondents were not aware of FeSeRWAM. This means some 24 percent were aware of it, and the awareness about FeseRWAM is tilted more in favour of radio program listeners (34.1%) than non-listeners (10.2%). A significant majority of respondents (82%) who reported being aware of FeseRWAM attested to the fact that FeseRWAM and AIP provide information on the most requested improved seeds to help farmers improve their yields

(Table 56). As to be expected more radio listeners (82.4%) attest to this fact than non-listeners (77.8%)

General findings:

The survey findings indicate that the radio program was effective in inspiring the use of AIPs and GAP. The percentage of listeners who started using various improved agricultural practices suggests that the radio program played a role in informing these decisions. Notably, there were factors that hindered changes in farmers' knowledge, attitude, and practices; they include late implementation of the radio program, lack of access to credit facilities and inflation, which has led to the increase in prices of goods and services (including fertilizers, pesticides, and seedlings). On the potential and actual changes as a result of the radio program, the AIP radio program fostered real-time conversation on AIPs and good agricultural practices, and farmers, broadcasters, agricultural extension agents and other critical stakeholders affirmed that the AIP radio programming has been very educative, supportive, and impactful. Overall, rural farmers now possess working knowledge of good agronomic practices and how these practices can be effective in diversifying or boosting their agricultural yields.

There is a need for more education on pesticides as only 6 (1.4%) respondents out of 425 were able to list 4 or more correct indicators of a fake pesticide. There was poor knowledge displayed by cocoa farmers (85.7%), in relation to rice farmers (18.5%), maize farmers (25.7%), and cassava farmers (36.4%). There wasn't any significant difference between listeners and non-listeners of the AIPs radio program.

Reception of radio programs in some project communities was hampered by network challenges. Nonetheless, residents often gathered at designated points in their communities to listen to the programs because of the importance they attach to them. Out of 249 respondents, 138 (i.e. 55.4%) reportedly listened to the AIPs radio programs aired by radio stations in their communities/districts. Apart from the Volta region where the proportion of listeners was very high (94.2%), Bono East and Northern recorded less than 40 percent. A significant percentage (89.1%) listened to at least some of the episodes and this cuts across the three regions with Volta on top. The remaining 11 percent who did not listen to any of the episodes, cited various reasons for their inability to do so. In descending order of importance, these include inconvenient timing of the broadcast (46.7%), poor signal (26.7%), and lack of interest in the program (20.0%). Some 7 percent did not patronize the radio program because they could not afford batteries for their radio sets.

The formation of radio listening groups creates a conducive platform for listening purposes, exchange and sharing of ideas. It allows individual farmers to seek clarification from their peers and persons who have understood the episodes/topics under discussion. Unfortunately, only one-third (33%) of respondents belong to a radio listing group with Volta far ahead of the other two regions. All stakeholders in the AIPs FRI/IFDC project may have to put their resources to whip the formation of radio listening groups, especially in Bono East and Northern regions where the numbers do not look encouraging.

As a result of implementing the various project initiatives, 5,306,662 farmers were reached with radio information on appropriate and relevant agricultural input packages for the cultivation of rice, soybean and maize against a planned target of reaching 700,000 farmers.

3.0 Success stories from the field

A broad range of success stories indicating the level of satisfaction for women and men farmers, were carefully documented. Some are presented below.

Ghana

Muyem Francis (Farmer)

Muyem Francis, also referred to as Democracy, is a maize farmer who resides in a community called Abour in the Atebubu-Amantin Municipality. He expresses his joy at how well the knowledge he has gained from the radio program has been beneficial to him. He is now able to know how to purchase certified seeds such as maize and rice at the appropriate place. The program taught him to identify and purchase certified seeds for cultivation. This prevents him from purchasing non-certified seeds from the market at the same price as the certified seeds and through the program, he has been informed of accredited outlets to purchase certified seeds and fertilizers.

In addition, he has learnt that the broadcast method, also known locally as *"all die be die,"* is not the appropriate way to sow seeds but rather by planting them in rows to increase yield. He has clearly seen the difference between the old farming practices and the new.

He has also discovered that dressing appropriately like wearing protective clothing before spraying his farm helps to safeguard his health and spraying along the direction of the wind also prevents him from inhaling the chemicals.

He expresses his joy for winning the quiz competition on the AIP program as it tested his knowledge on the lessons shared on the program. He is grateful to the sponsors of this program USAID, IFDC, CORAF, FRI and Atoobu FM and other partners that helped to put together this program.

Yaa Sarah (Farmer)

Yaa Sarah owns three acres of land on which she cultivates maize and she hails from Premukyea in the Atebubu-Amantin Municipality of the Bono East Region of Ghana. She recounted her experiences with the AIP program on Atoobu FM which has enhanced her knowledge of good agricultural practices.

According to Sarah, as a result of listening to the radio program, she has gained knowledge in how to apply fertilizer. She has since moved away from the broadcasting method of applying to the practice of dibbling (digging a hole next to the crop and placing the fertilizer inside of it).

Sarah is now aware that she needs to put on protective clothing before spraying and that she should always spray into the wind.

Sarah has this to say ***"women in my community have benefited greatly from the program. They are now aware of the appropriate farming practices".*** Even though they are yet to harvest their produce for the minor season, comparatively, this season's harvest will be much better than the previous years. She is now very hopeful of making enough money to feed and cater for her family.

Yaw Gyaako (Agricultural extension officer)

Yaw Gyaako works as an agricultural extension agent for the Department of Agriculture in the Atebubu Amantin Municipality. He serves as one of the resource persons for the AIP program on Atoobu FM. In the program, he educates farmers on where to purchase certified seeds and fertilizers, as well as teaches them about appropriate agronomic practices. Certified seeds, fertilizer, and appropriate agronomic practices all contribute significantly to improve yields.

He has observed a substantial difference between the AIP broadcast and the other agricultural programs, which were broadcast on Atoobu FM before the AIP program. The AIP program according to Yaw provides farmers with access to authorized input dealers, certified seeds, and accredited agricultural extension officers' instructional resources. Only agronomic practices were the emphasis of the other program.

The AIP program also includes a package known as Fersewam. Fersewam is a platform that gives farmers access to all the information they need, including guidance on planning, row planting, seed selection, fertilizer application rate, storage, controlled bush burning, where to get certified seeds, farm management, and post-harvest management. He mentioned that whenever he is planning on conducting training for specific communities, he always visits the website to acquire information. He extended his gratitude to the program's sponsors, including Farm Radio, IFDC, USAID, Atoobu FM, and Coraf, for providing him with the chance to educate farmers.

COSMOS ADU

For the past five to six years, Adu Cosmos has worked as a radio host at Atoobu FM. He has observed a significant distinction between the AIP project and the regular farmers program they used to do as co-host of the farmers show for all these years. The Fersewam platform, where farmers can go to receive knowledge on everything they need to know about farming, including advice for fertilizer application, improved seeds, and how to manage their farms for a sufficient return, was the first distinction he noticed.

He noted how simple their work has been because of the Uliza platform. The Uliza platform ensures that the crew is not interrupted by calls while broadcasting live. At a time of their choosing, the farmers address the platform with questions and comments. He claimed that hearing their voices on the radio makes farmers very happy and motivates them to engage more. On the show, the extension officers from MoFA have occasionally helped them to instruct farmers on excellent agronomic methods. The quiz competition is one of the program's intriguing features. The fact that eighteen (18) people took the quiz and won prizes encourages the farmers to tune in so they can win as well.

His conclusion that the AIP project is having a positive impact is based on the success stories that were told to him on the ground. The farmers relate how they now understand how to fertilize their land properly and where to find improved seeds. Additionally, he mentioned that since beginning the AIP program, he has learned a lot about himself as a radio host. He has now begun farming as a result of the knowledge he has gained from the program. He thanks Farm Radio, IFDC, USAID, Feed the Future, The Hunger Project, Food Security Initiative, the management of Atoobu FM, and his team members who are the program's sponsors. Additionally, he pleaded for the show's continuation in order to maintain listenership.

Nigeria

Yusuf Alimanani

My name is Yusuf Aliminani from Obi local government area of Nasarawa State.I have been a farmer for the past 18 years. And I have been farming the way my father did while he was still young. Despite following my father's instructions my yields have always been small(just for the family and little for sales).

Because of that, I started looking for ways to help increase my yield, and then my friend who moved to Keana who was always complaining about his farm stopped. When I asked him he told me he now has proper knowledge of how to cultivate his rice and more yield. When I asked him how he referred me to the program Aziki na gona on NBS

Truthfully, that was not the answer I was expecting, but after I listened once I knew I was farming my rice the wrong way. From there on, I started listening to the program and I can boastfully say that I know when to apply fertilizer, how to apply it and the required source or rate. In fact, those problems that looked very difficult on my farm before, I am the one now teaching some people in Kokona where we have our farms how to apply fertilizer, where to buy from and the rate. I also know how to apply pesticides and herbicides.

Trust me, the program has made farming easy and interesting and my yield is already looking very promising(I will be harvesting my rice next week)

Halimat Abubakar

My name is Halimat Abubakar from Alogani Center in Nasarawa Eggon in Nasarawa State, I have been farming alongside my husband for the past 10 years. I have noticed recently that our approach to farming has changed, first my husband makes reference to a website called Ferswam and our planting of rice has changed from broadcasting to planting seed per hole.

Also, at a personal level, I have learnt through the program arziki na gona on NBS 97.1 FM something I have taught a few women. Initially, when we apply herbicides, we use the containers for storage of food which we were taught in the program is harmful to our health.

But now we properly dispose of the containers and we wash the clothes and other items we wore when we go to the farm and apply fertilizer.

Fertilizer application for Double Yield

I am Chief Olaniyi Adeyemi, 83 years of age, a retired teacher and now a farmer in Olodo Ibadan, Oyo state.

I started farming cassava when I retired from the civil service 18 years ago. My major challenge has been low yield due to either disease or other issues I do not fully understand. This has put untold hardship on me and my family because we depend on the proceeds from the farm to eat, sell and pay other bills.

A drastic change happened to my farm as soon as I started paying attention to the farmer radio program on BCOS Oyo State in the last few months by FRI/IFDC. For me I did not know the importance of fertilizer application. I belong to the school of thought that felt there was no need to add fertilizer on my farm simply because our soil is fertile in this part of the country and to my knowledge, what we have as yield was still manageable.

But when I started listening to the program 'Agbedotun' and I followed the step-by-step approach to fertilizer application, I was amazed to see that my yield doubled. Now to an extent, I can pay certain bills by myself while I make efforts to do more to get more.

Thank you for all you have done FRI. God bless you to do more.

Too many calls from farmers

My name is Olaitan Adeniyi, a Radio/TV presenter, producer, and Newscaster on Broadcasting Corporation of Oyo State (BCOS). I have been a presenter of Agbedotun, an Agric programme sponsored by GIZ/FRI for 3 years now. This is not to blow my own trumpet but I must confess that I am a seasoned broadcaster with lots of experiences spanning over a decade.

My experience with the IFDC/FRI radio program on our station has taught me a lot of lessons.

Before now, yes we had callers on the program who called to contribute to topics during our broadcast, but we never had more than 8-10 people per episode and that will be all till another week.

This time, the case was different. I have never had this much traffic of callers since I started broadcasting who kept bombarding my phone saying they learnt so much on a single program and they kept the calls coming sometimes on-air and more off-air.

With the introduction of the quiz into the program, the situation became more than we could handle as a team which made the station management to start contemplating adding extra time to this particular program by FRI/IFDC.

This gave me joy and fulfillment. I am proud to be part of the system. I am a better professional. Thank you

4.0 Challenges to project implementation

In spite of the recorded achievements of this project, there were a couple of limitations that are worth noting for future planning and execution of similar interventions. From the perspective of beneficiary farmers, these were the limitations they experienced:

- The farmer/herder conflict affected the harvest or yield of most farmers from Asakio in Nasarawa State.
- The program time was insufficient to discuss extensively on the topics in the studio
- The time of broadcast was not convenient for some farmers especially women
- For the quiz, those who won from a distance could not access their prizes due to transportation cost.

5.0 Lessons learned

Some valuable lessons recorded or learnt in the course of implementing this project are worth sharing and these are presented as follows:

- Farmers place value on agricultural information shared by radio stations as confirmed by an input dealer in Atebubu who stated that farmers normally rush to his shop to buy products after a radio program.
- The quiz aspect introduced in the program made the program highly interesting and participatory
- It also made the sessions very competitive so as to win the prizes as a result knowledge is increasing and making impact
- Input dealers are interested in supporting the programs resulting in their sending branded gift items for the winners

6.0 Summary and conclusion

The collaboration between Farm Radio International and nine radio stations in this project execution was intended to contribute to the AiP project by communicating effectively with tens of thousands of farmers through radio. This is done by adapting and delivering training programs for broadcasters as well as helping design and broadcast specialized interactive radio programs that share knowledge and give smallholder farming families opportunities to advocate for their interests.

The project focused on improving the rice, soybean, and maize value chains by strengthening the agricultural input packages in Ghana and Nigeria. The goal is to improve the uptake of AIPs by farmers in Ghana and Nigeria.

In conclusion, sharing appropriate and relevant agricultural input package with small-holder farmers has proven to be beneficial to their productivity and profitability margins. This indicates that the scaling-up and out of this intervention and similar initiatives will move us closer to achieving food security in the two countries.