Audience Survey of *Noman Lambu a Naijeriya* Radio Programme in Kaduna and Kano States, Nigeria

By

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1.0. INTRODUCTION

1.1. Background to the Study

Radio continues to be one of the most popular media to transmit information and engage large numbers of people in all parts of society. In recognition of this, governments, civil society organizations, and NGOs, including the East-West Seeds, use radio as a powerful tool to achieve a broad range of goals. It is worthy of note that EWS has started some radio programmes in Africa: Uganda, Tanzania, Nigeria, as well as in East Indonesia (Papua) for the purpose of empowering rural people in knowledge and skills for improving agricultural production.

When radio programming is relevant, entertaining and informative, listeners tend to remember ideas and facts, and discuss them with their friends and family. This can be the foundation of a complex process involving amplified awareness and behaviour change which allows individuals and families to cope better with the essential challenges in their lives. Radio is thus an agent of socialization, serving as a medium through which the public is vastly informed. It is suitable to all societies, with people of varying socioeconomic status, ages and backgrounds. The medium plays a significant role in public enlightenment as it is (arguably) the cheapest form of electronic media that provides the general public with information, and encourages them to improve their livelihoods.

However, human needs are dynamic; as a wide range of societal peculiarities, gender and age group preferences and technological evolutions abound. Also, the preference for broad range of radio frequencies (AM/FM) and content of programme pose an itching question that begs for answer in order to know how radio programmes have impacted on their audiences. This makes it paramount to occasionally assess the impact of a programme, stations and programmes preferred by audience, as well as reasons for such preferences. There is also often the need to assess the impact of dissemination activities on audience's productivity. This survey, therefore, is to assess the activities and impact of Noman Lambu a Naijeriya on the productivity of its target audience in Kaduna and Kano states, Nigeria.

1.2. A Brief on Noman Lambu a Naijeriya

Noman Lambu a Naijeriya is a knowledge transfer radio programme on vegetable production along the value chain. It is aired on FRCN Kaduna on AM/MW 594 every Tuesdays between 9:30am and 10:30am Format: Discussion/Phone –In (Live). The focus of the programme is on preproduction activities (input sourcing, individual seed production), site selection and preparation, GAPs, harvesting, marketing and consumption. It started in 2019 and has a lifespan of 5 years (that is, 2019 to 2024). At inception, it was originally produced and aired on TV, with funding from EWS. Thereafter, when the programme migrated to radio, the Sustainable Development Goals (SDG) Project took over the funding. The partners involved in the production and airing of the programme were EWS, Solidaridad (an NGO in agricultural extension) and FRCN. While EWS coordinated the processes as well as provided technical support (extension agents), Solidaridad provided SMS and technical information; FRCN

provided the programme presenter and the platform for disseminating the programme. The specific target audience are smallholder vegetable farmers in northwest Nigeria, especially Kaduna and Kano States. This study was carried out therefore to assess the perception of the audience of this programme vis-à-vis its performance and impact on their agricultural productivity.

1.3 Objectives of the Study
1. Provide the general characteristics of audience of "Noman Lambu a Naijeriya"
2. Determine the frequency band quality of FRCN Kaduna station vis-à-vis other radio stations in the study location
3. Examine the quality of the radio programme "Noman Lambu a Naijeriya"
4. Assess the impact of "Noman Lambu a Naijeriya" radio programme on the agricultural productivity/ activities of its target audience
5. Determine the preferred medium for accessing Noman Lambu programme.

2.0. METHODOLOGY

2.1. The Study Area
The study was conducted in Kaduna and Kano states in northwest Nigeria (Figures 1 and 2). Both states have track records of high vegetable production with a suitable climate. Kaduna is located between latitude 09^0 and 11^0 N and longitude 06^0 and 09^0 E. The state has an estimated population of 6,766,562 and a mean annual temperature of between 24^0c and 28^0c. The vegetation consists of northern Guinea savannah in the north and southern Guinea savannah in the south. The length of rainfall varies from 150 days in the north to 190 days in the southern part. The annual rainfall varies from 1107mm in the north to 1286mm in the south. Relative humidity is low, ranging between 60% and 80% in July. The soil pH (level of acidity/alkalinity) ranges from 5.5 to 6.5; the soil may generally be described as sandy-loam. The major economic activities of the inhabitants are farming and trading. The state occupies a major position in the agricultural economy of northern Nigeria.

Kano State is located between latitudes N110 59.824 and longitude E80 31.5230,' with a land mass of about 20,131km^2 (Census, 2006). The state has a population of 9,383,682 (6.70%) and is considered business-oriented, as well as agrarian, as more than half of its working adults are engaged in either business or farming, or related activities as a means of livelihood. The average annual rainfall is 830.3mm, with the mean daily maximum and minimum temperatures of 33.90 and 33.40, respectively (NAERLS, 2015).

Kaduna and Kano states have arable, non-marshy vegetation, well drained, non-highly acidic fluvisols (Awagu, 2014). They grow a wide range of vegetables, including okra, pepper, tomato, onion, cucumber, pumpkin, carrot, spinach, and lettuce. These crops are widely grown in dry and wet seasons in the states.
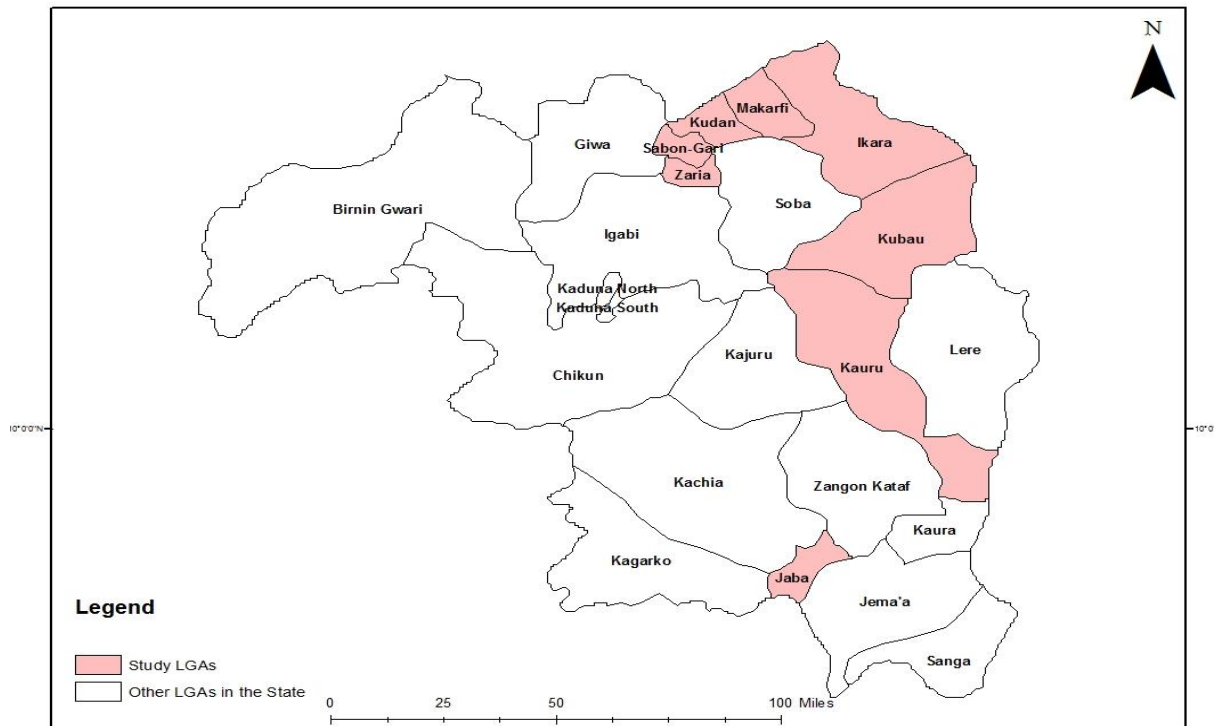
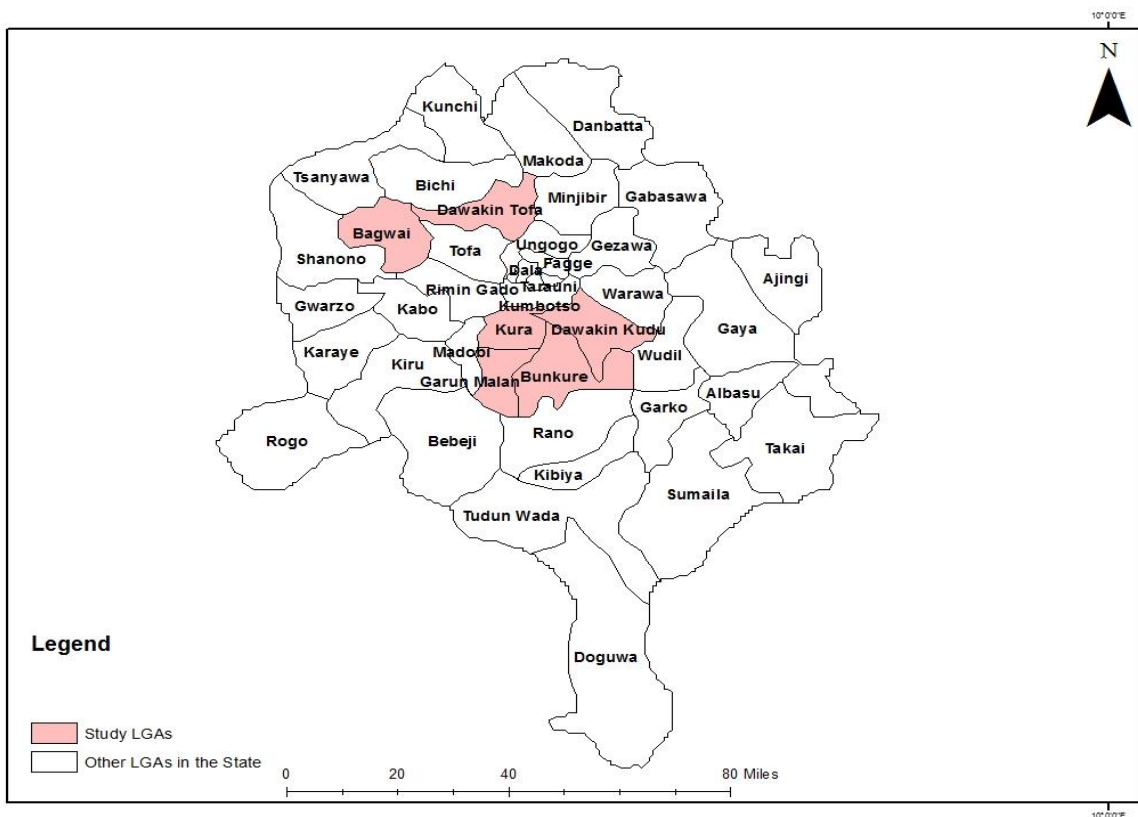**Figure 1: Map of Kaduna State showing the local government areas selected for the study**

Figure 2: Map of Kano State showing the local government areas selected for the study

2.2. Sampling Technique and Sample

A preliminary survey was carried out to identify the vegetable-producing areas in the two states. This helped ensure that representatives of the population are properly captured. Also, the media technical team visited the FRCN to evaluate the quality of *Noman Lambu* programme, its contents and principles of production and airing.

Thereafter, a two stage sampling procedure was adopted in the selection of respondents. These were purposive and random sampling. In the purposive sampling, all LGAs and communities in the study area with high concentration of vegetable production were selected. This way, 14 LGAs (8 in Kaduna and 6 in Kano states) were selected for this study. In the second stage, 20 farmers were randomly sampled from each of the selected communities. Also, due to the inadequate sampling frame, snowballing approach was adopted to draw respondents to be interviewed within the communities selected. In all, a total of 1,253 farmers were used for the study. This comprised 1,119 questionnaire respondents, 132 participants for focused group discussion (FGD) and 2 for key informant interview (KII) respondents.

2.3. Data collection

Primary data were collected by well-trained enumerators using structured questionnaire and interview/ discussion checklists from the following sources.

2.3.1. Questionnaire

This involves personal interaction with the sampled respondents using predesign survey instrument. The sample size was 1119, selected across 55 communities in 14 local government areas of Kaduna and Kano States. Snowballing approach was used in selecting the respondents. The questionnaire was administered as personal interviews to the respondents. The location and sample size of questionnaire respondents are shown in Table 1.

2.3.2. Focus Group Discussion (FGD)

This involved some key opinion leaders in the sampled communities interviewed using a predesigned checklist. One FGD each was conducted in all the sample local government areas, making a total of 14 FGDs (8 in Kaduna and 6 in Kano). Each group consisted of 8-10 participants, cutting across gender, age group and local leadership. The information collected was used to validate the data from questionnaire. The focus group discussion sessions were carried out in fourteen (14) communities in the sampled 14 local government areas in two States, Kano and Kaduna. During the discussion, a total of one hundred and fifty (150) farmers were interacted with; this included eighty-five (85) farmers in Kaduna State and sixty-five farmers in Kano State.

2.3.3. Key Informant Interview (KII)

This consisted of individuals who provided relevant information which helped in the conduct of the research. Two KII sessions were conducted: one with Abubakar Isiaku, the producer of *Noman Lambu a Naijeriya*, and the other with Garuba Aliyu Hadeja, the presenter with FRCN Kaduna. The interviews were conducted on 28th – 29th June 2021 in Kaduna State.

Table 1: Location and Sample Size of Questionnaire Respondents

	KADUNA			KANO		
S/N	L.G. A.	Villages	Sample size	L.G. A.	Villages	Sample size
1	Kubau	Kubau	20	Dawakin Kudu	Tudun Bayero	20
		Zuntu	20		Dabar Kwari	20
		Dutsen-Wai	20		D/Kudu	20
		Damau	20		Magami	20
2	Ikara	Kurmin Kogi	20	Bunkure	Bunkure	20
		Saya Saya	20		Gurjiya	20
		Malikanchi	20		Kukoki	20
		Saulawa	20		Zangon Buhari	20
3	Makarfi	Gimi	20	Kura	Karfi	20
		Tashan Yari	20		Dan-hassan	20
		Gazara	20		Gundudtse	20
		Gangara	20		Butalawa	20
		Gubuchi	20		Imawa	20
4	Sabon Gari	Zabi	20	Garun Mallam	Yadakwari	20
		Shika Dam	20		Chiromawa	20
		Tsugugi	20		Garun Babba	20
		Jushin Waje	20		Agalawa	20
		Ung. Gwado	20		Daka Tsalle	20
5	Kudan	Hunkuyi	20	Bagwai	Bagwai	20
		Likoro	20		Gogori	20
		Bagaldi	20	Dawakin Tofa	Bazazzagi	20
		Kyaude	20		Chedi	20
6	Kauru	Bakin Kogi	29		Bagadawa	20
		Makami	20		Marke	20
7	Zaria	Dakache	20			
		Wucciciri	20			
		Bizara	20			
		Amaru	20			
		Hayin Kusa	20			
8	Jaba	Kurmin Jatau	30			
		Chori	20			
Total	**8**	**31**	**639**	**6**	**24**	**480**
TOTAL			**1,119**			

2.4. Data Analysis and Presentation

Descriptive statistics using tables and charts were used to measure the responses and present the data of the respondents on the variables under consideration. Weighted sum and mean were obtained using SPSS statistical package to interpret the data generated using Likert scale tool.

3.0. RESULTS AND DISCUSSION

3.1 Socioeconomic Profiles of Respondents

This section presents the results of the socioeconomic profiles of the farmers/respondents. The parameters studied included age, gender, marital status, highest educational qualifications, employment status, access to market, access to and number of contacts with extension agents, as well as access to social media, and membership of cooperative society.

The result in Table 2 shows that majority of the vegetable farmers sampled for the study were youths, between the ages of 20 and 40 years old—with a combined total of 56.30%. The average age of farmers was 40 years. This is an indication that majority of the farmers were in their active and productive age and were, therefore, ready and willing to adopt new technologies in the vegetable value chain. Onagwa (2016) has shown that the age of farmers is critical in agricultural production, having significant influence on their decision-making ability and readiness to participate in the uptake of improved production technologies.

Furthermore, the result showed that vegetable production in the study area was dominated by male (94%). Oladeji et al. (2015) attributed this to the prevailing cultural/religious belief system in the study area that restricts women in economic activities, including farming. Although, women contribute significantly to vegetable processing and marketing. Abdul'aziz (2019) also found that the male is believed to be more energetic than women in energy-sapping jobs, including farming.

Table 2: Age Distribution of Respondents

Age	Frequency	Percent
1-20	70	6.26%
21-30	292	26.1%
31-40	339	30.29%
41-50	201	17.96%
51-60	217	19.39%
Mean	**40.10**	
Grand Total	**1119**	**100.00%**

Table 3: Marital status of the Respondents

Marital Status_POOL	Frequency	Percentage
Divorced	5	0.45%
Married	959	85.70%
Seperated	6	0.54%
Single	142	12.69%
Widowed	7	0.63%
Grand Total	**1119**	**100.00%**

The study also reveals that a high percentage of the respondents (85.70%) were married (Table 3). This finding is typical of small-scale farmers; Abdullahi (2010) has reported that large proportions of small-scale farmers in Nigeria are male and are married. The significance of

marital status on agricultural production the continuous supply of family labour. Hence, the result presupposes that there was high family labour supply in the study area.

The data on educational qualification in Figure 3 reveal that 28.06% of the respondents had secondary school education, while 20.02% and 15.82% had primary and non-formal education, respectively. Falola *et al.* (2013) and Omotesho *et al.* (2015) have both concluded that the level of education attained by farmers often affect their decision-making ability, attitude to life and participation in productive activities. Moreover, 59.61% of the respondents spent their full time in agricultural enterprises. It is noteworthy that agriculture contributes about 40% to the gross domestic product (GDP) and employs about 70% of the working population in Nigeria.
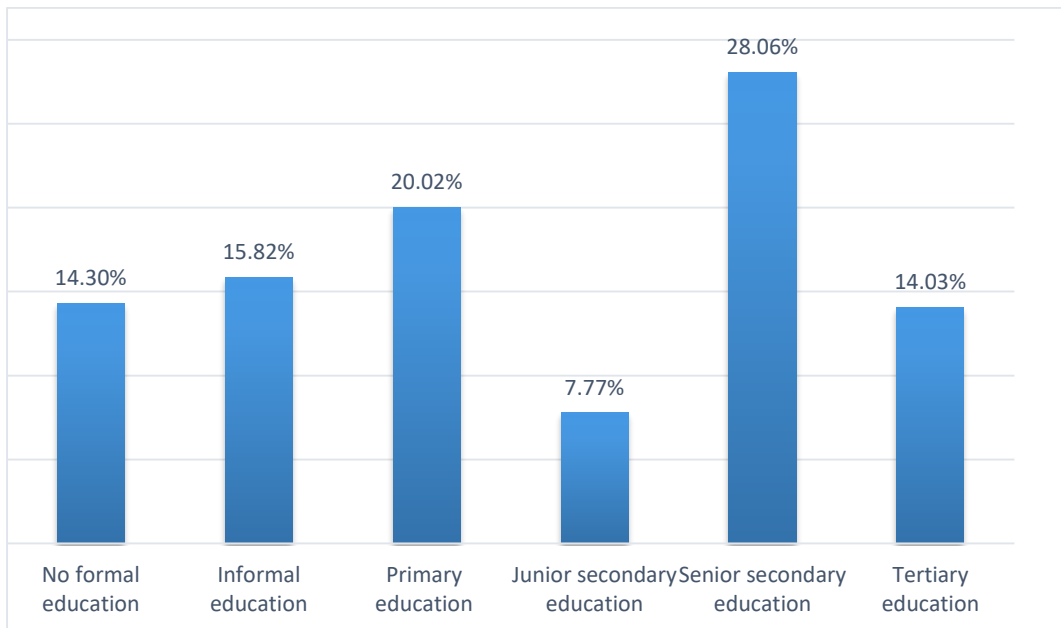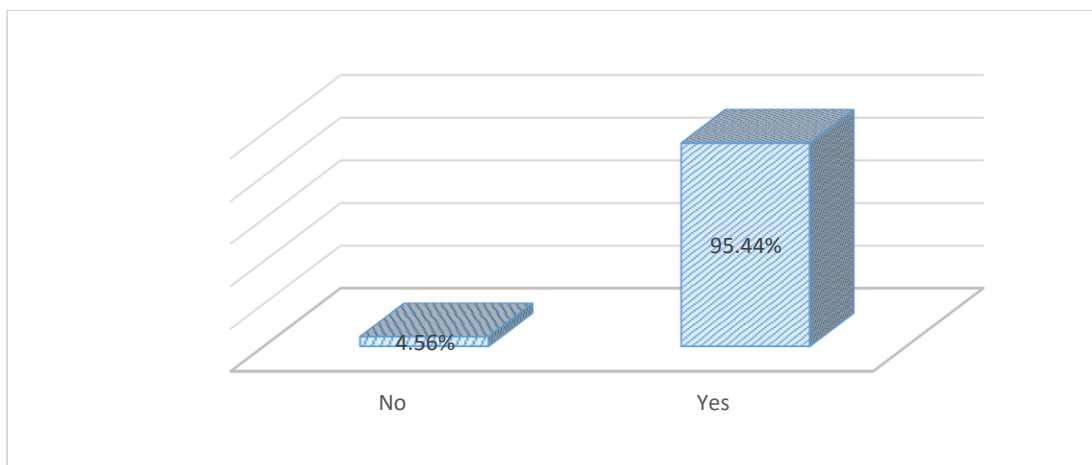

Figure 3: Educational level of farmers

Figure 4: Respondents access to market

Furthermore, Figure 4 shows that majority of the farmers (95.44%) had access to market for their products. The challenges to market participation faced by leafy vegetable farmers, as

found in the focus group discussion, included lack of information about the markets and high transport and transaction costs, which did not allow them to efficiently participate in marketing activities. Also, Figure 5 shows that 57.64% of the respondents have access to extension agents (EAs). The lack of access to vital production information through EAs largely affects farming enterprises, resulting in decreased agricultural productivity. The major function of EAs is to link farmers to recommended production techniques. However, various studies revealed that Nigerian smallholder farmers have continued to lag behind their peers, owing to their inability to the near-collapse of the country's agricultural extension and advisory sector.

Figure 5: Access to extension agents

The result in Figure 6 indicates that majority (64.96%) have in contact with extension agents 1-3 times, even despite the shortage of EAs in Nigeria. Evidence affirmed that well-organized extension contacts enhance the application and utilization of information on improved technology by the farmers as well as their innovativeness. Interacting with extension workers affords the farmers the opportunity of sharing information on modern agricultural practices. Production advice increased technical efficiency. This corroborates with the work of Chiona (2011) and Wakili (2012). Through such production advice, farmers were able to get first-hand information on new agricultural innovations and techniques that would ensure increase in vegetable production in both States.
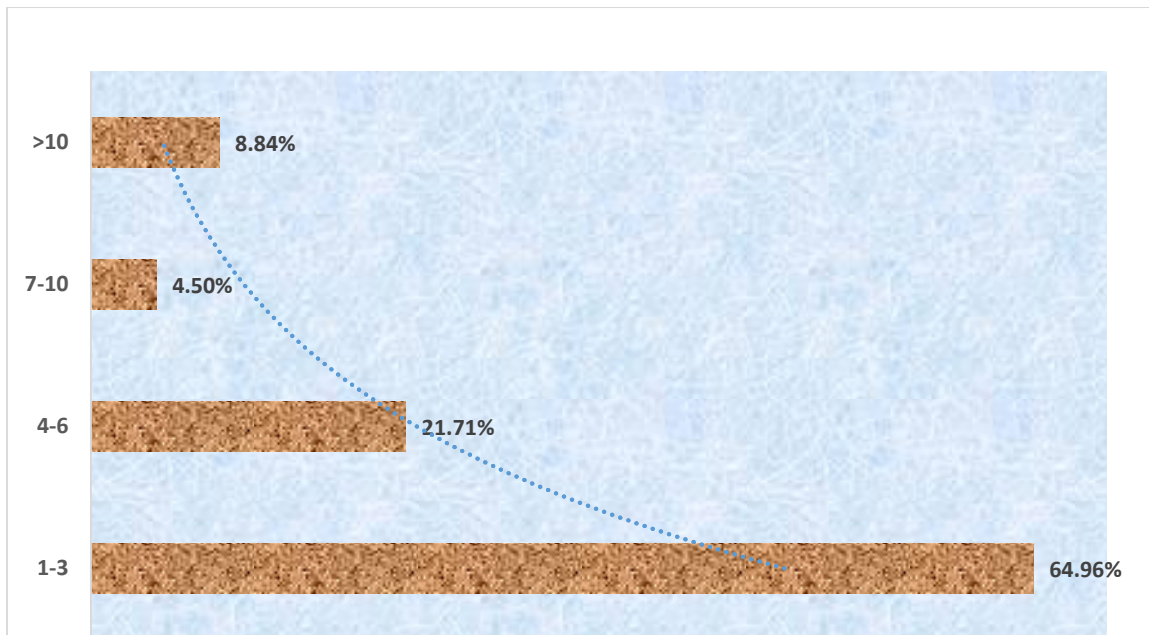
Figure 6: Number of Contact with Extension Agents

The results in Figure 7 indicate that 61% of the farmers do not have access to social media and only 39% have access. This means government should provide infrastructures and social amenities in rural areas to encourage participation in agricultural activities in the rural areas. Networking (Farmer–Farmer) via social media platforms (such as Facebook) can reduce social isolation for farmers. Social media will enable farmers to meet and network with other farmers, agribusinesses and consumers domestically and globally. Enable interaction directly with people of influence. Figure 6 shows that 39.21% do not know how to operate smartphones. While 38.47% cannot afford enabled smartphone and data subscription, whereas 7.05% said they don't have network to connect. This however, reveals need for more awareness and trainings of farmers on ICT for Agriculture be introduce.
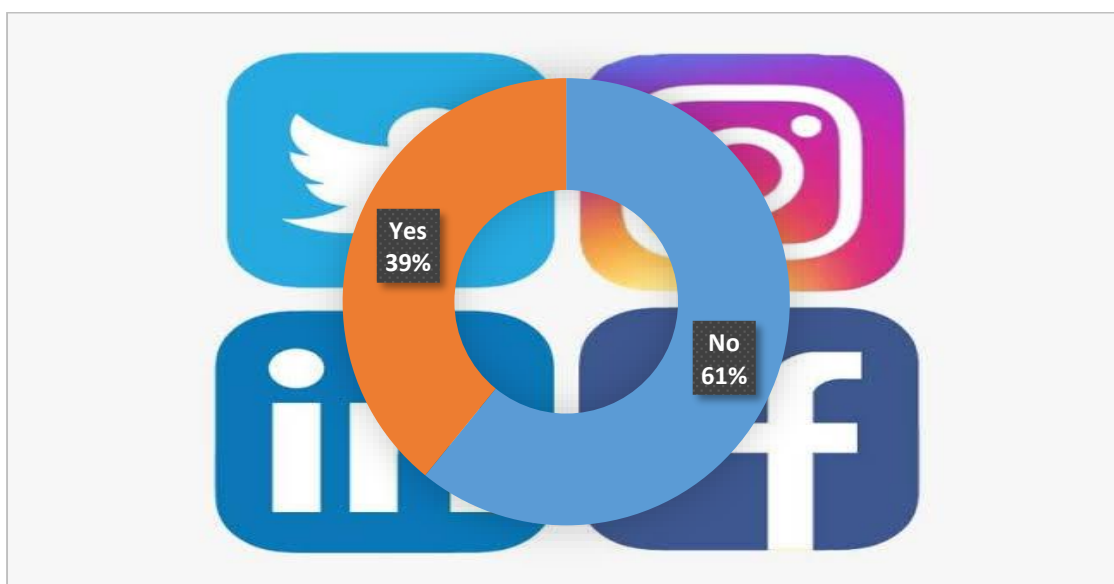

Figure 7: Access to Social Media by Respondents

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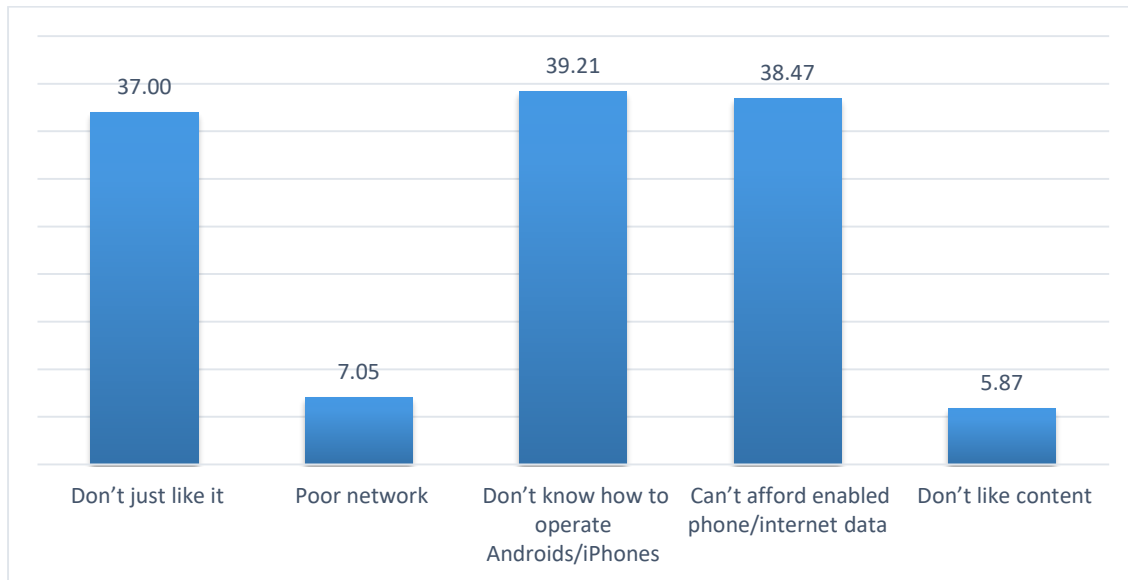

Figure 8: Reasons for lack of Access to Social Media

Moreover, Figure 9 reveals that a larger proportion (57.99%) of the farmers do not belongs to farmers group or cooperatives, while 42.09% of the respondents belong to farmers' cooperative. This implies that many farmers do not had opportunity of interacting with other fellow farmers to enhance diffusion of innovations among themselves. A study by Odebiyi (2010) opined that cooperative groups ensure that their members derive benefits from the groups which they could not derive individually. According to Idiong et al. (2007), membership of cooperative affords the farmers opportunities of sharing information on modern technologies. In Nigeria, most agricultural interventions are now geared towards encouraging farmers to belong to cooperative groups for easy access to interventions and loans. A dynamic and functional farmer based organization is very useful tool that enables farmers to access bank loans, collective marketing, bulk purchase of agricultural inputs and access to one form of assistance or the other from the government or any other non-governmental organisations. Individual farmers cannot consistently and reliably control the price they receive for their agricultural products or the price they pay for the inputs needed to produce those goods. Thus, farmers often form cooperatives so that they can enhance their economic market power.
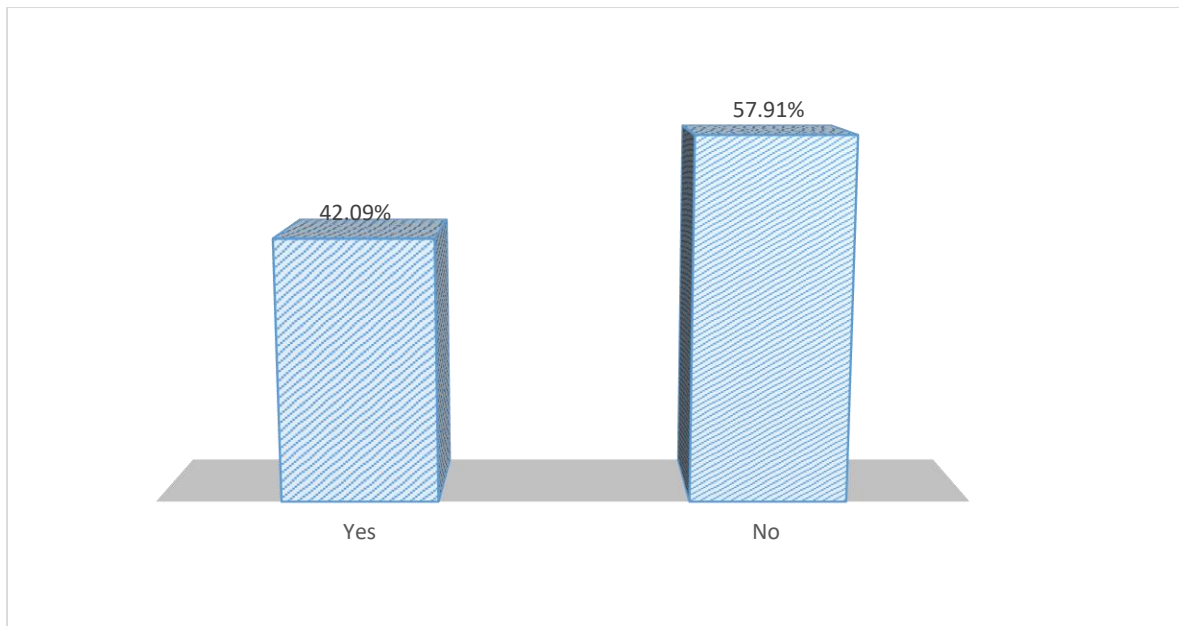
Figure 9: Membership of Cooperative Society by Farmers

3.2 General Characteristics of Audience of *Noman Lambu*

This section presents the results of estimated production record of the farmers in the study area. The parameters studied include years of farming experience, number of plots owned, farm size, years of experience in vegetable production, type of vegetable grown by the farmers, season of vegetable production and challenges of vegetable production. Parameters that are qualitative in nature were reported graphically while the quantitative parameters were reported using frequency distribution table.

Farmers Years of Farming Experience

The result in table 4 shows that about 33% of the respondents (farmers) in Kaduna State have been in agriculture for the period between 11 and 20 years. Whereas, in Kano State, about 35% of the sampled farmers have between 1 and 10 years farming experience. Comparatively, Kaduna State farmers have been involved in agriculture activities for longer period than their Kano State counterparts, with an average of 24 and 17 years, respectively. As farmers accumulate experience over time, they progressively switch from traditional agricultural practices to improved practices on the basis of field experience and continuous exposure to information on production technology. The data reveal that Kaduna State has more old time farmers than Kano State. Farming experience refers to the time a farmer has spent in the farming occupation since he/she started making independent production decisions. It is also the act of gaining knowledge through constant farming practices, which often leads to specialization (Adebayo, 2006).

Table 4: Farmers' years of farming practice experience in Kaduna and Kano States

Years in Aric	Frequency	Percent
Kaduna	**632**	**56.48%**
1-10	97	15.35%
11-20	207	32.75%
21-30	177	28.01%
>31	151	23.89%
Mean	24.46	
Kano	**487**	**43.52%**
1-10	175	35.93%
11-20	170	34.91%
21-30	91	18.69%
>31	51	10.47%
Mean	17.60	
Grand Total	**1119**	**100.00%**

Farm Ownership and Sizes

Table 5 reveals that farmers in the study area owned between 1 and 5 plots in both Kaduna and Kano State. This is an indication that majority (≥80%) of the respondents were smallholders, controlling small numbers of farmlands for their production activities. Farmland ownership, which broadly refers to the control and use of farmland, shapes many farm decisions, including those related to production, conservation, and succession planning. In rural communities, ownership of farmland is a measure of farmers' wealth and social status. Also, the trend and patterns in the ownership of agricultural lands are of perennial interest to everyone in the sector.

Table 5: Number of Plots Owned by the Farmers

Plots Owned	Frequency	Percent
Kaduna	**632**	**56.48%**
1-5	503	79.59%
6-10	117	18.51%
>11	12	1.90%
Kano	**487**	**43.52%**
1-5	418	85.83%
6-10	64	13.14%
>11	5	1.03%
Grand Total	**1119**	**100.00%**

Table 6 presents data on sizes of lands cultivated by farmers in the study area. The data reveal that majority (>80%) of vegetable farmers in Kaduna and Kano states cultivated farms of 5 hectares or less. Similarly, the average farm size cultivated by the farmers was 3 hectares. This suggests that most of the vegetable farming households were smallholders and largely subsistent. Farm size plays a critical role in agricultural sustainability. This often has far-reaching consequences for the economic and social performance of agricultural production, resulting, for instance, in excessive use of chemical fertilizers. However, the magnitude of such effects and their causes are not well understood; but they are essential for effective policy development, especially in Nigeria, where the agricultural sector is still largely dominated by smallholders.

Table 6: Farm Size Cultivated by Farmers by State

Farm Size(Ha)	Frequency	Percent
Kaduna	**632**	**56.48%**
1-5	566	89.56%
6-10	49	7.75%
>11	17	2.69%
Mean	**3.12**	
Kano	**487**	**43.52%**
1-5	426	87.47%
6-10	47	9.65%
>11	14	2.87%
Mean	**2.98**	
Grand Total	**1119**	**100.00%**

Number of Years in Vegetable Production

The range of experience in vegetable production in the study area (Table 7) for 1-10 years was 41% and 62% for Kaduna and Kano respectively. High farming experience shows that a farmer is relatively skilled and has some level of specialization, which would help in cost minimization and achievement of efficiency. Experience is expected to have a significant positive impact on the managerial ability of the farmers. Furthermore, the experience of farmers in any agricultural enterprise can enhance their level of productivity on their farms. Therefore, the more experienced they are, the more efficient they would be in management.

Table 7: Years of Experience in Vegetable Production by State

Years Farm Vegetable	Frequency	Percent
Kaduna	**632**	**56.48%**
1-10	258	40.82%
11-20	209	33.07%
21-30	94	14.87%
>31	71	11.23%
Mean	**16.64**	
Kano	**487**	**43.52%**
1-10	304	62.42%
11-20	128	26.28%
21-30	43	8.83%
>31	12	2.46%
Mean	**11.32**	
Grand Total	**1119**	**100.00%**

Types of Vegetable Crops Grown by Farmers

The result in Figure 10 reveals that tomato (83%), onion (63%) and pepper (56%) were the 3 highest ranking vegetables produced in the study area. This is obvious, since these 3 commodities were having the highest demand, owing to their importance in daily diets and relatively high shelf life, as well as competing market prices. Other prominent vegetables identified in the study area are okra (27%), cabbage (25%), chillies (23%), cucumber (23%), sweet corn (20%), carrot (17%), spinach (17%), green beans (15%) and lettuce (14%). Vegetables are produced in different agro-ecological zones of Nigeria in commercial and small quantities as source of income and nutrient. However, the type depends on consumer demands,

shelf life and competing prices in the market. In spite of this, the production of vegetables in Kaduna and Kano states varies from cultivating for home consumption to production for export (Dawit *et al.,* 2004).
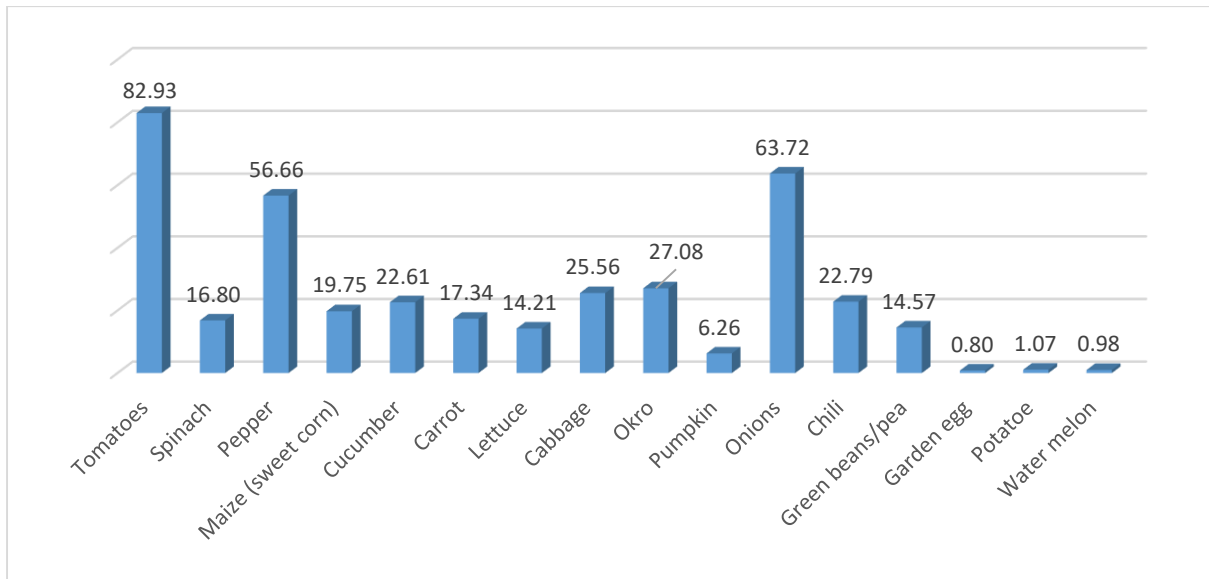

Figure 10: Types of Vegetable Produced by Farmers in the Study States

Table 8 depicts that in Kaduna State 60% of the farmers grow vegetable both during wet and dry seasons. In Kano State however, about 69% of farmers grow their vegetable only during the dry season period. This is obvious in view of the fact Kano State has abundant water supply through Dams and river basin development projects. These dams supply water throughout the year which makes it easy for farmers to utilize for their irrigation activities.

Nigeria is a tropical country with most of its land areas lying in low and without elevation frost problems, thus depicting a favourable climatic condition for all-year round agriculture. In Nigeria, there are two distinct seasons, the rainy and the dry season. The rainy season is the normal cropping season and in Northern Nigeria, this starts from May and stops in September, while the dry season starts from October and ends in April. Meanwhile, due to the break in rains during the dry season, it has been observed that labour activities of farmers are reduced, which results in multiplier effects of low income, expensive food items and even hunger (Opabode and Adeboye, 2005). But having been made aware of the possibilities of improved farm practices, dry season vegetable production is becoming a viable option for farmers.

Table 8: Seasons of Vegetable Production

Production Season	Frequency		Percent
Kaduna	632		**56.48%**
Both Wet & Dry Season	382 ✅		60.44%
Dry season	181 ⚠️		28.64%
Wet season	69 ❌		10.92%
Kano	487		**43.52%**
Both Wet & Dry Season	112 ❌		23.00%
Dry season	336 ✅		68.99%
Wet season	39 ❌		8.01%
Grand Total	**1119**		**100.00%**

3.3 Challenges of Vegetable Production

Vegetable farming business is a very lucrative agricultural business but not without its challenges. The result of the analysis of challenges encountered by vegetable farmers in the study area as shown in Figure 11, ranked as most critical to the least showed that Pests and diseases took the lead indicating 76%. This was followed by the lack of access to structured market (43%), high cost of seeds (40%), lack of storage and/or preservation facility (26) and inadequate source of water (25%).

- **Pests and Diseases -** Pests and diseases remain one of the key challenges of crop production generally, not only peculiar to vegetable production. However, in vegetable owing to succulent and sweet flora of the plants, they attract lots of pests and diseases. This left farmers with burden of battling with problem of pest year-in, year-out. Costs associated with frequent pesticides application and labour has a multiplier effect on reducing the potential yields and ultimately farmers' profitability.

- **Poor Marketing Structure -** Vegetables are perishable agricultural products and therefore demands quick. However, factors like price fluctuation, presence of middlemen, stiff competition etc. has often posed a challenge in the quick marketing of vegetable and its products. Further, due to perishable nature and biological nature of production process there is a difficulty of scheduling the supply of vegetables to market demand. The crops are subjected to high price and quantity risks with changing consumer demands and production conditions. There is also lack of standard measure for vegetables/pricing. On the other hand, lack of market infrastructure is one of the limiting factors causing low returns in vegetable cultivation. Profitability is not only determined by the use of input resources but it is also dependent on the availability of proper logistic for transporting the farm produce from farm gate to the market.

- **High Cost of Inputs -** Another bottleneck of vegetable farming in the study area was identified to be high cost of inputs such as seeds, fertilizer, and adulteration. Seed challenge stem from making the right choice of variety to use, information on reliable sources and problem of seed adulteration.

- **Lack of Storage Facility -** Vegetables are also highly perishable as they start to lose their quality right after harvest and continued throughout the process until it is consumed. and again, where there is no electricity needed for storage of the agriculture produce. Electricity, as we all know, encouraged large scale production, particularly in the case of

using farm machines to maximize production. In addition, farmers' poor knowledge of processing and preservation skills leaves the product wasted leading to quantum loss especially at the peak of harvest period.

- **Inadequate Source of Water:** Inadequate water supply or irrigation is one of the major challenges affecting vegetable farming in the study area. There are water shortfalls in most parts of the study area. And most vegetable farmers in the study area depend heavily on irrigation. Though water shortage is particular to both wet and dry season vegetable farmers. Farmers who cultivate during wet season rely on the mercy of available rainfall which sometimes erratic largely due to adverse climate events. Long dry spell is also a key challenge to wet season vegetable farmers. On the other hand, dry season farmers are also not spare as a result of incessant drought and drying up of streams and wells which most of them depends on for water supply.

It should be noted that the above challenges identified were the most frequent, summing up the bottlenecks to over 58% among the respondents. Other impediments such as excess weeds (19%), high labour requirement (15%), adulterated and high cost of fertilizer (7%) and lack of access to finance (2%) can be largely minimised if those identified above are adequately addressed.
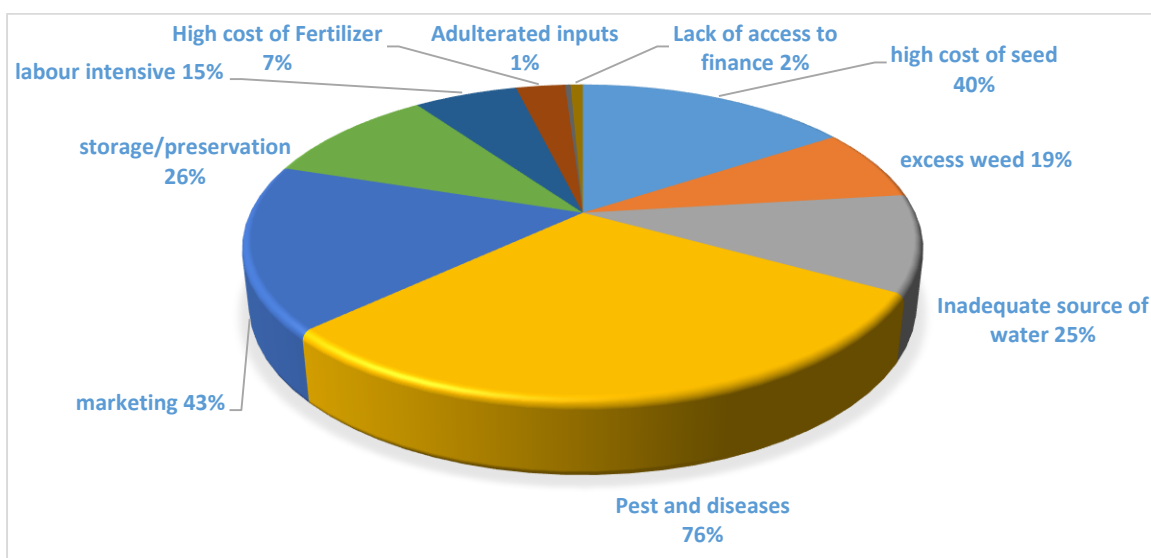

Figure 11: Challenges faced by farmers in vegetable production

The result in Figure 12 shows that out of the 1,119 respondents, only 10.72% were farmers of East West Seeds (EWS). The remaining (89.28%) respondents were not EWS farmers. Figure 13 shows that 54.29% and 38.93% of them listened mostly to FM and AM/MW stations, respectively, while negligible percentages of them listened to Internet radio/ podcasts and SW stations (0.18% and 0.09% respectively). Also, Figure 14 shows that the highest proportion of the respondents (39.29%) listened often to radio, while a slightly lower proportion (33.48%) listened very often, and 21.25% others only listened to radio occasionally.
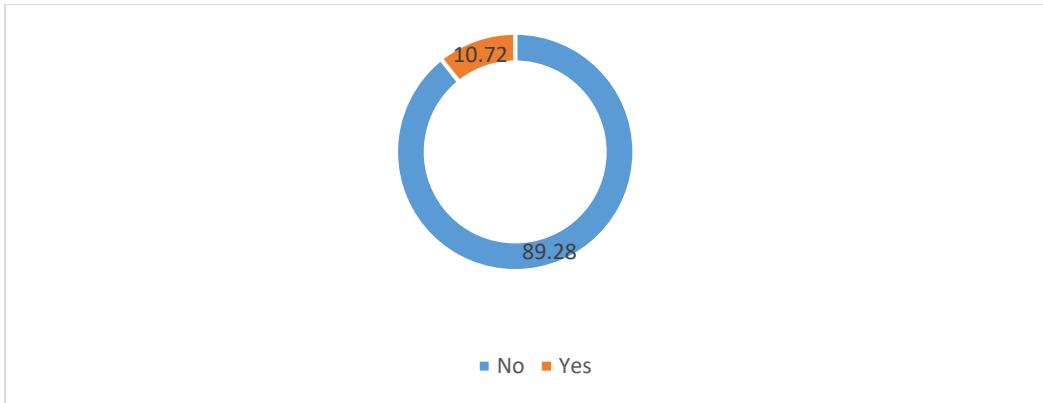
17

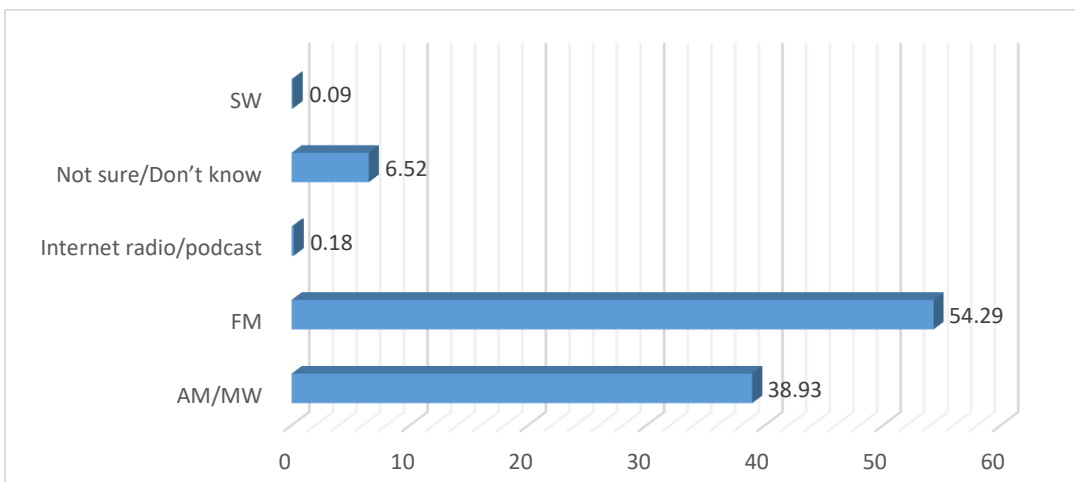**Figure 12: Percentage of EWS farmers among the respondents**

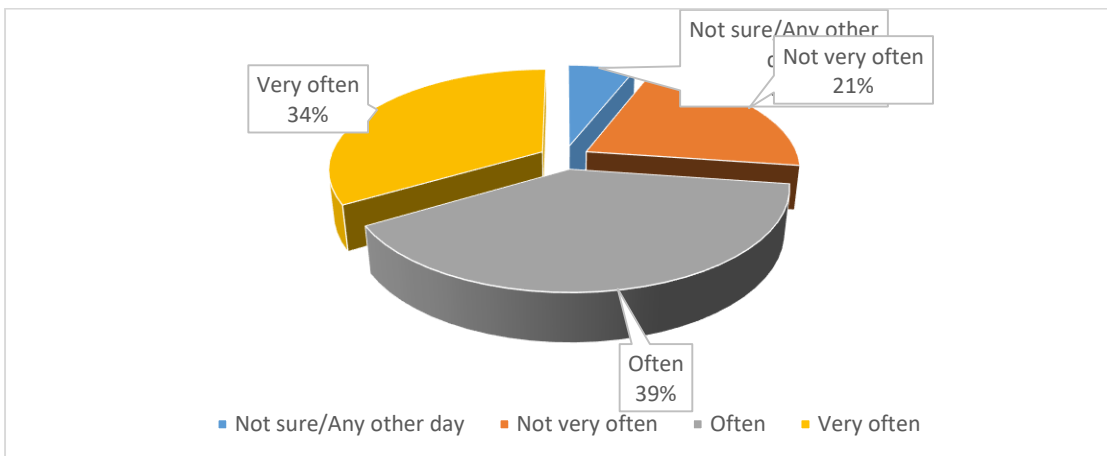**Figure 13: Radio listenership of respondents by frequency**

Figure 14: Frequency of listening to radio

Result in Figure 15 reveals that (90.63%) of the respondents listened to radio at home and (25.09%) listened to it while working in the farm. The least place where the respondents listened to radio was on the Internet.
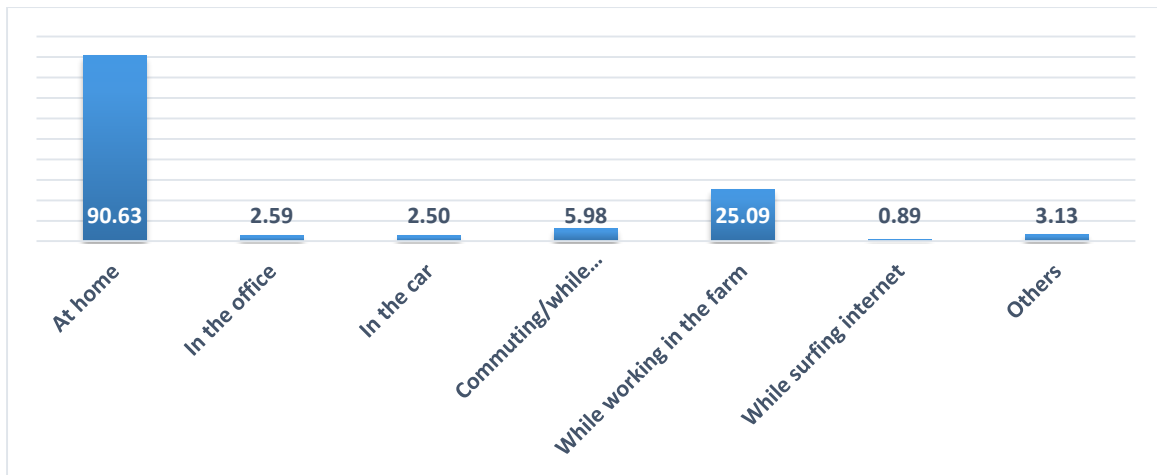
Figure 15: Place of Radio Listening

The data in Figure 16 show that nearly 56% of the respondents were not aware of Noman Lambu radio programme. Only 44% of them were aware the programme.
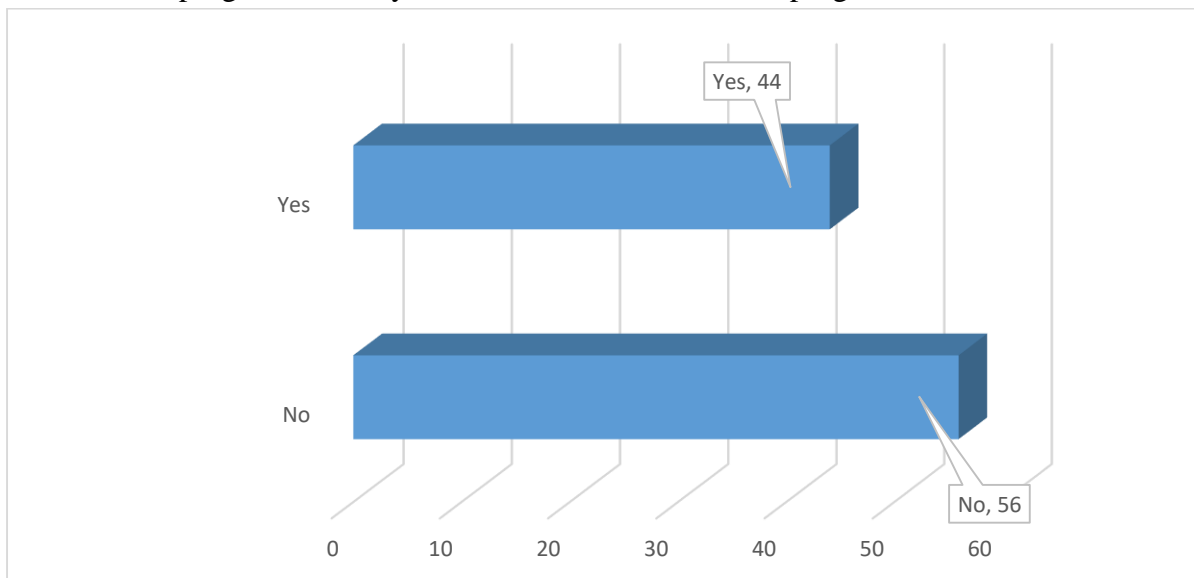

Figure 16: Farmers' Awareness of *Noman Lambu a Naijeriya* Radio Programme

Figure 17 reveals that (74.04%) of respondents stated that they go to know of the programme through the Radio Nigeria, Kaduna. Also, (15.21%) and (10.55%) of them indicated that they knew of the programme through fellow farmers and relatives/neighbours, respectively. Very few (0.2%) got to know through EWS staff.
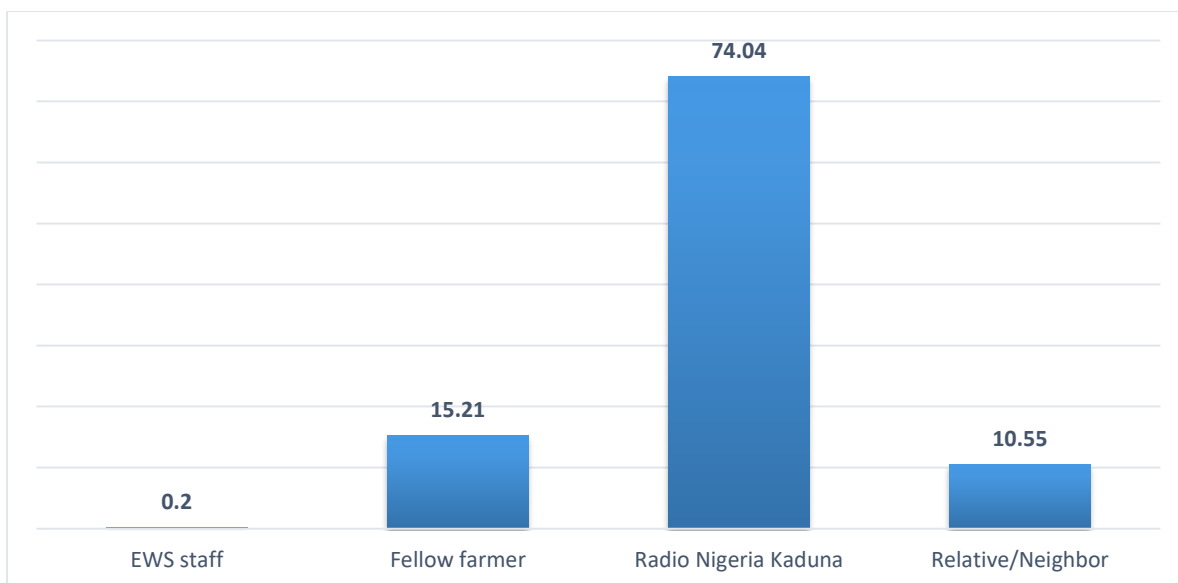
Figure 17: Farmers' Sources of Awareness on *Noman Lambu a Naijeriya* Programme

Figure 18 shows that a large proportion (63.66%) of the respondents did not listen to Noman Lambu programme, while only 36.34% of them listened to the programme.
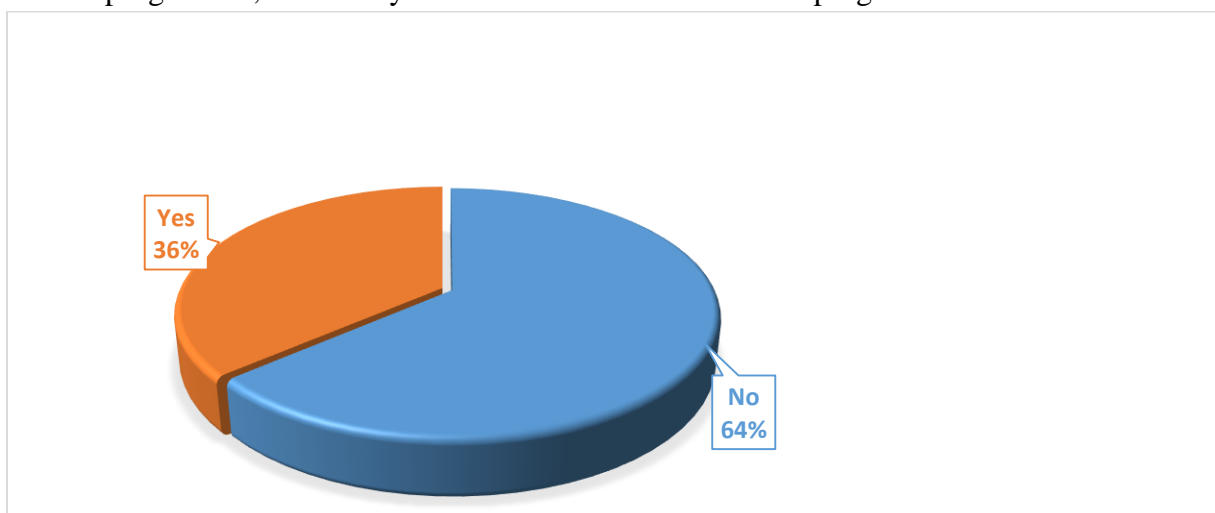

Figure 18: Listenership to *Noman Lambu a Naijeriya* Programme

Table 9 shows that (71.1%) of the respondents that listened to Noman Lambu, were between one and four household members listened to it; while (26.29%) between 5 and 8 members listened to it.

Table 9: Household members' listenership to Noman Lambu

Number of HH Members	Frequency	Percent
0 -- 4	289	71.01
5 -- 8	107	26.29
9 -- 12	11	2.7
Grand Total	**407**	**100.00%**

Table 10 reveals that the largest percentage (64.86%) of those who listened to the programme did that regularly (every week), while the rest were not regular listeners (20.64%) listened by chance, (8.85%) once in two weeks, and (5.65%) once a month.

Table 10: Frequency of Listening to *Noman Lambu a Naijeriya* Programme

Frequency of Listening to Nooman Lambu	Frequency	Percent
By chance	84	20.64
Once in a month	23	5.65
Once in a week	264	64.86
Once in two weeks	36	8.85
Grand Total	407	100.00%

3.3 Frequency Band Quality of FRCN Kaduna

The section assessed the frequency band quality of FRCN Kaduna station vis-à-vis other radio stations in the study area and its influence on respondents' attraction to *Noman Lambu*. Result in Table 11 shows that the number of stations frequency received in the study area were between 1-3 radio stations (62.50%) in Kaduna State, and in Kano 4 to 6 stations (42.09%). This could influence their decisions on the various stations by having varieties of stations to listen to, programmes, especially those that suit their free time to listen to programmes and this would lead to them adapting to new stations.

Table 11: Number of Station Signal Received in the Study Area

Number of stations	Frequency	Percent
Kaduna	632	56.48%
<1	6	0.95%
1-3	395	62.50%
4-6	226	35.76%
7-10	4	0.63%
>10	1	0.16%
Mean	3.22	
Kano	487	43.52%
<1	3	0.62%
1-3	77	15.81%
4-6	205	42.09%
7-10	149	30.60%
>10	53	10.88%
Mean	6.70	
Grand Total	1119	100.00%

Table 12 shows the top ten (10) radio stations that farmers in Kaduna and Kano listen to more often as found in the study. The result reveals that FRCN Kaduna rank first with 39.32% responses followed by Arewa radio (FM) station (30.21%) in Kano State. This gives an idea on how constant and quality of the stations frequency are, importance of the programmes and how it impacted to the respondents.

Table 12: Stations Patronized more often by Farmers

Stations	Frequency	Percent
FRCN	440	39.32
Arewa	338	30.21
Nagarta	299	26.72
Freedom	262	23.41
Dala	148	13.23
Alheri	121	10.81
KSMC/KADA	109	9.74
Rahama	92	8.22
Queen FM	89	7.95
Pyramid	67	5.99
Others	295	26.36
Grand Total	1119	

Figure 19 indicates the reasons for selecting the stations they like the most or listen to the most. Majority of the farmers (70.42%) opted for the news content these stations provide them with, while the second closest to the highest (51.39%) preferred these stations because of how the language communicated locally to their utmost understanding. This depict that the choice of station by the farmers determines how rich the content is, the language and how appealing it is to the farmers.
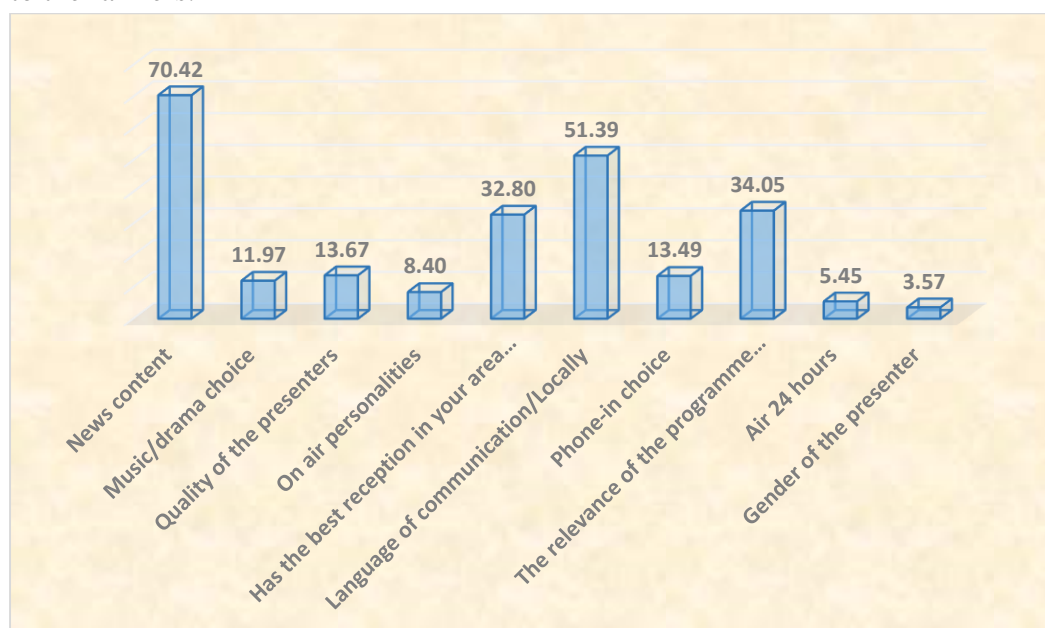

Figure 19: Reasons for choice of station

Table 13 indicates the stations with clearer signals received in the various communities in the two States. The result reveals that in both States (35.57%) responses were positively on FRCN being the clearer stations followed by Arewa radio (23.15%) in Kano. The result affirmed that farmers received FRCN's signal very clear in wherever they are, both at the farm and at home, as well as their quality programmes. This was validated during the focus group discussion interview with other respondents at different location in the study area.

Table 13: Stations with clear signal

Clearer station	Frequency		Percent
Alheri	70		6.26
FRCN	398		35.57
AM Kano	16		1.43
Queen	14		1.25
Arewa	259		23.15
Freedom	106		9.47
Dala	62		5.54
Vision	18		1.61
Pyramid	27		2.41
BBC	5		0.45
FCE	2		0.18
KSMC	18		1.61
Nagarta	90		8.04
Rahama	22		1.97
Karama	1		0.09
Liberty	3		0.27
PrTV	3		0.27
Salama	36		3.22
Wazobia	5		0.45
Grand Total	**1119**		

Figure 20 reveals that signal of FRCN radio was accessible to about 75% of the respondents, while it was considered weak for access by 24.91% of the respondents. Radio Nigeria Kaduna Hausa service according to a (1991) survey, FRCN has over forty million (40) listeners; however, in a report of 2014, estimated figures of the Radio Nigeria Kaduna Hausa service listeners had risen to seventy million (70,000,000). (Abdulmumin, 2014:17).
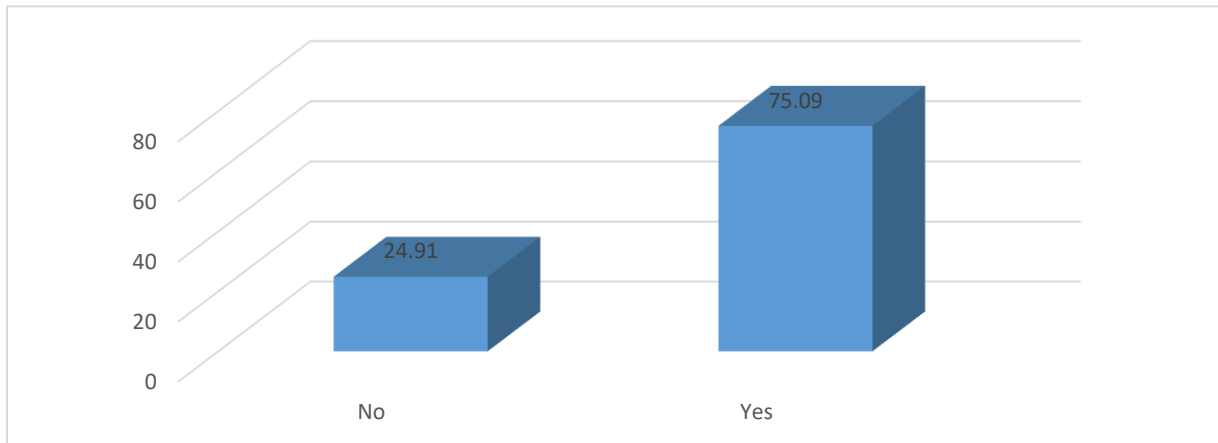
Figure 20: Farmers Receive Signal from FRCN, Kaduna

The data in Figure 21, show that 45.30% and 35.20% of respondents reported that the signal quality was very good and good, respectively. This means that a combined total of 80.50% of the respondents considered the signal quality good. However, 2.73% and 0.12% stated that it was poor and very poor respectively. Moreover, 16.65% of the respondents indicated that the signal quality was fair. This also concurs with Abdulmumin (2015) that several research findings, indicate that despite the increasing challenge of foreign radio stations that broadcasts in Hausa, which 10 clearly received in the West African sub-region, the Hausa service of Radio Nigeria Kaduna remains unbeatable in terms of influence and credibility among Hausa listeners.
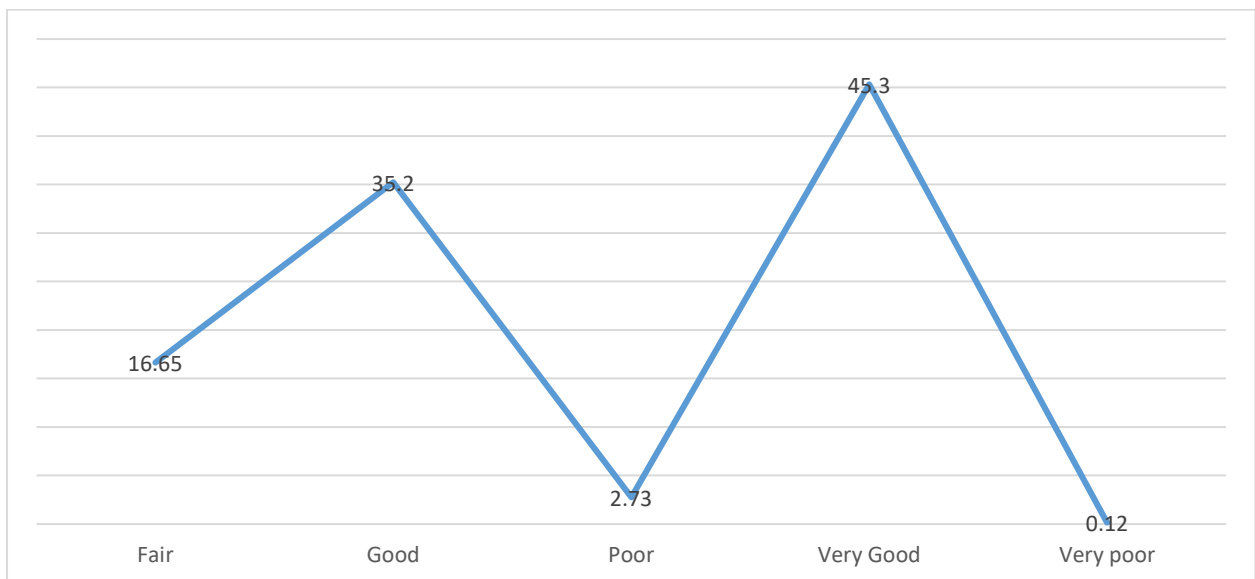

Figure 21: Strength of FRCN radio signal

Majority of FGD participants in Kaduna State mentioned FRCN Kaduna, Nagarta Radio and KSMC as their regularly listen Radio stations. Farmers in Zaria and Sabon Gari and Ikara Local Government Areas of Kaduna State added Alheri FM, while those of Ikara added Radio Kano their regular stations. Ikara shares close proximity with Kano. Majority of farmers in Kano

State mentioned Arewa FM, Freedom FM, Dala FM, Pyramid FM, Vision FM and Radio Kano as their most regularly stations. The FGD participants in both states said they chose these stations because of their clarity of signal, interesting programme contents and the language of broadcast. A few of them, however, said they listened to the stations because of news and entertainment contents.

3.4 Programme Quality of "Noman Lambu a Naijeriya"

Figure 22 shows the reason why farmers choice of programmes frequently listens to the most in the selected station, after stating that they receive Federal Radio Corporation of Nigeria (FRCN) and Arewa FM station at their convenience, majority (71.67%) of the farmers therefore went ahead to state that it was usually because the station provides them with local news and also keeps them updated on political affairs of the country. Followed by (70.12%) responses for programmes related to economics and marketing and then (67.38%) selects Agricultural programmes. Both States selected these as the reason as to why they prefer the stations they selected and majority agreed its due to local news presentation to their utmost understanding and also to keep they at the communities updated on political matters as deduced during the focus group interview.
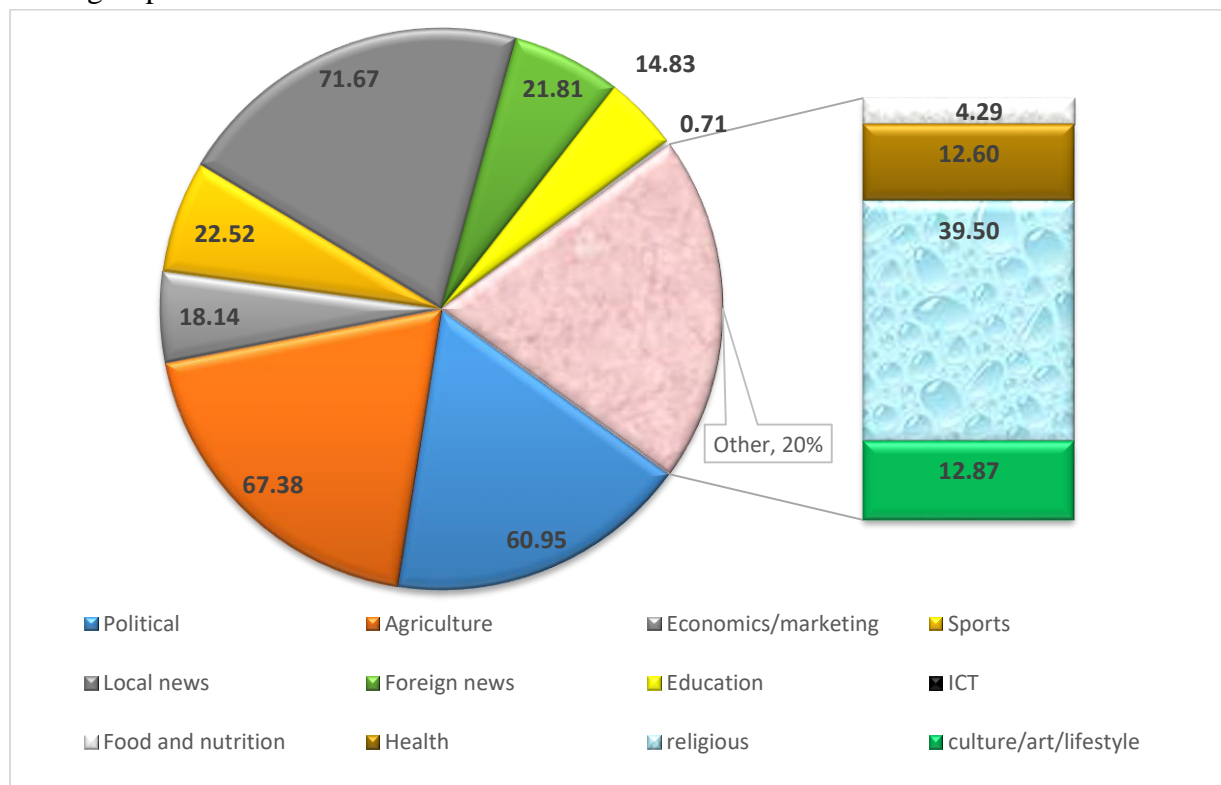

Figure 22: Farmers' Choice of Programme

Figure 23 indicates the kind of presentation styles the stations found fascinating during the programme as reveal by the respondents. Majority (53%) of the farmers said phone-in programme as according to them, it allowed for their voice to be heard, their ability to contribute to the programme as well clarify on the day topic presented. While (39%) says SMS, similarly, (6%) and (2%) of the respondents says social media and letters. However, during the

focus group and key informant interview reveals that most times listeners call are not answered for the reason of calls traffic, so they opt for sending SMS.
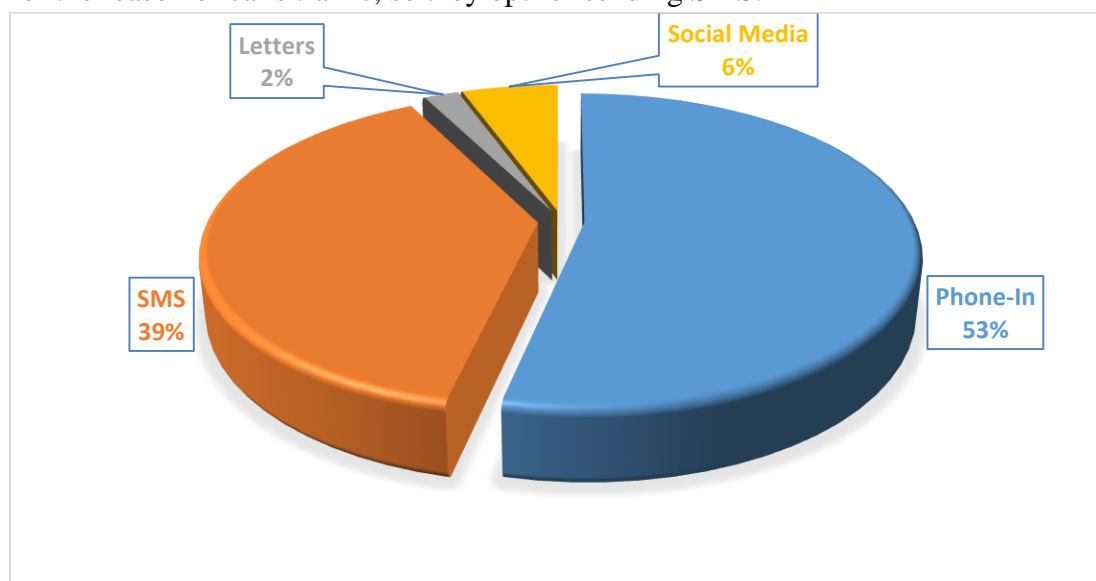

Figure 23: Programme Presentation Style Adopted

The KII data also supported the result that members of the audience made use of the phoned-in component of the programme to make several contributions. There were also several questions on vegetable production— according to the KII data, the most frequently asked questions during the programme were on:

Fertilizer types and application techniques (quantity, time of application, and how to apply them); disease management (such as *tuta absoluta* on tomato, blight in tomato, etc); how to grow certain vegetables in their off-seasons (such as growing tomato in wet season); suitable varieties to grow and how to source for them; and land preparation techniques. (*Excerpt of KII (1) response*)

The data also showed that a large majority (85.03%) of farmers (respondents) were satisfied with the language of broadcast, while 14.99% of them indicated that they were fairly satisfied (Table 14).

Table 14: Respondent's satisfaction with the language of broadcast

Satisfaction with Language of Presentation	Frequency	Percent
Fairly satisfied	61	14.99
Satisfied	346	85.01
Grand Total	407	100.00%

With regard to the time of broadcast, 78.87% of the respondents indicated that they were satisfied with the time of broadcast, while 18.92% stated that they were fairly satisfied. However, 2.21% of the respondents stated that they were not satisfied with the time of broadcast (Table 15).

Table 15: Satisfaction with programme time of broadcast

Satisfaction with Programme Timing	Frequency	Percent
Dissatisfied	9	2.21
Fairly satisfied	77	18.92
Satisfied	321	78.87
Grand Total	407	100.00%

About 29% of the seven (7) respondents that were dissatisfied with the time of broadcast preferred that the time be adjusted to 7.00am. Although in the focus group discussion participant's choses 8-9pm. The remaining five respondents chose between 6.30am and 9.00am (Figure 24). Figure 23 also shows that the greatest motivation for respondents in listening to the programme was the programme contents (81.73%), followed by language of broadcast (58.52%), mode of presentation (45.19%) and programme format (37.04%). The least motivation was gender of presenter (3.46%).
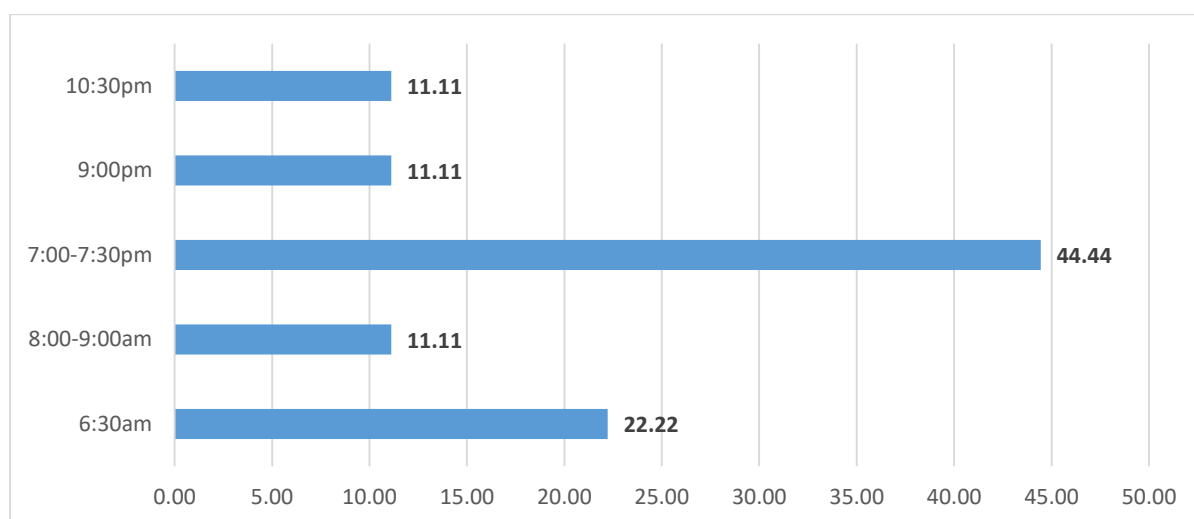

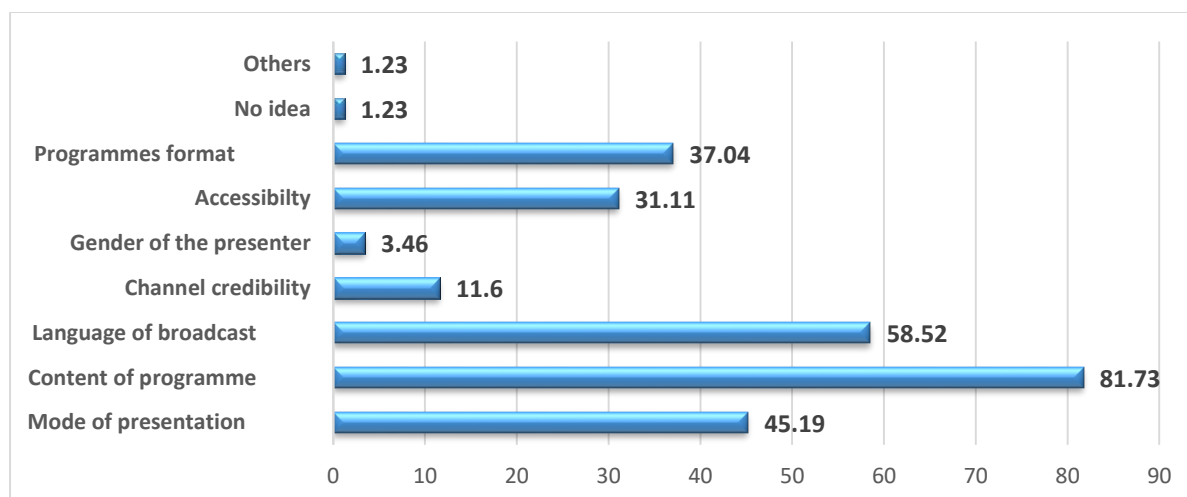**Figure 24: Preferred Timing Suggested by Dissatisfied Farmers**

Figure 25: Farmers Reasons for Listening to *Noman Lambu a Naijeriya* Programme

The study shows that a combined majority (95.57%) of the respondents found the programme quality to be generally good—as 50.61% and 40.96% rated the programme very good and good respectively (Table 16). Figure 24 shows that a combined majority (95.84%) of the respondents indicated high level of understanding of the programme contents - as 51.35% and 44.47 had high and very high understanding of the programme, respectively. Notwithstanding, about 2.46% of the participants stated that they had low understanding of the contents.

Table 16: Listener's perception of the quality of Noman Lambu

Satisfaction with the Programme	Frequency	Percent
Fair	18	4.42
Good	183	44.96
Very good	206	50.61
Grand Total	407	100.00%
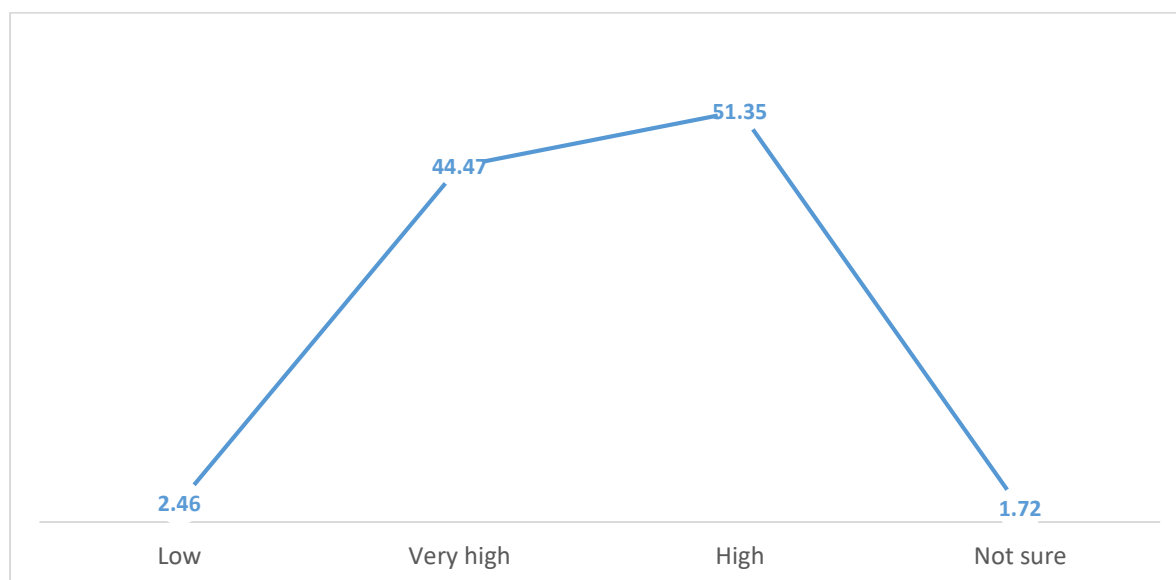
Figure 26: Farmers' Rate of Understanding with the Programme

On the ease of understanding the programme contents, 94.10% indicated there was no challenge in understanding the contents, while 2.21% indicated that they had challenges (Table 17). Of the nine (9) respondents who indicated that they had difficulty in understanding certain contents of the programme, five (55.56%) stated that the challenge was due to poor network, which made it difficult for them to ask questions; 2 others or 22.22% stated that their challenge is the language of presentation (Table 18).

Table 17: Difficulty in Understanding Programme Contents

Difficulty in Understanding Programme	Frequency	Percent
No	383	94.1
Yes	9	2.21
Not sure	15	3.69
Grand Total	407	100.00%

Table 18: Area of Difficulty in Understanding Programme Contents

If yes, in What Aspect?	Frequency	Percent
Poor network to ask question	5	55.56
language of presentation	2	22.22
Some terms are too technical	1	11.11
Time for asking question is short	1	11.11
Grand Total	9	100.00%

On whether the respondents had ever, a greater majority of respondents (95.33%) never made any contribution or asked question during the programme airing. (Figure 25). Figure 26 shows that, of the nineteen (19) respondents that asked question during the programme, 12 (or 63.16%) received responses, while 7 (or 36.84%) did not receive responses to their questions. Figure 27 presents data on the level of satisfactory responses on questions asked during the programme. The data show that, of the nineteen (19) respondents, 9 (or 47.37%) indicated that they were satisfied with the responses, while 7 (or 36.84%) indicated that they were strongly satisfied with the responses. However, 3 respondents (or 15.79%) of the respondents stated that they were dissatisfied with the responses.
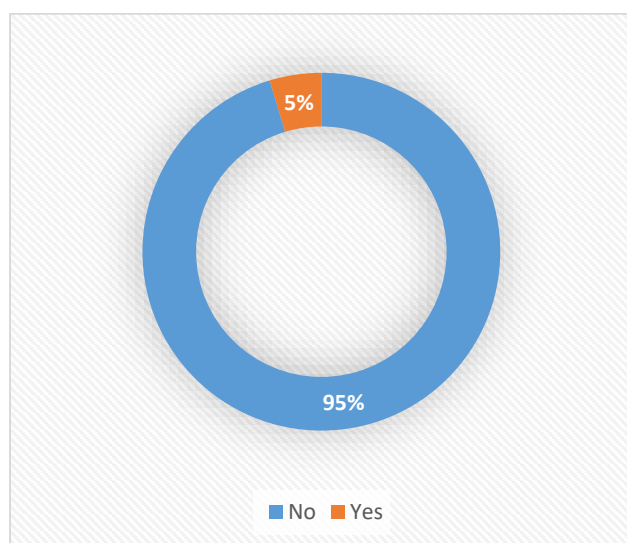

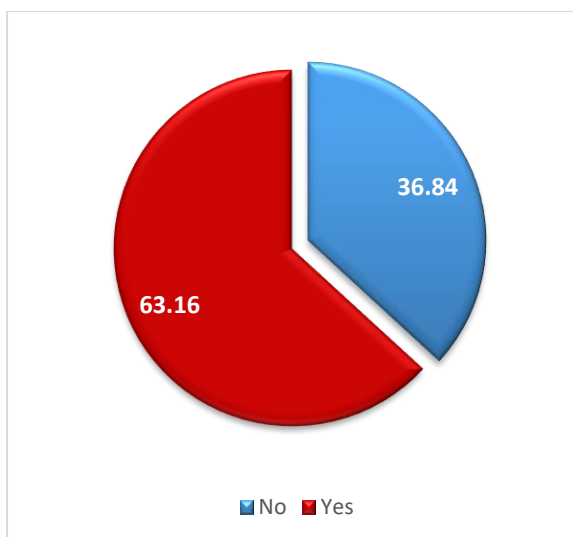**Figure 27: Listener's Feedback during Programme**

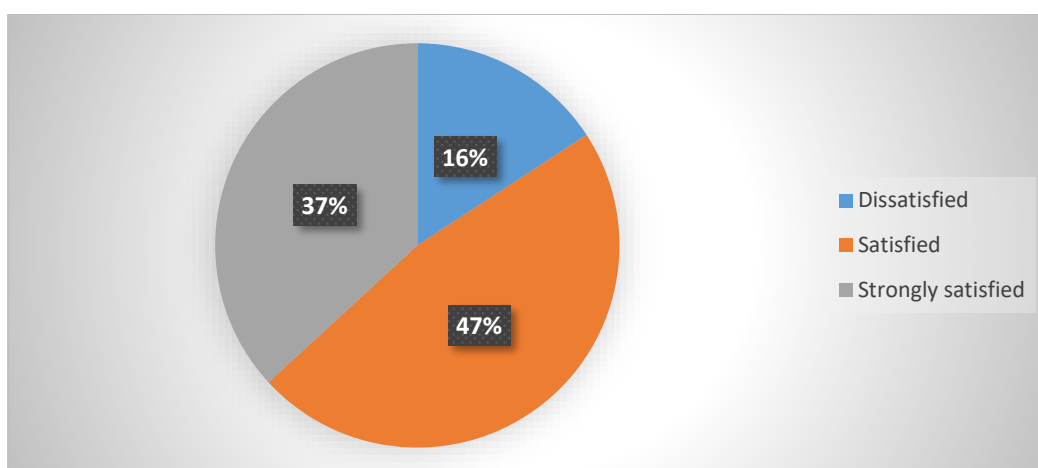**Figure 28: Response to questions during programme**

Figure 29: Level of Satisfaction with Responses to Questions during Programme

Majority of the FGD participants, on the other hand, stated that they listened to Noman Lambu occasionally. An average number of farmers groups in Kano State and southern Kaduna said they were not aware of the programme at all and, therefore, did not listen to it. An insignificant number listened to the programme regularly. These few who listened to the programme regularly stated that its contents were relevant to their agricultural enterprises, as they showcased new farming techniques and productivity-enhancing information. Those who listened occasionally stated that they were constrained by the time of broadcast, which coincided with their busy period in the farm and other economic engagements. One of the FGD session recorded the following statement, for example:

> *Many of us listen to it occasionally because it is aired during the time we should be busy in the farm. We cannot afford to listen to it regularly because we have huge family responsibilities. We do not want to sit around listening to radio while we should be working in the farm or other places to fend for our family. Sometimes we bring the small transistors with us to the farm; but this can be a distraction. (FGD session at Ikara, Kaduna State, Thursday 24th June 2021)*

Other challenges identified by participants were poor signal and low access to radio sets, especially among the women groups. The KII data also supported the result on the constraint posed by time of broadcast. However, while the quantitative data revealed the time of day, the KII data were mainly concerned with the frequency of broadcast. According to a KII respondent:

> *The interval between programmes (one week) currently seems to be too wide; also, the feedback from the audience shows that the one-hour duration of the programme seems not to be adequate for the interactions any longer…. (Excerpt from KII(2) respondents, the radio presenter)*

On comparing *Noman Lambu a Naijeriya* with other agricultural programmes, in terms of language of presentation, the FGD participants rated it 'excellent'. The programme contents were also considered straightforward and highly relevant.

Moreover, a few of the FGD participants said they contributed to the programme by asking questions through phone calls during the programme. The stated that their only feedback channel was the phone-call during the programme, as other channels (such as phone numbers provided at the end of programme to contact resource persons) were largely not reachable when contacted.

Feedback is an important component of the communication process, as it completes the cycle of participation and helps in achieving shared meanings (Adekoya and Tologbonse, 2011). In the current study, feedback from the programme assisted the radio producers to redesign their messages to meet the audience's felt needs. According to the KII data:

> *We determined the needs of the audience by our experiences and feedback from the field (demos, trainings, interactions with farmers, etc), feedback received during the course of the programme, and ongoing farming activities. Moreover, listeners' attention was sustained through the topicality of our discussion (such as the challenge of tuta absoluta on tomato), depth of treatment of issues; and the fact that the programme provided effective and realistic solutions to field problems (such as the use of neem seed extracts for preventing tuta absoluta on tomato). (Excerpt from both KII respondents)*

3.5 Impact of "Noman Lambu a Naijeriya" on Vegetable Productivity/ Activities

In this section descriptive statistics was used to measure the responses of the respondents on each of the variable under consideration, thereafter the weighted sum and mean was generated through sum of respondent's responses in each variable under consideration.

Table 19 shows the impact of Noman Lambu on vegetable farmers in the study area. It shows where the activity of Noman Lambu has positive effect to lives of vegetable farmers. The weighted sum and averages were obtained for each of the provided response and an average of 3 was arrived at. Any response having a value of 3 and above indicates positive effect (i.e. Strongly Agreed) and otherwise for all responses having a value less than 3.

Table 19: Impact and Quality of *Noman Lambu* on Audience agricultural productivity

Impact Options	Weighted Sum	Weighted Mean	Decision
I get more information about new agricultural technology from "Noman Lambu a Naijeriya".	3127	3	Strongly Agreed
"Noman Lambu a Naijeriya" help me to adopt new agricultural technology.	3093	3	Strongly Agreed
I get information on new seed varieties from "Noman Lambu a Naijeriya"	3070	3	Strongly Agreed
I get information on new harvesting methods from "Noman Lambu a Naijeriya"	3021	3	Strongly Agreed
I get information about new pesticides from "Noman Lambu a Naijeriya"	3399	3	Strongly Agreed
I get information about method of fertilizer application from "Noman Lambu a Naijeriya"	3333	3	Strongly Agreed
I get information about mechanize farming from "Noman Lambu a Naijeriya"	3338	3	Strongly Agreed
I record the radio broadcast and replay when needed	2615	2	Strongly Dislike
I share the recorded broadcast to other farmers	2616	2	Strongly Dislike
My output has increased as a result of Noman Lambu programme	3030	3	Strongly Agreed
I gain more income as a result of listening to Noman Lambu programmes	3021	3	Strongly Agreed
My family now have enough food for household consumption as a result of Noman Lambu programmes	2977	3	Strongly Agreed
My family now eats quality food as a result of Noman Lambu programme	2908	3	Strongly Agreed
I receive market information as a result of Noman Lambu programme	2973	3	Strongly Agreed

The results in Table 19 show that the Noman Lambu activity had a positive effect on all impact indicators captured in table 19 except for "I record the radio broadcast and replay when needed" and "I share the recorded broadcast to other farmers" which were Strongly Disliked by vegetable farmers. This indicates that the strongly disliked options were activities that the respondents hardly engaged in; hence, the dislike for them.

3.6 Preferred Medium for Accessing Noman Lambu

This section analysed and interpreted data on respondents' perception regarding the desirability of media for accessing *Noman Lambu*. Table 20 shows that the most preferred station was FRCN (25.11%), followed by Arewa FM (23.41%), Freedom Radio (12.43%) and Nagarta FM (10.81%). This was affirmed by Abdulmumin (2015) that Hausa service of Radio Nigeria Kaduna remains unbeatable in terms of influence and credibility.

With regard to how long the respondents have been exposed to the preferred programmes, they listed, Figure 30 below shows that most farmers (68.01%) selected more than 3 years as they have been familiar with the programme for a while. Similarly, farmers (17.96%) who selected

between 1 to 2 years might be they didn't get to know about the programme early, while some others (10.81%) opted for not too sure as they couldn't say for how long they have been exposed to it. Exposure to a programme, would help determine the rate of adoption as impact on the famers.

Table 20: Stations where preferred programme are aired

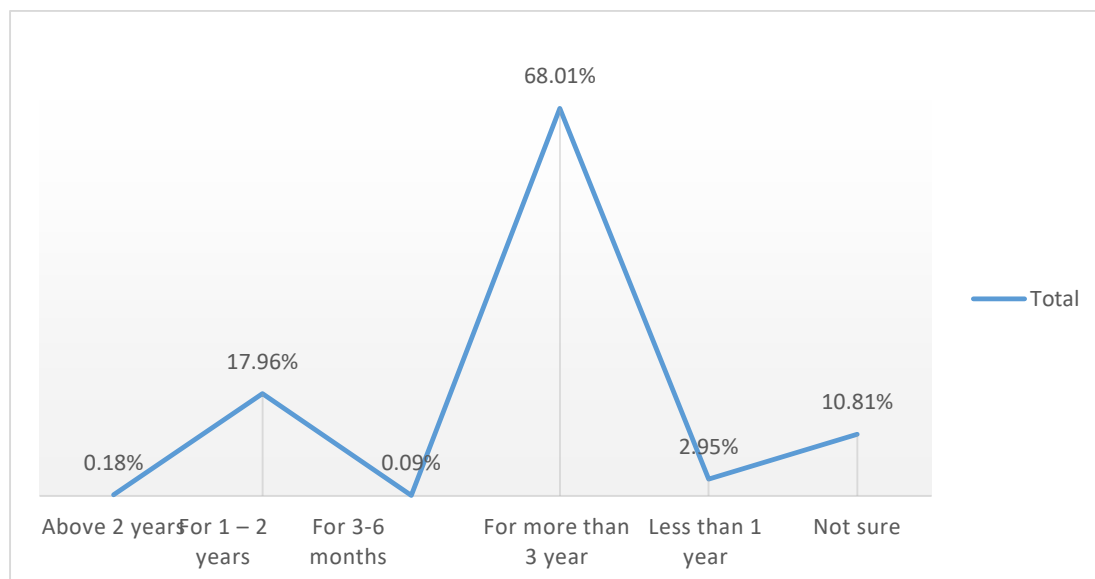| Station aired	Frequency	Percentage
Alheri	70	6.26
FRCN	281	25.11
AM Kano	17	1.52
Arewa	262	23.41
Freedom	139	12.42
Dala	71	6.34
Vision	20	1.79
Pyramid	33	2.95
BBC	6	0.54
FCE	1	0.09
KSMC	27	2.41
Nagarta	121	10.81
Rahama	28	2.50
Karama	1	0.09
Liberty	3	0.27
PrTV	3	0.27
Salama	33	2.95
Wazobia	8	0.71
Grand Total	**1119**	

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Figure 30: Years of exposure to the preferred programme

The KII data somewhat supported the results on the preponderance of FRCN, with regard to its wide coverage and frequency accessibility in the study area. One of the KII respondents stated:

> *We chose FRCN because of its credibility among the people and because of its reach among grassroots people. However, the time of airing was determined by cost, that is, what segment of the day the sponsors could afford. Excerpt of KII (1) response*

> *With regard to the choice of time of broadcast, convenience was considered a more important factors the TWG rather than reach and airtime cost. For the choice of programme presenter, competence in language and interest in subject matter was considered above other factors. The choice was also wholly by FRCN. (Excerpt of KII (2) response)*

Table 21: Preferred Medium to Access Noman Lambu a Naijeriya Programme

Preferred Medium	Weighted Sum	Weighted Mean	Decision
Radio is best media for acquiring agricultural information.	3489	3	Strongly Agreed
Radio assists me in making decisions about adopting new innovations.	3422	3	Strongly Agreed
Radio affects my agricultural inputs purchasing.	3348	3	Strongly Agreed
I adopt new farming technologies after listening to Noman Lambu programmes.	3401	3	Strongly Agreed
Noman Lambu programme assist me adopt new agricultural innovations.	3401	3	Strongly Agreed

The data in Table 21 were analysed using weighted means. The weighted sum and averages of the responses were obtained and an average of 3 was arrived at. Any response having a value of 3 and above indicates positive effect (i.e. Strongly Agreed). The weighted mean of all the tested media in Table 21 were 3, which implies that the respondents strongly agreed with the narrative for each indicator. This further buttressed the level of impact of *Noman Lambu* on the audience/ respondents.

The few FGD participants that listened (regularly and occasionally) to *Noman Lambu* admitted that the programme has positively impacted on their farm productivity. They narrated the technologies gained from various topics presented in the programme, such as preparing nursery beds for tomatoes and rice, as well as transplanting techniques and market opportunities, and how these significantly impacted on their yield and income. Some also explained how the programme had served an 'advisory voice' in their communities.

The KII data also suggested that the programme was quite impactful among the audience. When asked: 'to what extent would you say the programme has facilitated adoption of improve vegetable farming techniques?' the KII (1) respondents explained:

> *For us the programme producers, we can confidently say that our audience are adopting improved farming techniques by the regular calls we receive from them; some have also suggested that the duration of the programme should be extended beyond one hour so that*

they can gain more knowledge. Also, feedback from listeners often say that farming solutions taught on the programme actually worked well when they applied them. We also notice excitements and receive commendations from farmers when they call during the programme. The fact that so many calls are received offline, several days after a broadcast, also speaks of the success of the programme. Furthermore, research data and feedbacks at field days and training events show that farmers now use more improved seeds and organic fertilizers in vegetable farming, using the information got from the programme.

This recorded impact of the programme with regard to the message quality and impact on productivity can be attributed to democratic approach to programme design and implementation. Arokoyo (2014), Leeuwis (2021) Hornik (2015) and Onagwa (2016) have stated that agricultural extension programme design should be democratised to allow for feedback infusion in message contents and dissemination approach so as to achieve maximum impact. Consequently, the KII data showed that the topics for each episode of *Noman Lambu* were not predetermined by the sponsors or producers, but were wholly determined by a Technical Working Group (TWG), which was specifically set up to manage the programme. The TWG comprised subject-matter specialists (SMS) and communication persons. This group designed, planned and executed the production strategy. The message contents were based on certain baseline information from the field. According to the KII data:

The TWG used vegetable guides (on information along the value chains) to design topics for discussion in line with ongoing production activities on the field. The sponsors of the programme gave TWG full control of the programme design and implementation (from preproduction to dissemination activities) And there has been no form of interference in the programme by the sponsors, as the TWG wholly determined the programme contents, time of airing, choice of SMS and duration of programme… (Excerpt from KII(1) respondents, the radio presenter)

The democratisation of programme implementation, according to FAO (2012), allows for joint programme conceptualization, planning and execution by stakeholders (in this case, FRCN, EWS and subject matter specialists).

4.0 SUMMARY OF MAJOR FINDINGS
1. FRCN Kaduna was accessible to about 75% (841) of the 1,120 respondents.
2. About 97% of the 841 respondents who accessed FRCN Kaduna indicated that the signal was good enough for agricultural and other programmes.
3. However, only about 36% (or 407 of them) listened to *Noman Lambu* programme. This is complemented by the fact that only 39% (or 436 of the 1,120 respondents) indicated that they listened to AM/MW, the frequency in which FRCN operates. In addition, 84 of these 436 listeners were non-intentional listeners—as they often tuned into the programme by chance.
4. Nearly 56% (or 627) of the respondents were not aware of *Noman Lambu* radio programme.
5. Majority of the respondents who listened to the programme were satisfied with the time and language of presentation, as well as its format (phone-in). Moreover, a combined majority of 95.57% of them indicated that the programme quality was satisfactory, as the contents were very relevant to their farming enterprises. Many who did not listen to the

programme but were aware of it complained that the time of broadcast was inappropriate, as it coincided with the period of their active work in the farm.

6. The major feedback channel was the phone-call during programme; other channels (such as phone numbers provided at the end of programme to contact resource persons) were largely not reachable when contacted. Also, on several occasions during the programme, callers' requests were not attended to due to call traffic.

7. The choice of FRCN for Noman Lambu by the producers was due to its credibility and reach among grassroots farmers over the years as affirmed by literatures that FRCN Kaduna has over 40 million listeners across the nation. The time of airing was, however, determined by cost, that is, what segment of the day the sponsors could afford.

8. The programme had significant positive influence on respondents' vegetable farming. Improved technologies gained from the programme had significant impact on farm yields and farmers' income.

5.0 CONCLUSION

The study concludes that *Noman Lambu a Naijeriya* radio programme was considerably accessible to the target audience; and that, overall, it impacted significantly on their farm yield and income through the dissemination of information on improved farming technologies. Furthermore, the audience had no challenge with the programme contents, language and presentation format. They were largely satisfied with the programme quality, as they considered the contents very relevant to their farming enterprises.

However, the listenership of the programme (36%) and awareness level (34%) are far below average among the target audience. There is also inadequate feedback mechanism for the audience.

6.0 RECOMMENDATIONS

Based on the findings and conclusion of this study, the following recommendations are proffered towards improving the efficiency and impact of the radio programme:

1. *Consideration for inclusion of FM band to the broadcast channel*: The study has established that, although the coverage of FRCN is wide across the study area, *Noman Lambu* programme was not well accessed, perhaps due to its operation on AM/SW frequency. Moreover, with the integration of FM band in mobile phones and other ICT tools, such as customized earphones and wireless devices has made the band attractive to a large segment of the population, especially the youths—hence, the prevalence of FM band in modern times cannot be overemphasized. It is therefore imperative to add at least one FM station (from among the list of the top 5 most frequently accessed radios above) to FRCN as channel of broadcast. This will increase its reach and impact especially among the youth.

2. *Time of broadcast*: One major finding of this study concerns the fact that a significant number of the respondents indicated that the time of broadcast clashes with the period they are active in their farm. Moreover, the time of airing was found to have been determined by cost rather than by audience availability and accessibility. Consequently, the programme

should be adjusted to a more favourable time-either before active farm work or after the day's work. The times suggested by respondents were between 6:30am or between 8:00pm - 10:00pm, with a possibility of repeat broadcast per week. The repeat broadcasts will offer those who missed the first broadcasts the opportunity to listen in the second; as well as reinforce what was earlier learned by the audience.

3. ***Expanding linkages with other extension agencies for richer content generation***: The findings also included the major constraints to vegetable production in the study area, which were: pests and diseases, poor access to marketing information and infrastructures; poor access to and high cost of inputs (such as credit, improved seeds, and chemicals) and extension contact; and inadequate irrigation facilities/ lack of capacity in efficient water management skills. The producers should leverage the vast information database, publication and linkages within the Nigerian agricultural extension and advisory landscape, liaising with such bodies as NAERLS and state ADPs, to develop rich contents for addressing these constraints.

4. ***Adopting a More Participatory Method of Production/Presentation***: The finding is that farmers mainly play the audience in the studio environment, participating only through the phone-in component of the programme. FAO (2012), Arokoyo (2014), Hornik (2015) and Onagwa (2016) have shown that farmers are more motivated to adopt disseminated technologies when they hear experiences of other farmers; in other words, the farmers are more open to change when they perceive that extension personnel have regard for their opinions. Therefore, *Noman Lambu* producers should adopt a more participatory approach to the programme by frequently inviting farmers to the studio to present their experiences and interact with their fellow farmers. This way, the impact of the programme would become more home-grown and sustainable.

5. ***Leveraging on the National Farmers Helpline as additional feedback channel***: The feedback channel should be strategically expanded to include more platforms such as the National Farmers Helpline (NFH) to cater for farmers especially while the *Noman Lambu* is off-air. Nigeria has developed a robust agricultural advisory database integrated into a farmers call centre, with headquarter in Zaria, Kaduna State for the purpose of attending to real-time farmers' needs. Therefore, the radio programme can link up with NAERLS to use this facility alongside other feedback channels.

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