

## **Fostering Community Engagement in Horticultural Research Libraries: Bridging Knowledge Gaps through Collaborative Connections**

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### **Abstract**

*Libraries in Horticultural Research institutes are pivotal in knowledge dissemination, innovation, and community development. Their vast resources notwithstanding, the engagement of these libraries with their surrounding communities remains inadequate, leading to significant knowledge gaps. This study investigates how the National Horticultural Research Institute (NIHORT) library can leverage community engagement strategies to bridge these gaps. Using a case study analysis, the study examines current practices, identifies stakeholders' knowledge needs, and proposes collaborative strategies for enhanced community engagement. Secondary data was obtained from the library's records on the use of the Institute's production guide in educating farmers and home gardeners. Data was also obtained from the institute's social media handles on Facebook, Instagram, X (formerly Twitter) and YouTube. The study investigates what the library has done as regards community engagement between the year 2023 and 2024, the data obtained was used to identify successful community engagement programs, as well as best practices and challenges in engaging diverse audiences. The NIHORT Library engage its community via selective dissemination of Information, capacity buildings, trainings, orientation programmes, outreaches etc. To achieve these, various communication tools like the social media, radio, television, production guides are used. Findings reveal that the most frequently used communication tool is the production guide and the social media. The T.V and radio programmes were used occasionally. The library also assists extensionists occasionally in capacity building training programmes and outreaches to farmers in the institute's adopted villages and its environs. The findings of this study will contribute to a framework for strengthening community engagement efforts in horticultural libraries as critical connectors in the knowledge ecosystem, thereby fostering communities that are inclusive, knowledgeable, and empowered to tackle problems like food security and climate change, ultimately promoting sustainable growth and horticultural innovation.*

**Keywords:** Collaborative Connections, Community Engagement, Horticultural Research Libraries, Sustainable Development.

### **Introduction**

Horticultural research libraries are central to the dissemination of scientific knowledge and innovations that drive the agricultural sector. Their ability to connect researchers, policymakers, and practitioners with relevant information is vital for addressing agricultural challenges (Aina, 2017). However, despite their wealth of resources, many agricultural research libraries,

particularly in developing countries, are underutilized due to a lack of community engagement (Idiegbeyan-Ose et al., 2016).

The National Horticultural Research Institute (NIHORT) Library house specialized information resources designed to support agricultural research and practice. This library has the potential to act as bridge between research outputs and community needs. Effective community engagement strategies can help address the information needs of local farmers, researchers, and other stakeholders, fostering the adoption of innovations and practices critical for sustainable agricultural development (Echezona et al., 2011).

### **Objectives of the Study**

The study's objectives are to:

1. Assess the current community engagement practices of NIHORT library.
2. Evaluate the effectiveness of library resources and services in community.
3. Propose collaborative strategies for enhancing community engagement in agricultural research libraries.

### **Literature Review**

This study aims to explore how community engagement strategies can transform NIHORT library into knowledge hubs that address specific information needs. The study emphasizes the role of collaboration, inclusivity, Community engagement in horticultural research libraries and initiatives plays a crucial role in fostering sustainable development and bridging knowledge gaps. Libraries can serve as critical connectors between academia and communities, developing collaborative models that address local needs and promote social impact (McCauley & Towle, 2022; Howard & Koenig, 2024).

Engaging communities in horticultural activities enhances resource management, boosts productivity, and ensures long-term project viability (Srinivasu et al., 2024). However, research gaps exist in consumer horticulture, particularly in basic horticultural practices and public gardens' involvement (Krishnan et al., 2022). To address these challenges, strategies such as participatory planning, local knowledge integration, and inclusive decision-making processes are essential (Srinivasu et al., 2024). By actively involving community members and developing partnerships with various organizations, horticultural projects can be tailored to meet local

needs, enhance sustainability, and promote social well-being (Srinivasu et al., 2024; Howard & Koenig, 2024).and co-creation in fostering sustainable agricultural practices and bridging knowledge gaps.

## **Methodology**

This study employs a qualitative case study with document analysis as the data collection method. This design will help to explore and analyse community engagement practices in detail within the specific context of the NIHORT library.

The study will make use of secondary data that already exists in the Library to comprehensively explore community engagement practices in NIHORT library:

### **1. Case Study Analysis**

This examines the existing services, outreach programs, and community engagement initiatives of NIHORT Library (Yin, 2018).

### **2. Document Analysis**

Library reports, user feedback records, and other documents will be reviewed to identify patterns and trends in library usage and outreach efforts (Bowen, 2009).

## **Interpretation of Results**

### **Use of Production Guides**

As part of community engagement practices, the NIHORT Library makes use of the NIHORT brochure and production guides of various NIHORT mandate crops for example corchorus, Pineapple, Tomato, Citrus, Onion, Telfairia Occidentallis (Ugwu), Amaranth etc. to achieve the aim of enlightening the community on how to produce horticultural crops, this includes farmers and home gardeners. These production guides are also used during capacity building programs and outreaches to rural communities.

The table below shows its use by the NIHORT library between the year 2023 and 2024. There was a significant increase in the use of the production guide in the year 2024. A total of 144 was issued out in the year 2023 while a total of 1421 was issued out in the year 2024.

**Table 1: Use of Production Guide in the year 2023 and 2024**

<b>MONTH</b>	<b>NO OF COPIES ISSUED OUT (2023)</b>	<b>NO OF COPIES ISSUED OUT (2024)</b>
JAN	3	8
FEB	12	85
MAR	6	154
APR	23	32
MAY	-	18
JUN	-	-
JUL	17	330
AUG	-	16
SEP	72	2
OCT	-	-
NOV	1	416
DEC	10	360
<b>TOTAL</b>	<b>144</b>	<b>1421</b>

### **Social Media Engagement**

The Institute has successfully established a professional and engaging presence on social media platforms. The management of social media was successfully done on four (4) social media handles which include WhatsApp, YouTube, Instagram, Facebook and Twitter. Analysis was done to test for community engagement based on the activities, engagement patterns and platform-specific trends. Overall, the institute's proactive approach has successfully projected a professional and engaging image, contributing to the institute's broader communication and outreach effort as shown in Tables two to six.

Different levels of engagement are shown in the Facebook activity table (Table 3), with noticeable peaks for particular topics. Significant engagement peaks appear to have occurred in April (334 likes, 60 comments, and 43 shares) and December (389 likes, 27 comments, and 126 shares), according to the 2023 data. Activity was much higher during these months, most likely as a result of important institutional events. Similar levels of involvement were observed in June (233 likes, 48 comments, 16 shares) and October (157 likes, 14 comments, 38 shares).

Contrarily, the 2024 dataset which provides a more event-specific insights revealed that the valedictory lectures by Dr. Olajide Taiwo on October 1, 2024, received the most engagement (73 likes, 3 shares, and 42 comments). These were closely followed by the August 16, 2024, valedictory lecture (53 likes, 2 shares, 43 comments) and the November 7, 2024, Corchorus release event (68 likes, 11 shares, 23 comments). These results imply that audiences respond more favorably to events featuring well-known speakers or hands-on instruction than to posts that are only informational.

**Table 2a: Activities on the Institute Facebook Platform (2023)**

Month	Like	Comment	Share
Jan 23	40	0	5
Feb 23	45	0	0
Mar 23	134	18	18
Apr 23	334	60	43
May 23	80	11	8
Jun 23	233	48	16
Jul 23	34	4	2
Aug-23	79	14	6
Sep-23	132	16	37
Oct-23	157	14	38
Nov-23	54	3	20
Dec-23	389	27	126

Date	Topic	Like	Share	Comments
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**Table 2b: Activities on the Institute Facebook Platform (2024)**

16 January, 2024	The role in revitalization of Nigeria Economy by Professor Charles Oluwaseun Adetunji	13		
2 February, 2024	Their role in Revitalization of Nigeria Economy by Prof Charles Oluwaseun Adetunji.	2		
13 February, 2024	Capacity building training for Leaders and Administrators.	17	5	5
2 March, 2024	Climate smart Agricultural Practices: An imperative for horticultural Farmers	3		1
27 March, 2024	Nihort NG Ibadan is the Valedictory lecture by Dr Ephraim Ifeanyi Nwanguma	7		2
5 April, 2024	Promoting onion production in the rain forest zone of Nigeria	8		
10 April, 2024	EID Al Adha	3		
13 April, 2024	The role of value addition in Horticultural crop produce: NIHORT intervention.	8		
6 May, 2024	NihortNG and IITA_CGIAR has brought stakeholders along the plantainvalue chain in Nigeria for discussions on market segmentation and product design to support plantainbreeding.	9	1	
6 May, 2024	Breakout session to update country level market segments and align priority segments	3		
16 May, 2024	Horticultural Waste Utilization: An advancement to food and nutrition security in improved Livestock Production by Dr Kenneth-Obosi	5		
20June,2024	Molecular Biology: A Viable Tool in Crop Protection and Improvement for Enhanced Food Security.by Dr Olawale Arogundade	33	1	6
20June,2024	A 3-day intensive Training Programme on plant Tissue Culture for Commercial	31	7	8

	Application			
4 July, 2024	Community outreach at Oluyole FM by I.B Adeoye and O.A.K Olomide	5	3	14
18 July, 2024	Sesbanla pachy carpa Rural and Agricultural Resources			
16 August, 2024	Valedictory Lecture untapped Resources in Farm Management	53	2	43
27 August, 2024	Valedictory Lecture by Dr Abayomi A. Olaniyan	53	3	28
19 September, 2024	Reporting in monitoring and evaluation process By Dr Amao	56	4	18
26 September, 2024	International Conference on OKRA round Table	2	1	5
1 October, 2024	Valedictory Lecture By Dr Olajide Taiwo	73	3	42
16 October, 2024	Training on Pineapple Juice Production	30	5	12
31 October, 2024	HAY batch 2 Graduation	38	4	7
7 November, 2024	Corchorus release	68	11	23
27 November, 2024	Fellow Award by Dr Olagorite	64	3	53
11 November, 2024	Home Garden for residents in NIHORT neighborhood	31	1	1
25 December, 2024	Season greetings	42	3	9

The institute's Twitter (X) page has varying monthly views and often less participation. The months of September (3,127 retweets and 58 likes), October (353 retweets and 18 likes), and November (443 retweets and 19 likes) of 2023 had remarkably large rises. The 2024 dataset, however, reveals a drop in engagement. January had the most views (2,308) and February had the most (1,304) per month. But by June, engagement had fallen to 98 views, suggesting that audience participation was on the decline.

**Table 3a: Activities on the Institute's X (Twitter) Platform (2023)**



Month	Retweet	Like	View	Share
JAN 23	0	3	1	2
FEB 23	5	15	316	0
MAR 23	12	29	501	0
APR 23	16	28	746	1
MAY 23	8	20	572	13
JUN 23	16	26	607	3
JULY 23	2	5	143	4
AUG 23	400	14	1	7
SEPT 23	3127	58	4	18
OCT 23	353	18	3	6
NOV 23	443	19		8
DEC 23	406	14		10

**Table 3b: Activities on the Institute's X (Twitter) Platform (2024)**

MONTH	VIEWS	LIKES	COMMENTS	SHARE
Jan-24	2308	10		5
Feb-24	1304	25		12
Mar-24	152	1		1
Apr-24	103	2		
May-24	358	7	2	4
Jun-24	98	2		1
Jul-24	300	7		4
Aug-24	161	4		
Sept-24	252	7		2
Oct-24	181	1		

Nov-24	242	9	2
Dec-24	81	3	

In 2023, response rates fluctuated, with some months showing lower engagement, such as January (3 requests, 0 responses) and February (18 requests, 0 responses). This indicates periods of limited responsiveness. The highest request count in 2023 was June (79 requests), but only 53 were responded to, reflecting a gap in responsiveness. In 2024, there was a significant increase in engagement in May (133 requests, 133 responses), showing improved communication efficiency. The increase in response rate from 2023 to 2024 indicates operational improvements in handling inquiries, especially in May and December.

WhatsApp's straightforward and intimate communication style has worked better than larger networks like Facebook and Twitter.

**Table 4a: Activities on the Institute's WhatsApp Platform (2023)**

Date of Post	Request	Response
Jan 2023	3	0
Feb 2023	18	0
Mar 2023	54	41
Apr 2023	48	35
May 2023	50	39
June 2023	79	53
July 2023	61	45
Aug 2023	61	60
Sep 2023	14	14
Oct 2023	50	47
Nov 2023	32	32
Dec 2023	36	36

**Table 4b: Activities on the Institute's WhatsApp Platform (2024)**

Month	Request	Response
Jan 2024	41	41

Feb 2024	38	37
Mar 2024	39	37
Apr 2024	42	42
May 2024	133	133
June 2024	81	77
Jul 2024	15	11
Aug 2024	52	49
Sept 2024	58	51
Oct 2024	32	24
Nov 2024	48	35
Dec 2024	49	49

Different levels of success are shown by YouTube analytics (Table 5). The NIHORT In-House Outstation Report (119 views), Gene bank Management: Making greater use of Agricultural biodiversity (171 views), and the 2023 Annual In-House Review and Planning Meeting (253 views) generated the most engagement for 2023. The high popularity of these videos indicates that there was a lot of interest in the information pertaining to research and institutional planning. On the other hand, A Day of Tribute for Dr. Bernard Okafor (345 views) and Next Generation Scientists: Their contribution in revitalizing Nigeria's economy (188 views) were the most viewed films in 2024. Training courses and research talks, including Dr. Kenneth Obosi Olusumbo's NIHORT Seminar Series (118 views), also did rather well.

**Table 5a: Activities on the Institute YouTube Platform (2023)**

Date	Title	Views
11-Jan-23	Day 1: Horticultural Academy for youth training (HAY)	15
12-Jan-23	Day 2: Horticultural Academy for youth training (HAY)	9
2-Mar-23	Research scientist performance and assessment personal development	33
20-Apr-23	Genebank Management: Making greater use of Agricultural Biodiversity	49
28-Apr-23	Stakeholders' meetings on new outbreak of Tuta Absoluta	26
4-May-23	Promoting Inclusive and sustainable Horticultural value and Development	44

25-May-23	Participatory actions research as an approach to Agricultural Research for development	38
8-Jun-23	Making Nigeria Apple Hub of West Africa	41
22-Jun-23	Cut flower production in Nigeria: Opportunities and Challenges	44
20-Jul-23	Enhancement of seed yield and quality in selected vegetables crops for maximum productivity	105
10-Aug-23	Administrative principles, procedures and practices: The public service rule	32
17-Aug-23	Laboratory hazards, causes preventions and control	47
24-Aug-23	Managing fruits flies in Nigeria	46
9/9/2023	NTA New for Agbede Empowerment Training by NIHORT	38
13/09/2023	Administrative Principle Procedures & Practices: The Public Servant Rule	66
15/09/2023	Prossiva: Stakeholder Engagement of Plantain Seed Value Chain.	13
22/09/2023	Gene bank Management: Making greater use of Agricultural biodiversity	171
28/09/2023	Elevating Excellent unlocking the Pathway to success Q&A	42
29/09/2023	Effective Communication: Bedrock to successful Personnel Management.	77
18/10/2023	Horticultural Academy for Youth (Graduation Ceremony)	7
28/11/2023	NIHORT Research's Zoom Meeting	1
29/11/2023	2023 Annual In-House Review and Planning Meeting	253
30/11/2023	NIHORT In-House Outstation Report	119
7/12/2023	Publication Ethics: Promoting Integrity in Research Q&A	20

**Table 5b: Activities on the Institute YouTube Platform (2024)**

<b>Date</b>	<b>Post/Event</b>	<b>Views</b>	<b>Likes</b>
31/1/2024	NIHORT Visit to Adopted Village in Awaye.	5	
2/2/2024	Next Generation Scientists: Their role in revitalization of Nigeria Economy.	188	8
12/3/2024	A Day of Tribute for Dr. Bernard Okafor	345	8
14/03/2024	NIHORT Seminar Series An overview of Bottom Up Cash Planning on Government Integrated Financial Management Information System (GIFMIS) Mrs V. A. Adedipe	60	1
16/03/2024	NIHORT Seminar Series by Dr Kenneth Obosi Olusumbo	118	7

27/3/2024	Securing the Path of Food Security – Fifth Valedictory Lecture	111	
20/06/2024	Molecular Biology: A viable tool in Crop Protection and Improvement for Enhanced Food Security	19	
25/6/2024	Intensive training on Plant Tissue Culture for Commercial Application.	41	4
Jun 20, 2024	MOLECULAR BIOLOGY: A VIABLE TOOL IN CROP PROTECTION AND IMPROVEMENT FOR ENHANCED FOOD SECURITY	22	
Jun 25, 2024	intensive training on Plant tissue Culture for Commercial Application - Opening Session	47	1
Jul 18, 2024	Sesbania pachycarpa DC., a Ruderal and Agricultural Resource	24	
Aug 8, 2024	NIHORT's Personal Meeting Room	36	
Aug 16, 2024	VALEDICTORY LECTURE: "UNTAPPED RESOURCE IN FARM MANAGEMENT: THE WAY FORWARD" BY POPOOLA J. OLAOLUW	49	
Aug 28, 2024	VALEDICTORY LECTURE BY DR OLANIYAN ABAYOMI	40	
Sep 19, 2024	REPORTING IN MONITORING AND EVALUATION PROCESSES.	39	1
Oct 8, 2024	AWARENESS CREATION AND SENSITIZATION ON THE GENDER MAINSTREAMING OFFICE	23	
Oct 17, 2024	Bibliotherapy: Exploring the Therapeutic Use of Literature by Dr. Fagbola Bolanle Oluyemisi	25	1
Oct 23, 2024	CAPACITY BUILDING OF LEADERS AND ADMINISTRATOR	65	1
Oct 31, 2024	HORTICULTURAL ACADEMY FOR YOUTHS (HAY) GRADUATION OF BATCH 2 HAY TRAINEES	34	
Nov 21, 2024	CAREER PROGRESSION REQUIREMENTS OF STAFF	29	
Dec 11, 2024	Inauguration of Training for Community on Home	26	

### Gardening- NIHORT Neighborhood

Dec 17, 2024 NIHORT Year 2024 End of Year Award Ceremony 80

Dec 30, 2024 ENHANCING PUBLIC ORGANIZATIONAL GOVERNANCE AND PERFORMANCE 29

Activity on the Instagram page (Table 6) was relatively low. In 2023, posts featuring research projects, training sessions, and institutional greetings saw moderate engagement. The highest recorded engagement came from “Workshop for Chief Executives on Advancing Genome Editing Research in Nigeria” (25 likes) and “Research and Production: Opportunities and Challenges” (24 likes), suggesting that research and innovation-related content resonated well with the audience.

**Table 6a: Activities on the Institute’s Instagram Platform (2023)**

Date	Title	Likes
11-Jan-23	Horticultural Academy for Youth (HAY)programmes	19
26-Jan-23	Research and production: Opportunities and Challenges	24
30-Jan-23	NIHORTNg congratulates Dr Simeonehui on his appointment as the new @IITA_CGIAR general and CGIAR Regional Director for Africa	7
30-Jan-23	Dr D.E Akin-Idowu from @nihortNg among the class1 of the AFPBA CRISPR course:	9
14-Feb-23	NIHORT celebrates the 2023 International Day of Women and citris inn science promoted by the United Nation “Bringing communities forward for sustainable and equitable development”	23
13-Mar-23	Workshop for Chief Executives and experts on “Advancing Genome Editing Research in Nigeria”	25
14-Mar-23	Horticulture for Life: Vegetables & Fruits	15
16-Mar-23	Project implementation & Management for sustainable development impact	20
21-Mar-23	Banana	20
27-Mar-23	Pawpaw ( <i>Carica papaya</i> )	15
3-Apr	Avocado Pear <i>Peersea Americana</i>	8
4-Apr-23	IOM NIHORT focal person	13
9-Apr-23	Easter celebration	6

18-Apr-23	The African star apple	14
20-Apr-23	Genebank management: making greater use of agricultural bio- diversity	21
21-Apr-23	<i>Eid el fitri</i> season greeting card	9
26-Apr-23	Tuta Absolute	7
22-May-23	Tetrapheura	4
25-May-23	Participatory action research as an approach to Agricultural Research for Development.	
1-Jun-23	Basil	6
5-Jun-23	Pepper production & Utilization at the Edo state Agricultural development Programme (ADP) monthly Technical Review meeting in Benin city	10
22-Jun-23	Cut flower production in Nigeria: Opportunities and challenges	14
28-Jun-23	Season greetings from NIHORT	4

**Table 6b: Activities on the Institute's Instagram Platform (2024)**

DATE	POST/EVENT	COMMENTS	LIKES
24th January 2024	NYSC corp members agro-allied CDS group engagement visit to HIHORT on Wednesday 24th January, 2024.		18
2 February 2024	Next Generation Scientists: Their role in revitalization of Nigeria Economy		14
27 March 2024	Valedictory lecture by Dr Ephraim Ifeanyi Nwanguma.		15
6 April 2024	Promoting Onion Production in the rainforest zone of Nigeria		4
10 April 2024	Edl Kabril Wishes		10
6 May 2024	<u>Nihort</u> and <u>IITA CGIAR</u> on the plantain value chain in Nigeria for discussions on market segmentation and product design to support plantain		22
25 to 27 June, 2024	A 3-day intensive Training programme on plant tissue culture for commercial application		10

4 July 2024	Community Outreach, on Enlightened the public on Improved Tomato Production at Oluyole 98.5FM, Ibadan.	1	14
16 August 2024	Valedictory Lecture: Untapped Resource in Farm Management: The Way Forward		13
28 August 2024	VALEDICTORY LECTURE By DR ABAYOMI A. OLANIYAN Topic: Citrus Production Practices in Nigeria	1	7
19 September 2024	Seminar series by Dr Ifeoluwapo AMAO (PhD) titled: REPORTING IN MONITORING AND EVALUATION PROCESSES	1	14
1 October 2024	VALEDICTORY LECTURE TOPIC: Enhancing Horticultural Extension Research for Development in Nigeria: Addressing Intricacies and Intrigues By Dr Lawrence o. Olajide-Taiwo		
25 October 2024	Hort Consultancy Venture Limited present* 3-Day Training on Pineapple Juice Production		5
31 October 2024	HORTICULTURAL ACADEMY FOR YOUTHS (HAY) GRADUATION OF BATCH 2 HAY TRAINEES		5
7 November 2024	GREAT NEWS! National Horticultural Research Institute releases two improved Corchorus varieties.		13
27 November 2024	DR. OLAGORITE ADETULA Erudite research director and scientist at the National Horticultural Research Institute has been awarded and inducted as a Fellow, Genetics Society of Nigeria		20
11 December 2024	Home Gardening for Residents in NIHORT neighborhood		12
25 December 2024	Season's greetings from all of us		10
<b>TOTAL</b>		<b>3</b>	<b>65</b>



## **Discussion of Findings**

### **Current Community Engagement of NIHORT Library**

In both years, December saw high activity. This implies that the social media audiences engage more on some content or activities than others, depending on the type of activity and the season where the activities were carried out. This aligns with studies indicating that end-of-year events, holidays, and institutional milestones drive increased online interactions (Adeoye and Opoola, 2021). This finding also agrees with the submission of Uduak, Johnson and Okafor (2020), who found Facebook to be a top agricultural outreach medium, demonstrating Facebook's ability to spark conversations and interactions.

Data obtained from the institute's X platform implies that rising participation was influenced by important institutional announcements or popular subjects. Engagement peaked intermittently in 2023, but it declined steadily in 2024, with few contacts by the middle of the year. This can be a sign of less relevant material or a deficiency in marketing tactics. The high engagement in September 2023 (3,127 retweets) aligns with the study of Aker et al. (2019) where institutional announcements, research breakthroughs, or partnerships were discovered to generate spikes in interactions. The decline in Twitter engagement discovered in this study corroborates the findings of Adeoye and Opoola (2021) who stated that that research-based institutions struggle with engagement on Twitter due to its fast-paced nature and algorithm changes prioritizing trending content over static institutional posts.

On the institute's YouTube channel, the 2023 engagement data revealed that structured research-based videos, planning meetings, and administrative reviews gained traction. In 2024, tribute events and scientist-led discussions were more popular, indicating a shift toward audience interest in leadership and research recognition. The platform's capacity to present comprehensive and aesthetically stunning content is yet neglected. Using multi-platform techniques to promote videos could increase their reach and visibility. This discovery aligns with the findings of Uduak, Johnson and Okafor (2020) who posited that audiences engage more with content involving expert discussions and tribute events.

While research-oriented posts attracted more attention on the institute's Instagram page in 2023, 2024 data suggest a stronger interest in institutional collaborations and community-based

outreach. Posts featuring valedictory lectures or leadership activities gained relatively high engagement in 2024, reflecting a preference for personality-driven or leadership-themed content. Instagram has a lot of unrealized potential for visual storytelling in horticulture, including presenting research procedures or community effects. Making use of its aesthetic appeal seems consistent with the submission of Adeoye and Opoola (2021), that imagery improves audience connection. The high engagement on community-oriented posts in 2024 gives credence to the assertion of Uduak, Johnson and Okafor (2020) that interactive and visually engaging content (e.g., high-quality images, reels, and short videos) perform better on Instagram.

### **Effectiveness of Library Resources and Services in Community**

The data obtained from the engagements on the institute's social media platforms was used to determine the effectiveness of library resources and services in the neighboring community. According to 2023 and 2024 Facebook analytics, it is the best medium for sparking conversation, generating interest, and expanding outreach related to libraries. Posts pertaining to community-based projects, talks, and seminars routinely garnered more likes and comments. This demonstrates how much more community involvement occurs when the library matches its content with interesting subjects and reliable people. The WhatsApp statistics for 2023 and 2024 demonstrate a discernible improvement in the library's ability to handle requests and information sharing. WhatsApp's ability to enable prompt, straightforward community service is demonstrated by the notable increase in request-response efficiency in 2024, particularly the 100% response rate in May and December. This suggests that WhatsApp might be used as a support desk tool for libraries. These findings corroborate the submission of Adeoye and Opoola (2021) that social media platforms such as Facebook and WhatsApp are essential in maintaining two-way communication and offering responsive library services to the parent institution and surrounding communities. The findings also lend credence to that of Uduak et al. (2020) who found that social media platforms possess the strength to enhance participation in educational initiatives and public awareness in the agricultural and research sector.

YouTube's effectiveness as a long-term learning resource is confirmed by its tribute lectures, internal gatherings, and expert-led debates. High viewership content (e.g., 345 views for Dr. Bernard Okafor's memorial) suggests that the library's digital learning content finds lasting value when addressing important themes, even when daily involvement was inconsistent. Instagram

data indicates that posts about announcements, fieldwork, and trips have a reasonable level of success. The platform's emphasis on visuals makes it perfect for demonstrating the effects of library-related initiatives (such as enhanced crop varieties or training sessions). Posts with weak visuals, however, performed poorly, suggesting that more media-rich material is required to optimize reach. These findings are in consonance with Obasi and Nwachukwu (2019) who submitted that Instagram usage in academic libraries significantly increased community interests when information is passed across with the aid of high-quality images.

### **Collaboration Strategies for Enhancing Community Engagement**

Based on the data collected and the interpretation given in the previous sub-sections, this study submits that several collaborative strategies can be adopted to encourage community engagement in horticultural research libraries and similar institutions. Some of these strategies are:

1. Given the strong engagement performance of Facebook and YouTube, libraries could collaborate with farmers, researchers, and local influencers to produce video documentaries, live Q&A sessions, and community success stories in order to promote relatability and diversity. User-generated content such as community gardening advice or endorsements from previous training attendees should also be promoted to strengthen emotional ties and trust.
2. With the consistently high request-response ratio recorded on the WhatsApp platform, this study suggests that WhatsApp can be used as a collaborative extension and feedback tool where segmented groups (youth farmers, local garden clubs, agro-entrepreneurs, etc.) can be created for selective dissemination of information. This can also foster real-time consultations with library staff or discipline specialists to discuss agricultural challenges as they emerge.
3. Libraries can launch monthly campaigns around central themes (e.g., "Nutrition and Home Gardening", "Climate-Smart Agriculture") coordinated across all the social media channels. Hashtags, polls and short quizzes can be integrated to track engagements and biases.
4. Research institutes can collaborate among one another and with partner institutes such as agricultural extension agencies and universities to co-host live webinars, training

sessions and digital clinics. These sessions can be promoted across social media platforms to increase visibility and increase institutional credibility.

5. Data-driven community feedback loops such as regular online surveys or comment drives can be put in place to determine the topics or services required by the communities.
6. Digital-savvy youths from the Horticultural Academy for Youths (HAY) and NYSC can be employed and encouraged to manage social media platforms such as Instagram, Twitter and even Tik-Tok.

## **Conclusion**

Different levels of audience engagements are revealed by the investigation of the institute's social media engagement across several platforms; Facebook and Instagram show changes in engagement trends between 2023 and 2024. Even though Facebook was still the most engaging medium, its audience participation dropped in 2024, necessitating tactical improvements. Research-driven postings found it difficult to garner significant interactions on Instagram, but visually appealing and community-focused content fared better. The need for better content strategy was highlighted by the uneven engagement levels on other platforms, like Twitter and YouTube.

## **Recommendations**

The study presents the following recommendations due to the findings.

1. Multimedia content such as infographics, high-quality images, short videos, and live sessions should be leveraged to improve audience engagement across platforms.
2. Cross-promotion of content across multiple platforms should be practiced to maximize visibility.
3. Content dissemination should be aligned with seasonal trends and high-engagement periods like December and April.
4. Direct engagements with audience should be fostered through comments, discussions and user-generated content initiatives.
5. Periodic review of engagements should be conducted to identify successful content strategies and areas needing improvement.

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