

Value Chain Analysis of Social Agriculture in Nigeria



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Executive summary

This study investigates “social agriculture”—the use of social media platforms for information exchange, support networks, and agricultural markets—in Nigeria. The research was commissioned by Caribou Digital and the Mastercard Foundation as part of the Platform Livelihoods Project and was carried out by Kilimo Source and Habitus Insight. This study builds on a preliminary exploration of social agriculture in Kenya in (2021–22). The findings and recommendations of this study cater to various stakeholders, including social media platforms, governments, foundations, researchers, and practitioners of social agriculture.

Using qualitative research methods, data, and analysis, the study focuses on three agricultural value chains in Nigeria: cassava, snail, and broccoli. The research employs value chain analysis to explore how various characteristics, such as governance, network effect, specific qualities of products, and access to logistics, finance, and information, shape the dynamics within these value chains and influence the usage of social media platforms. The research documents the strategies and practices of social agriculture, pursued via social media platforms, to address challenges associated with the characteristics of these value chains. It also reports on the livelihood outcomes and associated risks experienced by participants in these value chains.

The social agriculturalists in this study have been using social media for business purposes for 2 to 13 years, with an average duration of 6 to 8 years. Participants in the study are predominantly well educated, often holding advanced qualifications, though not necessarily in agriculture. They employ their diverse expertise, including non-agricultural knowledge, to excel in social agriculture. The research reveals that social agriculturalists often occupy multiple roles within their value chains, a trend correlated to the configuration of the value chain. Value chain characteristics and configurations influence the use of social media in various ways.

The cassava value chain, characterized by its scale, complexity, and maturity, exhibits more formal governance dynamics, which influence the use of social media for the creation and maintenance of vertical value chain linkages required to bring the product to market. Social media platforms are also used for advocacy, collective action, and the formation of cooperatives, which can influence governance dynamics. The snail and broccoli value chains, being smaller, simpler, and less mature, exhibit more informal structures, leading to the use of social media platforms for the creation and maintenance of horizontal linkages for the transfer and co-creation of knowledge to address information gaps. The study emphasizes the importance of collaborative and supportive relationships facilitated by social media for overall value chain competitiveness. Social media platforms also offer novel marketing channels with substantial potential for agricultural products.

The location of production and consumption, product perishability, and access to logistics pose constraints to value chain upgrading, particularly for broccoli. Social media strategies like securing markets in advance, coordinating logistics, and diversifying product offerings help overcome these constraints.

Access to finance is a common constraint to value chain upgrading, with self-funding being a prevalent strategy, especially in smaller and less mature value chains like broccoli and snail. Social media serves as a platform for networking with investors, discovering grant-funding opportunities, and crowdfunding, thus facilitating access to capital.

Social media platforms are used differently by different value chain actors, depending on their needs and roles. X (formerly Twitter) and LinkedIn are preferred for business development and networking, while Instagram is used for visual marketing to end consumers. Facebook is commonly adopted by farmers and input suppliers due to its simplicity and broad reach. YouTube is a significant platform for long-format video training, primarily used by information suppliers. Various types of content (e.g., text, images, videos, audio) are leveraged on social media to serve different purposes throughout the value chain. Trust remains a significant issue due to fraud and misinformation, and actors employ strategies like vetting, due diligence, verification, and proving authenticity to mitigate these risks.

Livelihood outcomes for social agriculturalists include increased incomes, expanded networks, more efficient interactions, and reduced operational costs. Participants reported significant income boosts ranging from 40% to 99%.

Overdependence on social media platforms, however, introduces challenges such as excessive time consumption, online harassment, and risks associated with platform bans and blackouts. To mitigate these downsides, many social agriculturalists diversify their platform usage, maintain offline databases, and build strong offline relationships.

The study highlights various general constraints to agricultural and public sectors, as well as those specific to social agriculture and other platform livelihoods. These key recommendations aim to promote the sustainable and effective use of social media platforms in agriculture, ultimately benefiting agriculturalists and the sector as a whole.

- 1 **Infrastructure enhancement:** Policymakers should prioritize addressing infrastructural deficiencies that hinder the distribution of agricultural products. Investment in transportation and storage facilities can significantly benefit the agricultural sector.
- 2 **Efficient financing through social media:** Access to capital is crucial for the growth of small-scale ventures and broader economies. Financial institutions and government agencies should provide better financial support to small-scale agriculturalists. Institutions offering such support should use social media to publicize funding opportunities. Stakeholders can also leverage these platforms to access financing from various sources, including investors and crowdfunding.
- 3 **Informational and training resources:** Social agriculture best practices should be formalized to guide social agriculturalists in effectively using social media platforms, to reduce risks and improve positive outcomes.
- 4 **Strategic governance interfaces:** As social media becomes a primary mode of communication in Nigeria's agricultural community, these platforms can serve as effective channels for policymakers to engage agricultural stakeholders in decision-making processes. Stakeholders should more extensively use social media platforms for advocacy, inclusion, and collective action to influence governance, whether relating to policies or value chain dynamics.
- 5 **Horizontal linkages for knowledge transfer:** Stakeholders in emerging or information-scarce value chains should follow the example of the snail value chain to bridge knowledge gaps through social media-enabled peer networks.
- 6 **Market access:** Social media platforms should be maximized for accessing new markets and securing markets in advance of harvest to mitigate potential losses.
- 7 **Significance of platforms:** Social media platforms should recognize the importance of their products to livelihoods and economies. Enhancements should include secure payment systems, improved language support, real-time translation, and better moderation to tackle issues like fraud, harassment, and misinformation. Policymakers should refrain from implementing politically

motivated social media bans, which can negatively impact platform-based livelihoods and economies.

- 8 **Reducing overdependence on platforms:** Social agriculture stakeholders should avoid overdependence on platforms by diversifying their business models and enhancing their technological skills.

In conclusion, this study underscores the transformative impact of social media on agricultural value chains in Nigeria. It sheds light on the complex interplay between value chain characteristics and the use of social media, offering valuable insights for practitioners in the agricultural sector. Despite the challenges, participants overwhelmingly report that the benefits of social agriculture outweigh the disadvantages.

01 Introduction

This study examines “social agriculture”—the use of social media platforms for *information exchange*, *support networks*, and *markets* for agricultural livelihoods—in Nigeria.

The study was commissioned by Caribou Digital in partnership with the Mastercard Foundation and undertaken by a team of researchers contracted through Kilimo Source and Habitus Insight. This Nigerian study ran concurrently with parallel studies on social agriculture in Ghana and Senegal, also commissioned by Caribou Digital. Collectively, these studies follow a prior explorative investigation of social agriculture conducted in Kenya (2021–22), also commissioned by Caribou Digital in partnership with the Mastercard Foundation and conducted by Kilimo Source, Habitus Insight, and Learn.ink.¹ In this prior research, the term “social agriculture” was formally defined and its practice documented.

This study uses qualitative methods, data, and analysis to examine three case study agricultural value chains—cassava, snail, and broccoli—in which social agriculture is being practiced in Nigeria. The study applies value chain analysis based on various characteristics that configure how value chains operate. The study provides analysis on the ways in which these contextual factors present opportunities and constraints to upgrading of *processes*, *products*, value chain *functions*, and distribution *channels* among the individual actors and value chains in our case studies. The study documents social agriculture strategies and practices—pursued via the use of social media platforms and their affordances—to overcome or otherwise reduce contextual constraints associated with the configuration and characteristics of the case study value chains. The study also documents reported livelihood outcomes from the practice of social agriculture—and some of the risks and downsides associated with it—among the study participants in their respective value chains and roles. In cases where the outcomes of social media address contextual constraints,

they alter the contextual landscape in which value chains operate, thereby reconfiguring and impacting the value chain. The study findings may be relevant to other value chains in which social agriculture is practiced, or that exhibit similar characteristics and configurations to those included in this study.

The study uses qualitative data derived from in-depth interviews and “mobile ethnography” inquiries, conducted remotely via video calls and WhatsApp chat threads, with 27 dynamic agripreneurs (agricultural entrepreneurs) actively practicing social agriculture in the case study value chains in Nigeria. Among the research sample are value chain actors engaged in activities in each of six archetypal “nodes” typically found within agricultural value chains: *input suppliers*, *suppliers of information*, *farmer-producers*, *aggregators*, *processors*, and *retailers*. The study documents a variety of different social media activities and strategies applied throughout the value chain in pursuit of the different needs, aims, and purposes—including towards value chain upgrading—among the research participants, with relevance to their value chain activities.

Social media use is prevalent and rapidly growing globally, including in Nigeria and among those practicing agricultural livelihoods. Documented advantages of social media use for agriculturalists include low barriers to entry; enhanced efficiencies in communication and networking; access to information; improved visibility and marketing; opportunities for accessing new markets and trading among social media networks; and access to supportive online communities. This study contributes to the literature on many of these themes and documents the use of social media platforms for: accessing finance; remediating logistical constraints; influencing governance dynamics through collective action; enhancing market competitiveness; improving incomes; and reducing operational costs.

The adoption of social media by agricultural stakeholders is documented to be affected by socioeconomic characteristics such as gender, age, education, farming experience, and income. Barriers to accessing social media include: financial constraints; lack of understanding of the value of social media; low levels of literacy (including digital literacy); low levels of trust; cyberbullying and online harassment; and issues with connectivity and power supply. This study contributes to the literature on trust and documents some of the risks and downsides associated with social media use, including time consumption and risks of overdependence on social media platforms for livelihoods. The study also documents strategies to reduce these risks and downsides.

The research findings and associated recommendations are relevant to a range of audiences, including social media platforms and the tech-for-development sector; governments and policymakers; foundations and NGOs; agricultural, financial, and other institutions; academia and researchers; and practitioners of social agriculture themselves. The study outputs include this report, a short-form documentary film shot on location in Nigeria, a social agriculture “ecosystem map,” and various short-form publications and social media campaigns.²

2 Kilimo Source and Habitus Insight, “Social Agriculture in Nigeria”; Kilimo Source and Caribou Digital, “Social Agriculture Ecosystems in Nigeria.”

02 Key findings

2.1 Participants

Most social agriculturalists in this study are highly educated with advanced qualifications, though more than half do not have educational backgrounds in agriculture. And yet, some of them leverage their existing and non-agricultural expertise to succeed in social agriculture.

Reports for the duration of business use of social media platforms range from 2 to 13 years, averaging 6 to 8 years. Most social agriculturalists in this study occupy multiple roles or nodes within their value chain, and the characteristics and configuration of the value chain influence the prevalence of agriculturalists adopting multiple roles.

2.2 Value chain characteristics and configuration

The use of social media platforms can influence value chain governance dynamics through the formation and maintenance of cooperatives and associations (for advocacy) and the inclusion of marginalized voices (for interfacing between value chain actors and governance institutions), and other forms of collective action. These are most prevalent in the cassava value chain.

The characteristics of a value chain, in terms of scale, length, complexity, maturity, and governance, correlate with the level of network effect in the value chain (i.e., the diversity of linkages required to move a product through the value chain and bring it to the end market). These factors also pose constraints to the ability of value chain actors to upgrade their function within the value chain. These factors influence the use of social media platforms for the creation and maintenance of vertical linkages between different nodes or activities in the value chain. The cassava value chain exhibits a high network effect, while the broccoli and snail value chains exhibit comparatively low network effects.

Poor access to information in value chains correlates with the formation and maintenance of horizontal value chain linkages and the transfer and co-creation of knowledge between multiple actors engaging in similar activities and functions in the value chain. This influences the use of social media platforms for relationships and activities to address information gaps, particularly in the snail value chain.

The intersection between a product's primary production location and consumption markets, perishability, processing, and access to logistics pose notable constraints to viable distribution channels for the product. This has the greatest significance to the broccoli value chain, which typically has the furthest distance to travel from farm to table and is highly perishable. Social media-enabled strategies to address these constraints include sourcing a ready market (i.e., buyers) in advance of harvest; sourcing and coordinating logistics; and accessing or creating markets for upgraded, less perishable products.

Access to finance is a notable constraint to all forms of value chain upgrading, most significantly in small, novel, immature, and informal value chains such as broccoli and snail. However, these conditions can also reduce financial barriers to entry such that self-financed start up is more attainable, as is the case in the broccoli and snail value chains. Social media-based strategies for accessing finance include: networking with potential investors (both domestically and internationally); learning of government and NGO grant-funding opportunities via social media; and crowdfunding (including among friend and family networks).

Social media platforms are a major tool for the creation of supportive (as opposed to adversarial) relationships between competitors in a value chain. These relationships drive innovation and upgrading via the transfer and co-creation of knowledge, resources, and benefits, thereby improving the overall effectiveness and competitiveness of the value chain. This is relevant across value chains, though most prominent in the snail value chain.

Social media platforms are relatively novel channels for marketing agricultural products. Though at present the social agriculture market represents only a small segment of agricultural economies, the potential reach is massive and currently avails a comparatively low-competition environment with associated rewards for early adopters who use these marketing channels to their advantage.

2.3 Platforms and affordances

The social agriculturalists in this study use a variety of different social media platforms and affordances for different purposes, typically moving fluidly between them for different stages of their activities, interactions, and transactions. Different platform design features, affordances, and prevailing cultures of usage are of key relevance to why certain platforms are used for specific needs, goals, and purposes among different value chain actors.

X (formerly Twitter) and LinkedIn are most commonly used for business development and networking. These platforms are most heavily leveraged by aggregators and processors, particularly in the cassava value chain. Instagram is more heavily leveraged for visual marketing to end consumers, for which aesthetics are more important than at the wholesale stages of the value chain, particularly in the broccoli and snail value chains. Facebook is most commonly used by farmers and those with whom they liaise, including input suppliers, suppliers of information, and aggregators in the cassava and snail value chains. YouTube is more commonly used for long-format video training and most heavily leveraged among suppliers of information, particularly in the snail value chain. WhatsApp use is universal among the study participants and is used for all manner of value chain activities including information exchange, aggregation and trading, collaboration and collective action, proving authenticity, and particularly for closing business deals.

Platform affordances for short-form video are most commonly used for marketing to end consumers of inputs and consumer products and for proving the authenticity of individuals, businesses, and products, particularly in the broccoli and snail value chains. Private video messages and video calls are used universally to enhance trust as well as for consultation between information suppliers and farmers-producers in all value chains. Long-form video is used for training between information suppliers and producers, particularly in the snail value chain.

Patterns of usage for image-based platform affordances closely follow those for video. They are leveraged towards marketing to end consumers of inputs and products and for proving authenticity in the broccoli and snail value chains, as well as to support wholesale transactions and for consultation between farmers and suppliers of information and inputs in all value chains.

With reference to audio-based social media affordances, voice notes are used to overcome literacy and language barriers, particularly between information suppliers and farmer-producers in the cassava value chain; to enhance trust and familiarity between actors in all value chains; and simply for their ease of use compared to typing, which is universally relevant. Audio-only discussion threads (i.e., X/Twitter Spaces and Facebook Rooms) are used for group training in the cassava and broccoli value chains. "Voiceovers" on Meta products are used to provide more information relating to a post or status update, particularly in the broccoli value chain. Voice calls are used universally to communicate, coordinate, and build trust and familiarity between actors.

Text-based social media affordances are used almost universally and support most other forms of social media content and interaction. Private direct text messaging is most commonly used for general discussion, for consultation between actors, to build and maintain relationships, and to close business deals. Most platform design and cultures revolve around short-form text content. LinkedIn is the only platform that effectively supports long-form text content; it is most commonly used by aggregators, processors, and suppliers of information in the cassava value chain.

The majority of marketing (both retail and wholesale) conducted in social agriculture leverages free-to-use platform features. However, some actors—particularly those retailing to end-consumer markets for inputs or end products in all value chains, most notably broccoli and snail—also run paid advertising campaigns on Instagram and Facebook. Those who use this affordance appreciate its value in terms of the ability to reach large numbers of potential customers, the ability to target their audience, and the relatively low cost compared to traditional advertising methods. Consequently, they report how it has increased revenue and reduced operational costs.

Different platforms have different approaches to handling, cataloguing, and tagging content, and afford different levels of searchability and interactivity for users to access past content. Facebook and Instagram are designed towards a continuous flow of novel content, and older content can sometimes be tricky to access due to the limited efficacy of cataloguing, tagging, and search functionalities on these platforms. YouTube and X (formerly Twitter) have more effective search functionality such that past content is easier to access in perpetuity and searches can be targeted to individual needs, purposes, and goals.

Social media groups are the backbone of social agriculture and are used for all manner of purposes across all value chains relating to different value chain activities, including: the creation and maintenance of both vertical and horizontal linkages and relationships; information exchange; aggregation and trading; and various forms of advocacy, inclusion, and collective action. All of these can enhance capabilities and opportunities for collective and individual value chain upgrading, and can also be used to influence or circumvent governance-based power structures.

Trust is a significant general issue in social agriculture due to the prevalence of scams, fraud, and mis/disinformation on social media platforms. Social agriculturalists have developed a variety of social media-enabled strategies to address this. These include: soliciting vetting and referrals; using platforms to conduct due diligence in researching unknown contacts; informal verification and certification systems; and prescriptive payment procedures to avoid the risk of non-payment for goods or services delivered.

In response to conditions of low trust, many social agriculturalists purposefully engage in social media-based activities to enhance their reputation and outward appearance of trustworthiness by proving their expertise and/or authenticity. Text- and video-based social media platform affordances lend themselves best to proving *expertise* by sharing high-quality information, an activity most prevalent in the cassava and snail value chains. Platform affordances for visual content, video, and, to a lesser extent, photos, lend themselves to proving *authenticity* by sharing honest, transparent, personable, and relatable content—especially in the broccoli value chain.

2.4 Livelihood outcomes

Reported livelihood outcomes from the use of social media platforms include: increases in transaction volume and distribution channels; increased income; improved efficiencies reducing operational costs and improving profit margins; and the creation and maintenance of effective value chain linkages. Such linkages enhance the movement of products through the value chain (most relevant to cassava) and/or reduce value chain constraints and create capacities and opportunities for value chain upgrading, with associated increases in both empowerment and incomes (most relevant to broccoli and snail).

The participants in this study all report that their use of social media platforms for their agricultural livelihoods has improved their income and profit, sometimes very significantly. Explicit reports range from 45% to 90% increase. Some participants now earn as much as 99% of their income from social media-based interactions and transactions.

2.5 Risks and downsides

Despite the advantages to livelihoods, overdependence on social media platforms comes with certain risks and downsides, including trust-based issues, online harassment, and issues surrounding access, time consumption, and the cost of necessary data.

For many social agriculturalists, social media platforms have become deeply embedded in their lives and livelihoods. Reports of daily usage range from 3 to 18 hours per day—with jokes of being online 24/7. Social media communities move at a fast pace, and maintaining social capital requires constant work at risk of losing business and reputation. Government blackouts, technological outages, and hacking can sever access to social media platforms, with associated negative outcomes for individuals who depend on them for their livelihood, in agricultural economies and beyond.

Many social agriculturalists have adopted strategies to reduce their overdependence on social media platforms, including: de-escalating their usage; diversifying their usage to avoid overdependence on a single platform; collecting alternative contact information from clients and customers; and building and maintaining a strong offline presence and relationships such that their businesses can thrive even in the absence of social media platforms.

Ultimately, despite these risks and downsides, all of the participants in this study assert that the advantages of using social media for their agricultural livelihoods far outweigh the disadvantages.

03 Research questions

- What non-social-media-related conditions and contexts shape the value chain, roles, and behaviors?
- What social media platforms are being used for agriculture, what are they being used for, and which platform design features (affordances) are being used for which activities in what ways?
- How does social media platform usage vary between different value chains and between different nodes in value chains?
- What are the livelihood outcomes of the use of social media platforms and affordances in agricultural value chains?
- In which ways are social media platforms and affordances allowing agriculturalists to adopt new roles within the value chain? How does the context of the value chain influence this?
- What risks and downsides are associated with the use of social media platforms? How can platforms be improved to reduce these?
- What additional platform features, configurations, or affordances could improve their value and impact for agricultural value chains and livelihoods?
- What impact are social media platforms having on value chains, in terms of integrating, augmenting, or reconfiguring them?
- How can social agriculture livelihoods be improved or enhanced through more sophisticated usage of social media platforms?

04 Research methodologies

This study builds on and extends beyond a phase 1 exploratory research project on social agriculture conducted in Kenya (2021–22) which sought to define the term “social agriculture,” assess social agriculture’s potential scale and audience, and document emergent social agriculture practices and experiences in the country.³

The phase 1 study was largely “farmer focused” with a primarily producer-based research sample and relatively fewer participants from elsewhere in the agricultural value chains. This phase 2 study intentionally takes a more comprehensive value chain lens in the recruitment of participants, and therefore includes participants from throughout the value chain—from pre-production (input and information suppliers), through production (farmers), to post-production (aggregation, processing, marketing, and distribution).

4.1 Literature reviews

This study draws on existing literature on the Nigerian agricultural sector generally, and specifically on the value chain case studies selected for the study. It builds on literature on the use of social media platforms in Nigeria, including for agricultural livelihoods, and draws on literature informing the conceptual frameworks applied to the research design—the review for which was conducted in partnership between Caribou Digital and the University of Ghana, Accra, who collaboratively developed the conceptual framework for parallel studies on social agriculture in both Ghana and Nigeria.

4.2 Participant selection

This study used a targeted sample of participants selected specifically for their ability to represent the various nodes of the case study Nigerian agricultural value chains selected to research. Participants are all actively using social media platforms for their agricultural livelihoods already, at varying degrees of intensity and sophistication, and were selected for their ability to provide experiential data and insights from the active practice of social agriculture in Nigeria. Participants were sourced from the large extended professional network of study co-author Akintobi “Lanre” Lanrewaju, who is a lecturer of agricultural extension and rural sociology at Federal University Dutsinma Katsina State, agricultural product aggregator, highly embedded actor practicing social agriculture, and a successful social agriculture influencer with 45,000 followers on X (formerly Twitter) from which to select ideal participants. A detailed list of all participants is presented in [“Appendix 1”](#).

4.3 Data collection and analysis

An in-depth 60- to 90-minute qualitative interview was conducted with each participant according to a semi-structured discussion guide developed with reference to the research framework and questions.⁴ Participants provided informed consent and were given a cash incentive for their participation.

Interviews were conducted by three core research team members—Catherine Kamanu, Akintobi “Lanre” Olanrewaju, and Olayinka “Yinka” Kolade—with each assigned to conduct all interviews in a single value chain in order to be able to gain a comprehensive and unified perspective of their assigned value chain and its actor network. Interviews were conducted remotely over Zoom video calls and recorded for later transcription. Interviewers provided a summary and synthesis immediately following each interview. Transcription was conducted manually by a team of human transcribers to ensure high-quality transcripts. The research team developed a coding table in line with the research agenda, initial synthesis, and discussion of the interviews among the team.⁵ Thematic analysis and coding of transcripts was conducted manually by a team of two data analysts using Atlas.ti. Thematic data syntheses and selected supporting quotations were produced; these form the bulk of the findings presented in this report. The research project and reporting rely solely on qualitative research and reporting methodologies.

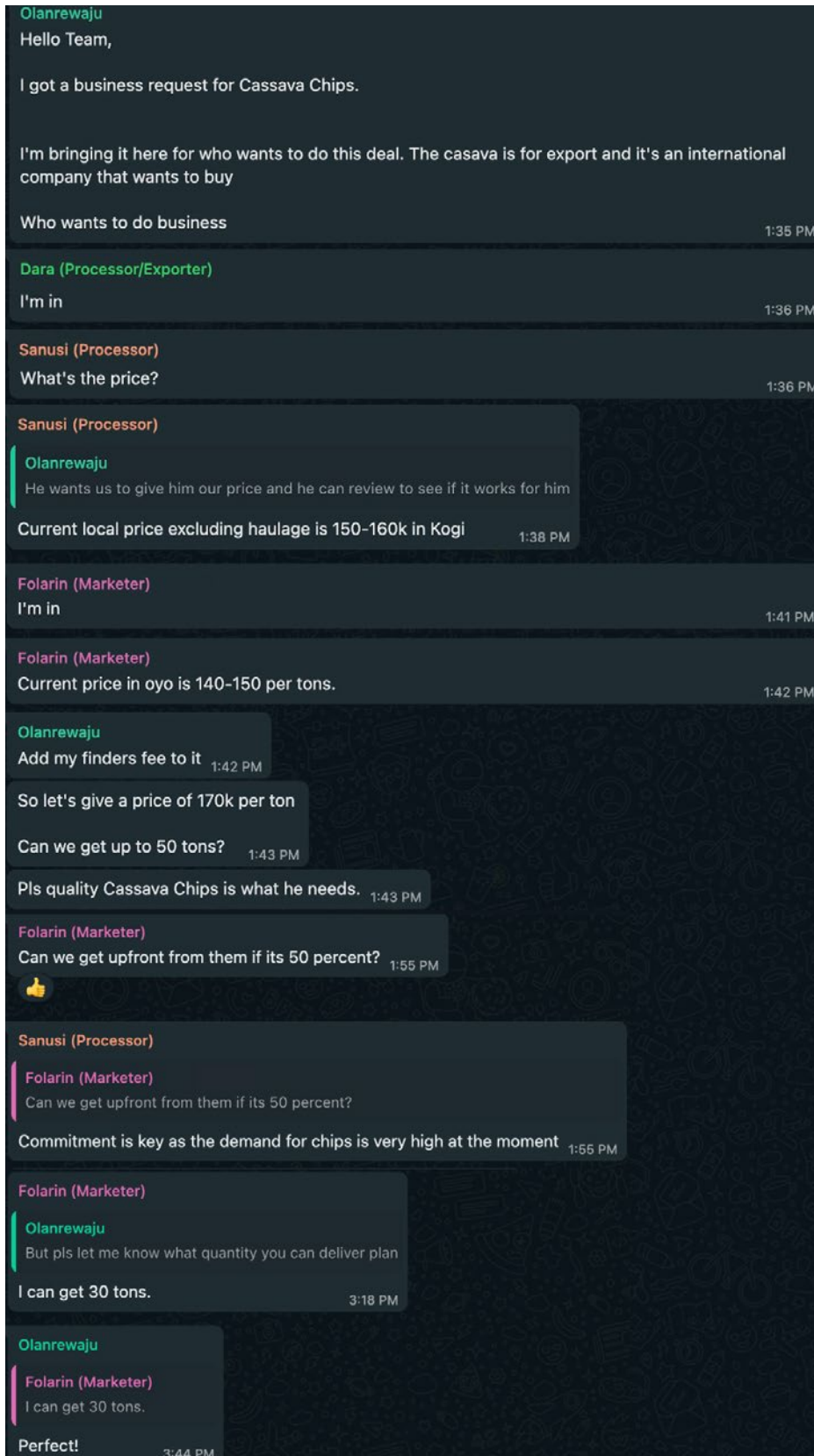
4.4 Mobile ethnography

The initial research plan included a follow-up phase of “mobile ethnography,” a method that uses mobile technology—in this case, the very smartphones the participants use to access social media platforms for social agriculture—to document, analyze, and derive qualitative and ethnographic insights from participants via remote means. Participants were engaged via WhatsApp and grouped according to value chain, one group each for cassava, broccoli, and snail. Three core research team members (assigned to the same group which they had interviewed) acted as group leaders and moderators.

Initially, the WhatsApp groups were a means by which to keep participants informed with the latest developments in the research process and to maintain participant engagement and interest in the project throughout its duration to engage them for the mobile ethnography research phase. Conversations arose organically within these groups even without stimulus from the group leaders or researchers. Some groups were more dynamic than others. The snail participants were notably slow, while the cassava participants were highly dynamic, even collectively negotiating an aggregation and export deal worth 8 million naira (US\$10,000) within hours of the group’s creation. Figure 1 shows a screenshot of this WhatsApp conversation (edited for brevity).

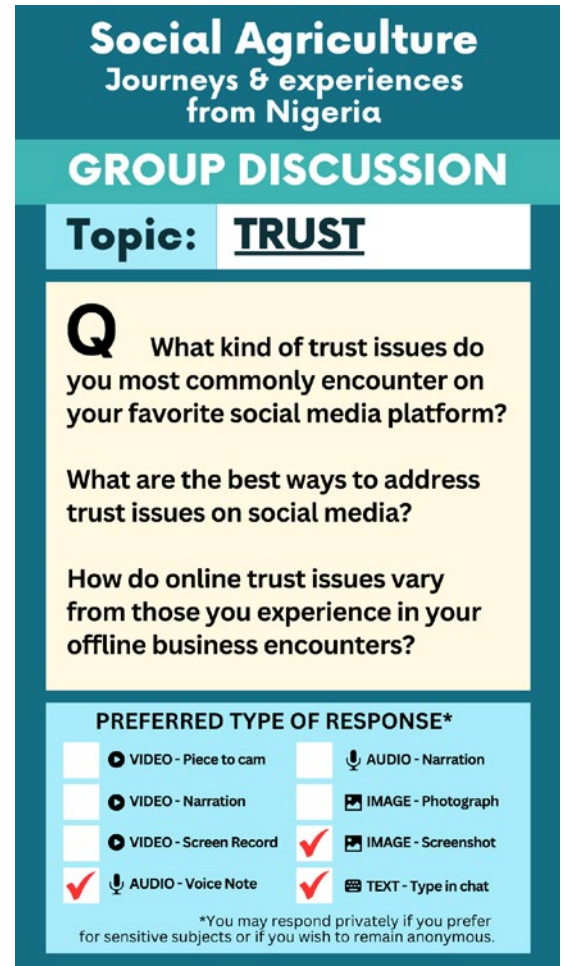
Figure 1 ▾

A conversation in the cassava WhatsApp group



The mobile ethnography inquiry phase used the same WhatsApp groups. An inquiry framework was developed, focusing on key themes emerging from the interview data, with certain discussion points intended for group discussion and others designated for on-to-one discussion (particularly for sensitive topics), also via WhatsApp, with an ethnographer. Visual “inquiry cards” on each discussion topic were produced, also stating the researchers’ preferred medium of response to that inquiry. This was intended to take advantage of the multimedia functionality afforded by the platform (i.e., video, screen recording, voice note, photo, screenshot, text). Figure 2 shows an example mobile ethnography inquiry card used in the research. Participants were given a cash incentive for each inquiry point with which they engaged. We received a range of responses in different formats, which both feed into the research findings and are presented where relevant in this report to support the research findings with direct content from the participants. The multimedia mobile ethnography outputs are also used in an “ecosystem map” produced from the research alongside this report.⁶

Figure 2 ▼
Mobile ethnography inquiry card



4.5 Documentary film

A short documentary film was produced on location in Nigeria with a Nigerian film crew.⁷ The film was shot across 9 states and 10 participants, and tells the story of social agriculture in Nigeria through the participants’ own stories, weaving together a journey downstream through the value chain from start to finish.

6 Kilimo Source and Caribou Digital, “Social Agriculture Ecosystems in Nigeria.”

7 Kilimo Source and Habitus Insight, “Social Agriculture in Nigeria.”

05 Literature review

5.1 Agriculture in Nigeria

Agriculture in Nigeria is responsible for about 33% of the national GDP, over 70% of employment, and 88% of non-oil foreign exchange earnings.⁸

Nigeria as a country is blessed with vast agricultural resources—fertile land, forests, lakes, streams, rivers, grasslands, and broad range of climate conditions enabling it to produce a wide variety of crops.⁹ It also has a large and active population that sustains a rich and rewarding agricultural sector. Despite this, several factors have constrained the performance trajectory of the Nigerian agricultural sector, such that it is poorer than might be expected. These constraints include neglect, inadequate technology, poor access to optimum credit and low investment finance,¹⁰ high levels of corruption, inadequate infrastructure, poor access to capital, a poorly developed agricultural system,¹¹ and a lack of adequate information about services and products to the required target market.¹² It is also notable that, despite having many of the resources (labor, technology, capital, and raw materials) to maximize the country's agricultural potential, these resources are underutilized due to a *"lack of active and enthusiastic agricultural entrepreneurs with the ability to coordinate the various factors of production."*¹³ Historically, the primary produce from agriculture in Nigeria was rarely processed before export, with the country collectively missing out on potential benefits to be gained through value addition along the value chain.¹⁴

8 Hartwich et al., *Unleashing Agricultural Development in Nigeria through Value Chain Financing*; Iyoboyi, Okereke, and Musa-Pedro, "Macroeconomic Policy and Agricultural Value Chain in Nigeria"; Izuchukwu, "Analysis of the Contribution of Agricultural Sector on the Nigerian Economic Development."

9 Iyoboyi, Okereke, and Musa-Pedro, "Macroeconomic Policy and Agricultural Value Chain in Nigeria."

10 Adesoye et al., "Enhancing Agricultural Value Chain for Economic Diversification in Nigeria."

11 Vincent et al., "Entrepreneurship, Agricultural Value-Chain and Exports in Nigeria."

12 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

13 Vincent et al., "Entrepreneurship, Agricultural Value-Chain and Exports in Nigeria."

14 Iyoboyi, Okereke, and Musa-Pedro, "Macroeconomic Policy and Agricultural Value Chain in Nigeria."

Smallholder farmers predominate in the Nigerian agricultural sector, and large farms account for only about 5% of all farm holdings. Increasing market demand for commodities such as animal feed, grain, starch, poultry, fish, fruit, and vegetables—as well as the need for processing companies to meet raw material quotas unattainable to the traditional sector—has given rise to increased levels of commercial farming.

5.2 Social media and agriculture in Nigeria

Social media platforms are gaining popularity in the agricultural sector in Nigeria.¹⁵ The use of social media messaging apps is also increasing in rural areas.¹⁶ To agriculture as an industry, the key values of communication that social media provides are peer-to-peer networking, farmer-to-industry networking, consumer engagement, and crisis communication.¹⁷ Social media provides a platform for communicating effective agricultural information and practices and addressing challenges facing the agricultural sector.¹⁸ It can be leveraged to disseminate important agricultural information and innovations, to create awareness of agricultural technologies, and to develop knowledge in real time.¹⁹ The dynamism, ease, innovation, wide coverage, access, and customer networking inherent in social media networking systems have made social media a powerful tool in terms of speed and cost-effectiveness for information dissemination and marketing.²⁰

Similarly for extension organizations, social media has made communication with their large networks of farmers far easier and simpler. Agricultural program planners are using social media to engage audiences and obtain feedback,²¹ as social media platforms also afford opinion mining to understand and evaluate farmers' concerns, problems, and attitudes in relation to agriculture.²²

15 Saravanan and Suchiradipta, "Social Media Policy Guidelines for Agricultural Extension and Advisory Services."

16 Guanah et al., "Social Media, Youths and Agricultural Development in the Niger Delta Region of Nigeria."

17 Stanley, "Harnessing Social Media in Agriculture: A Report for the New Zealand Nuffield Farming Scholarship Trust."

18 Abuta, Agumagu, and Adesope, "Social Media Used by Arable Crop Farmers for Communicating Climate Change Adaptation Strategies in Imo State, Nigeria."

19 Muktar, Mukhtar, and Ahungwa, "Harvesting Youth for Agro-Entrepreneurship: Stimulus Role of Social Media in Nigeria"; Ifejika et al., "Analysis of Social Media Mainstreaming in E-Extension by Agricultural Development Programmes in North Central Zone, Nigeria."

20 Vincent et al., "Entrepreneurship, Agricultural Value-Chain and Exports in Nigeria."

21 Kipkurgat, Onyiego, and Chemwaina, "Impact of Social Media on Agricultural Extension in Kenya: A Case of Kesses District."

22 Valsamidis et al., "A Framework for Opinion Mining in Blogs for Agriculture."

With relatively limited barriers to entry, small businesses are beginning to use social media as a means of marketing.²³ Social media opens new market opportunities, especially in situations of fluctuating market prices,²⁴ and has become a marketing outlet for agricultural products.²⁵ Several studies report that social media eases the marketing of agricultural produce.²⁶ Social media platforms give MSEs the ability to engage with their end customers directly, at low costs of transaction and higher efficiency levels than other conventional communication methods.²⁷ It provides an extensive platform for genuine business transactions as it offers farmers (with requisite business and technological acumen) the opportunity to promote their goods and services for local and global markets. Engaging in direct marketing via social media increases profits as well as facilitates mass personal communication.²⁸

Furthermore, social media has become an important marketing resource farmers use to connect to their customers and create a community, which brings their farm to the public eye and ultimately leads to a more successful business.²⁹ Most Nigerian consumers have adopted social media,³⁰ resulting in many small- and medium-scale enterprises recording most of their sales from social media platforms.³¹

Different studies have shown that by adopting social media marketing strategies, MSEs can be more creative, flexible, and entrepreneurial than other bigger organizations through the efficient responsiveness to the needs of their customers by leveraging the opportunity to get close to them and obtain feedback via social media.³² Customer relationship management has been reported to be the most significant reason agricultural entrepreneurs use social media.³³ Other top reasons mentioned include price monitoring, creation of new markets, advertisement, market survey, and research. The adoption of social media marketing was found to enhance the business performance of agricultural MSEs in southwest Nigeria, especially with regard to their sales turnover, brand visibility, customer interaction, promotion, and advertisement.

23 Adegbuyi, Akinyele, and Akinyele, "Effect of Social Media Marketing on Small Scale Business Performance in Ota-Metropolis, Nigeria."

24 Adeyemi, "Influence of Socio-Economic Factors on Farmers' Use of Mobile Phones for Agricultural Information in Nigeria."

25 Muktar, Mukhtar, and Ahungwa, "Harvesting Youth for Agro-Entrepreneurship: Stimulus Role of Social Media in Nigeria."

26 Wangu, "Use of Social Media as a Source of Agricultural Information by Smallholder Farmers: A Case Study of Lower Kabete, Kiambu County"; Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria"; Balogun et al., "Assessing the Potentials of Digitalization as a Tool for Climate Change Adaptation and Sustainable Development in Urban Centres"; Inegbedion et al., "Use of Social Media in the Marketing of Agricultural Products and Farmers' Turnover in South-South Nigeria."

27 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

28 Carr and Hayes, "Social Media: Defining, Developing, and Divining."

29 Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria."

30 Ajayi, "Use and Use Intensity of Social Media Networking Systems by Nigerian Agro-Entrepreneurs."

31 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

32 Mwangi and Wagoki, "Effect of Social Media on Performance of Advertisement Business in the Mainstream Media in Kenya: A Survey of Leading Media Groups in Kenya" cited in Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

33 Ajayi, "Use and Use Intensity of Social Media Networking Systems by Nigerian Agro-Entrepreneurs."

And yet, many agricultural MSEs do not understand the value that social media can bring to them.³⁴

Similarly, only a small proportion of rural farmers use social media; although the majority of arable crop farmers are aware of social media, only about one-fifth use social media to source and communicate agricultural information.³⁵ Farmers' lack of social media usage is linked to issues such as lack of awareness, illiteracy, and lack of training.³⁶ However, those farmers who do use social media often use it to seek information from extension officers, share among their fellow colleagues,³⁷ seek knowledge about climate change and climate change adaptation strategies and share this information with farmer groups,³⁸ and seek feedback and pose queries.³⁹ Social media offers timely and reliable information and has brought changes in the way farmers do their business, especially in rural communities. Social media provides farmers a quick and easy way to build relationships and interact with other people in agriculture⁴⁰ and helps in the acquisition of farm inputs.⁴¹

Whereas the use of social media was lowest among farm field producers (18%), social media use was highest among agro-marketers/distributors/brokers (82%), followed by professional service providers (75%), agro-input suppliers (72%), and agro-processors (65%).⁴²

Facebook appears to be the most popular social media platform in Nigerian agriculture. Although Instagram was reported to be widely used for commodity showcase and brand visibility, Facebook remains the most widely used and most effective social media platform for agricultural MSEs in southwest Nigeria due to its ad-running efficiency and broad audience reach.⁴³

The majority of farmers report using Facebook as their main social media platform when looking for agricultural information, followed by WhatsApp, X (formerly Twitter), and YouTube. Google Plus and LinkedIn were reported to be the least used by farmers.⁴⁴ A 2015 study reported Facebook, Yahoo, WhatsApp, LinkedIn,

34 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

35 Ajayi, "Use and Use Intensity of Social Media Networking Systems by Nigerian Agro-Entrepreneurs"; Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria"; Abuta, Agumagu, and Adesope, "Social Media Used by Arable Crop Farmers for Communicating Climate Change Adaptation Strategies in Imo State, Nigeria."

36 Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria."

37 Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria."

38 Abuta, Agumagu, and Adesope, "Social Media Used by Arable Crop Farmers for Communicating Climate Change Adaptation Strategies in Imo State, Nigeria."

39 Kipkurgat, Onyiego, and Chemwaina, "Impact of Social Media on Agricultural Extension in Kenya: A Case of Kesses District."

40 Suleiman, Ogakason, and Faruk, "Influence of Social Media in Promoting Farmers' Participation in Agriculture."

41 Adeyemi, "Influence of Socio-Economic Factors on Farmers' Use of Mobile Phones for Agricultural Information in Nigeria."

42 Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria."

43 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

44 Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria."

and Nairaland to be agro-entrepreneurs' most preferred social media networking systems in Nigeria.⁴⁵ However, a later study (2020) revealed Twitter (now X) as the most used social media platform by arable crop farmers. It has been shown to be a home of most professional organizations involved in dissemination of information, events, programs, and learning opportunities.⁴⁶

Research has shown a strong trend towards fresh fruit and vegetables in social media-selling patterns in Kenya.⁴⁷ This is likely because they are high-value, perishable produce that is sold through unstructured value chains better suited to the informal structures of social media platforms. Similarly unstructured market conditions are also prevalent in the Nigerian agricultural economy and are likely to influence social media-selling patterns in a similar fashion.

5.3 Socioeconomic factors affecting the use of social media

The adoption of social media by agricultural stakeholders has a tendency to be affected by socioeconomic characteristics such as gender, age, education, farming experience, and agricultural income. Male farmers are more likely to adopt social media for climate change adaptation communication and strategies, compared to their female counterparts.⁴⁸ As educational level increases, so does the tendency of using social media for agriculture.⁴⁹ The higher the agricultural income, the more likely the adoption of social media.⁵⁰ The older the person, the lower the probability of using social media for agriculture.⁵¹ The more experienced the farmer, the less the likelihood of them using social media for their livelihood.⁵²

45 Ajayi, "Use and Use Intensity of Social Media Networking Systems by Nigerian Agro-Entrepreneurs."

46 Abuta, Agumagu, and Adesope, "Social Media Used by Arable Crop Farmers for Communicating Climate Change Adaptation Strategies in Imo State, Nigeria."

47 Wills and Barrie, "Digital Agriculture in Emerging Markets."

48 Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria"; Abuta, Agumagu, and Adesope, "Social Media Used by Arable Crop Farmers for Communicating Climate Change Adaptation Strategies in Imo State, Nigeria."

49 Ajayi, "Use and Use Intensity of Social Media Networking Systems by Nigerian Agro-Entrepreneurs"; Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria."

50 Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria."

51 Mukhtar, Mukhtar, and Ahungwa, "Harvesting Youth for Agro-Entrepreneurship: Stimulus Role of Social Media in Nigeria."

52 Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria." This could be related to less need for information and support which may otherwise be sought via social media, as well as correlating with age; more experienced farmers are likely to be older due to the longer duration of their farming experience, and age is negatively correlated with social media adoption.

5.4 Barriers to accessing social media

To access, assess, and use social media platforms and content, users must have *economic resources*, including money, skills, and technology, and *social resources*, such as motivation, trust, confidence, and knowledge.⁵³ Financial constraints are one of the most significant bottlenecks of the adoption of social agriculture.⁵⁴ Lack of understanding of the advantages of social media or strategies to approach it is a common point of failure and can negatively impact perceptions and future attempts to use it.⁵⁵ Getting people and customers to trust a company or brand on social media is another challenge.⁵⁶ High levels of illiteracy and lack of technical ability have been highlighted as top challenges facing primary producers' ability to adopt social media in their businesses.⁵⁷ Other constraints mentioned include limited awareness, lack of resources, and communication issues.

53 Heeks, "ICTs and the MDGs: On the Wrong Track?"

54 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

55 Adegbuyi, Akinyele, and Akinyele, "Effect of Social Media Marketing on Small Scale Business Performance in Ota-Metropolis, Nigeria."

56 Gimba, Seraj, and Ozdeser, "What Drives Income Inequality in Sub-Saharan Africa and Its Sub-Regions?"

57 Adejo and Opeyemi, "Awareness and Usage of Social Media for Sourcing Agricultural Information by Youth Farmers in Ogori Mangogo Local Government Area of Kogi State, Nigeria"; Abraham et al., "Effect of Social Media in Enhancing Agricultural Extension Services Among Farmers in Gwagwalada Area Council, Abuja, Nigeria."

06 Conceptual frameworks

The objective of this study is to better understand how social media platform affordances and uses impact and/or reconfigure agricultural value chains. This study includes: documentation and analysis of differences in social media platform use between value chains; differing social agriculture practices and strategies employed across the various “nodes” of a value chain; and the livelihood outcomes from the use of social media platforms. To achieve the objective, the study employs conceptual frameworks on social agriculture; value chains; value chain upgrading; and value chain characteristics and configuration.

6.1 Social agriculture

This study continues to apply the definition of social agriculture⁵⁸ that the Caribou Digital research team established during preceding exploratory research conducted in Kenya (2021–22).⁵⁹

“Social agriculture refers to a set of practices that support agricultural livelihoods—including information exchange, support mechanisms, and markets—where these are based on the use of social media platforms in countries with a high proportion of their workforce in agriculture.”⁶⁰

The three key elements of this definition can be further outlined as follows:

- **Information exchange** refers to the gathering and sharing of information relevant to agriculturalists, such as cultivation methods, inputs, and prices and markets.
- **Support mechanisms** include organizations or groups through which agricultural practitioners support each other by a combination of peer-to-peer camaraderie, collective action, and financial or in-kind support.
- **Agricultural markets** in this context refers to the online buying and selling of goods and services related to agriculture.

In describing social agriculture, “livelihoods” comprises the capabilities, resources, and activities required by a person working in agriculture. While phase 1 of the research primarily focused on practices and strategies rather than specific roles, this phase 2 study takes a more detailed value chain lens and focuses on the diversity of roles within the target value chains—while still documenting practices and strategies employed throughout. The practices described in this research tend to arise from individuals who repurpose existing platform features to achieve their goals.

Generally, platforms are *“technologies or services that mediate interactions and relations between two or more parties.”⁶¹* These interactions tend to be frictionless and between multiple goal-oriented parties. Consequently, “social media platform” is defined as a *digital space with frictionless many-to-many interactions that allow users to create and exchange information, ideas, and interests, perform transactions or attract attention via virtual communities and networks.* This conceptualization creates an opportunity to explore the social media features that agricultural value chain actors use in pursuing their livelihood goals. The study therefore includes a set of digital platforms and

58 It's important to note that researchers have used the term “social agriculture” in semantically different contexts, usually to refer to community development and social inclusion in agriculture. These usages have little to do with digital technologies. In the context and definition proposed in this study, the term social agriculture is notably absent from pre-existing literature. However, we infer the occurrence of our definition of “social agriculture” when the research and discussion intersects social platforms with agricultural livelihoods in countries with a high proportion of their workforce in agriculture.

59 Caribou Digital et al., “Social Agriculture” [project page].

60 Schoemaker et al., “Social Agriculture.”

61 Rochet and Tirole, “Platform Competition in Two-Sided Markets.”

services like Facebook, Instagram, WhatsApp, X (formerly Twitter), Telegram, LinkedIn, YouTube, TikTok, and similar. The study focuses in particular on social media platform *affordances*. Since value chain actors utilize platform features to pursue their value chain goals, affordances are defined as *possible actions enabled by platform features that create potential forms of value creation*.

The comparative literature applied in phase 1 emphasizes "community" as a key aspect of social media, in particular the experience of online groups:

"Online groups within social platforms enable communities to come together at unprecedented speed and scale, facilitate the inclusion of marginalized people and can generate impact, and provide their members with a strong sense of community and belonging, despite not operating in physical space."⁶²

This is also true in the context of social agriculture, where individuals share information and support, mainly in online groups, which both reflect and sustain a sense of community.

6.2 Value chains

Traditionally, actors within an industry or a sector perform various roles to add value to and extract rent (profit) from their primary products and services. Such actions performed by various actors contribute to a network known as a *value chain*. An agricultural value chain is defined as the people and activities that bring a basic agricultural product, like cocoa or vegetables, from obtaining inputs (upstream) and production in the field (midstream) to the consumer (downstream) through activities such as processing, packaging, marketing, and distribution/retail. This study considers the value chain according to a series of six archetypal primary nodes typically represented in most agricultural value chains, leading from pre-production to retail to end consumers. Information is included as it is a key resource throughout the value chain and a major part of social agriculture.

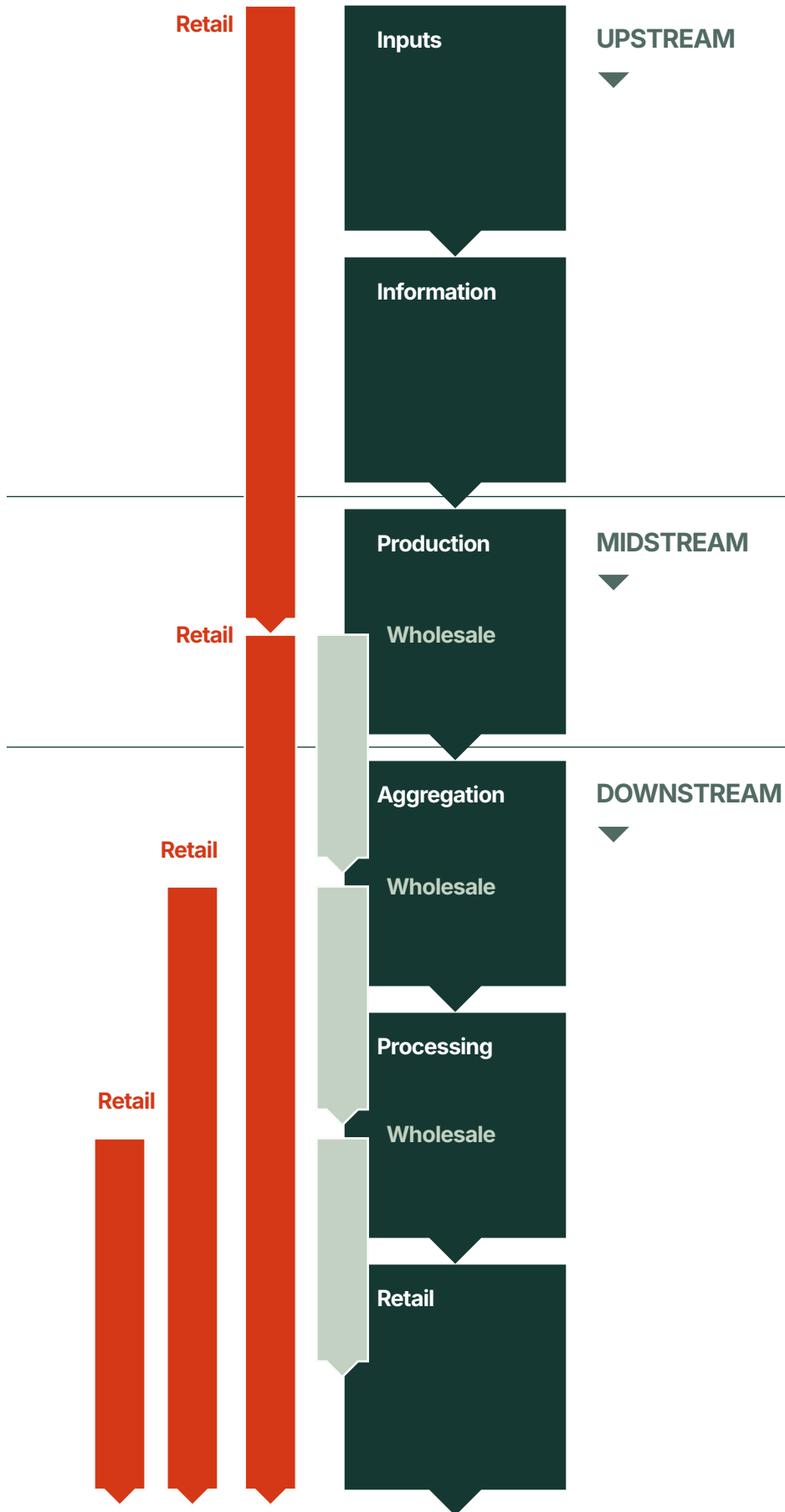


Figure 3 ▼
Archetypal agricultural value chain nodes

6.3 Value chain upgrading

“Upgrading” refers to innovation to add value to products or services, to make production and marketing processes more efficient, to increase competitiveness, to respond to market opportunities, and to access new market channels and industry knowledge. Upgrading can generate higher returns and new—or steadier—income streams. Value chain actors can undertake multiple types of upgrading:

- **Process upgrading** increases the efficiency of production either through better organization of the production process or the use of improved technology.
- **Product upgrading** improves product quality and increases value for consumers. This can be stimulated by changes in end markets in an ongoing process.
- **Functional upgrading** involves the entry of a value chain actor into a new, higher value-added function, level, or node in the value chain (i.e., from production to processing). This can occur via elimination of a whole level, or an actor acquiring/developing new capacity.
- **Channel upgrading** entails entering one or more new (domestic, regional, or international) end markets in the same basic product. New markets may open up, and/or old ones may shut down.
- **Intersectoral upgrading** includes the entry of a value chain actor into a completely new value chain or industry using knowledge acquired through their existing activities. This typically requires multiple upgrading strategies to occur simultaneously or in sequence and the acquisition of more skill, knowledge, or technology specific to the new product.⁶³

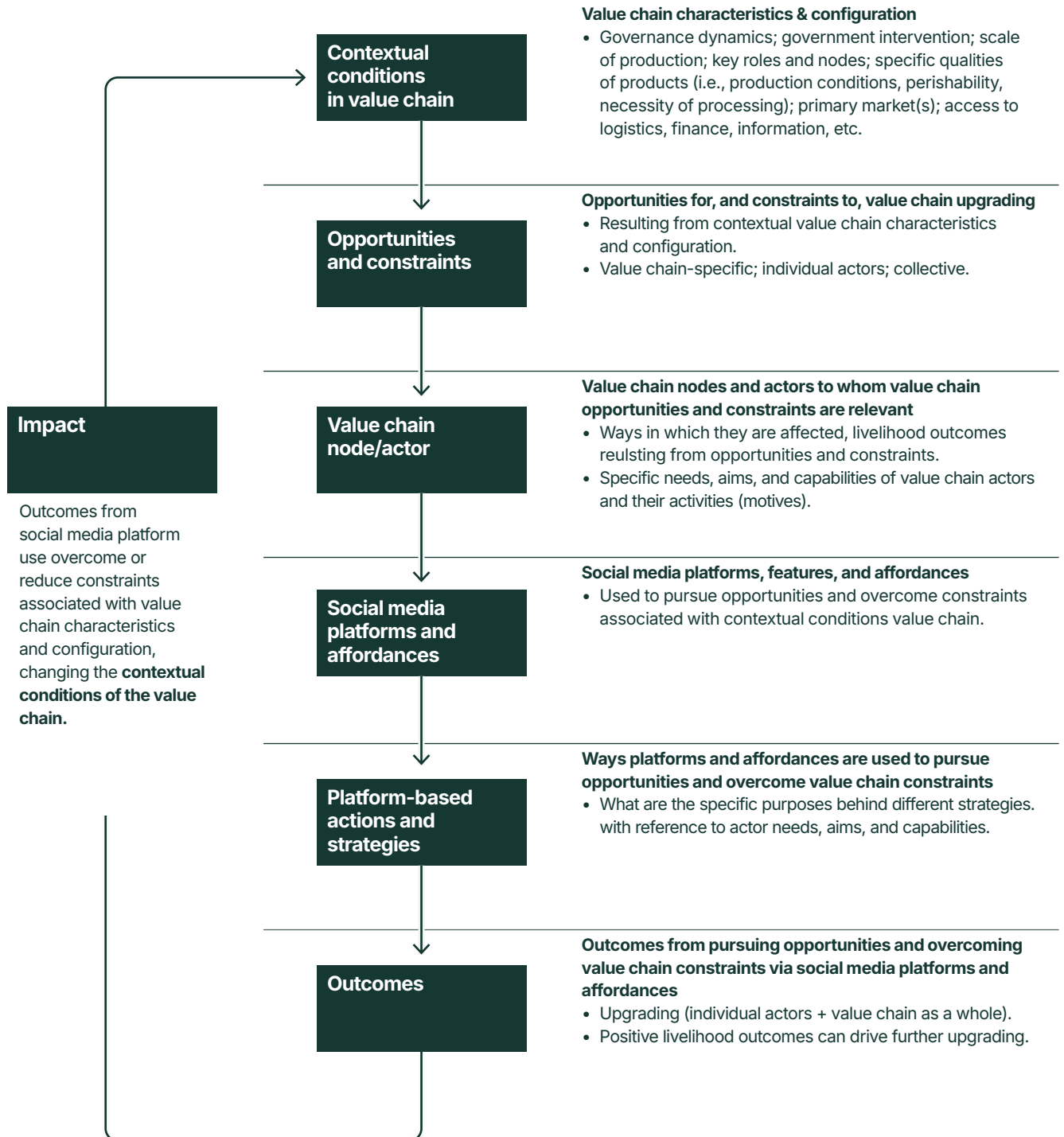
A number of factors affect opportunities for upgrading, including:

- Physical and social distance
- Trust between value chain actors
- Transmission of market information on end-market opportunities and characteristics
- The risk tolerance of actors or their ability to take on any potential risks associated with upgrading in pursuit of rewards
- Social considerations that may limit the ability of actors to undertake upgrading
- Time as a resource to be applied to the process of upgrading

Further, the configuration and characteristics of the value chain also affect the capabilities and opportunities of value chain actors to engage with various forms of upgrading.

Figure 4 ▼

Mechanisms by which social media impacts value chains



6.4 Value chain characteristics and configuration

Value chains are defined by a range of contextual factors that direct flows of tangible and intangible resources through the value chain and present opportunities for—and constraints to—upgrading among individual value chain actors or creating and maintaining effective value chain linkages. There are many potential contextual factors that can be considered in value chain analysis, but those with the greatest relevance to the focus of this study and its data are: governance dynamics; government intervention; key roles and nodes; network effect; scale of production; primary market(s); specific qualities of the product (i.e., production conditions, perishability, requirements for processing, etc.); and access to logistics, finance, and information.⁶⁴

The study analyzes the case study value chains according to this framework and describes social media-enabled strategies applied in social agriculture to pursue opportunities and overcome constraints associated with the characteristics and configuration of the value chain, facilitating upgrading. These produce livelihood outcomes for value chain actors, which can further enhance their capabilities for upgrading. This mechanism can remove or reduce value chain constraints, thereby redefining the contextual conditions in the value chain and creating impact. Figure 4 shows the mechanisms by which the use of social media platforms can impact value chains, which inform the research questions of this study and the structuring of this report.

07 Case study value chains

This study uses analysis of the conceptual frameworks outlined above and hypotheses about which value chain configurations are well suited to social agriculture to select case study value chains that have potential to provide the most illuminating insights into social agriculture.⁶⁵ This study takes on three case studies of different primary agricultural products and their value chains—cassava, broccoli, and snail—specifically selected for their potential to provide insights into social agriculture in Nigeria.

⁶⁵ Hypotheses were based on findings from a preceding exploratory study on social agriculture in Kenya, and on the experience and expertise of the research teams that conducted it and this study. See Caribou Digital et al., “Social Agriculture” [project page].

7.1 Cassava

Cassava was selected as a case study since it is one of the most significant crops in the Nigerian agricultural economy, is widely produced and consumed throughout the country, and has particular significance for the livelihoods of smallholder farmers who produce the majority of cassava in Nigeria. It also provides an example of a mature value chain that existed long before the introduction of social media, demonstrating the ways in which the introduction of social media is impacting the value chain and actors.

Literature review

Cassava is a perennial, versatile tuber crop that adapts easily to different climates and soil conditions and can be cultivated year round.⁶⁶ It is a dietary carbohydrate staple for most Nigerians, cutting across cultural and social divides.⁶⁷ Among all the cash crops in Nigeria, cassava production plays a significant role in securing the livelihoods of the rural poor and providing a sustainable avenue for value chain actors to create positional advantage.⁶⁸ Cassava is produced largely at a subsistence level in Nigeria primarily by smallholder farmers,⁶⁹ who account for 95% of total cassava production.⁷⁰

Smallholder cassava production is highly labor intensive and remains largely un-mechanized.⁷¹ Most farmers use traditional manual implements, and most production labor is supplied by family members.⁷² The lack of adequate transportation infrastructure throughout Nigeria, most notably in rural areas, limits trade and commercial-scale value addition. It remains challenging to aggregate and move raw cassava from rural farms to processing plants.⁷³

The cassava value chain is characterized by long chains of actors that generate relatively small value additions.⁷⁴ The three channels by which cassava and its byproducts reach end markets are: small-scale production for traditional food; medium-scale production for improved food products; and large-scale production for industrial products.⁷⁵ The first channel dominates the industry; at least 80% goes for traditional food, nationally, with only 10% passing through the third channel into industrially processed products.⁷⁶

66 Otunba-Payne, "An Analysis of the Role of Women in the Cassava Value Chain in Nigeria."

67 Raufu et al., "Cassava Production and Options of Sales Outlets in Oyo State."

68 Ho et al., "Leveraging Innovation Knowledge Management to Create Positional Advantage in Agricultural Value Chains."

69 Olukunle, "Evaluation of Income and Employment Generation from Cassava Value Chain in the Nigerian Agricultural Sector."

70 Otekunrin and Sawicka, "Cassava, a 21st Century Staple Crop."

71 Otunba-Payne, "An Analysis of the Role of Women in the Cassava Value Chain in Nigeria."

72 Abila, "Labour Arrangements in Cassava Production in Oyo State, Nigeria."

73 Coulibaly et al., *Regional Cassava Value Chains Analysis in West Africa*.

74 Coulibaly et al., *Regional Cassava Value Chains Analysis in West Africa*.

75 Olukunle, "Evaluation of Income and Employment Generation from Cassava Value Chain in the Nigerian Agricultural Sector."

76 Daniels et al., "A Report on Cassava Value Chain Analysis in Niger Delta."

Cassava tubers begin to deteriorate three to four days after harvesting,⁷⁷ and processing of cassava tubers is essential to reduce its natural cyanide content, as well as extend shelf life, reduce post-harvest losses, avoid contamination of products and environment, increase nutritional and market values, and reduce transport costs.⁷⁸

In Nigeria, an estimated 90% of the cassava produced is processed into a variety of staple and specialized foodstuffs including *garri*, *fufu*, *tapioca*, cassava flour, and semi-processed dried “chips,”⁷⁹ which are a base material for many later processing activities. Cassava is also industrially processed into chemical products including starch and ethanol, and cassava processing waste can be reprocessed into animal feed, glue, and pharmaceutical materials.⁸⁰ Processors use both locally fabricated and imported machines to process cassava, and processing cassava happens at the cottage-industry level, micro-processing centers, small- to medium-scale processors, and large-scale processors.⁸¹ The local food products are mostly sold domestically, while a few quantities, mainly *garri*, are exported to neighboring African countries, Europe, and America.⁸²

Cassava contributes greatly to the agricultural GDP of Nigeria,⁸³ which is a leading producer of cassava tubers in Africa (46.7%) and the world (26.4%).⁸⁴ While cassava production is increasing at 3% every year, the bulk of the rising demand for the various industrial products that can be made from the crop—such as glucose, dextrose, and starch—is being met by importation due to inadequate local and national production, processing, and marketing of industrial cassava-based products.⁸⁵ The continued surge in interest and demand for cassava is driving local interest towards the improvement of agronomic cassava techniques.⁸⁶

The cassava value chain in Nigeria is supported by many institutions, including the Ministry of Agriculture and Natural Resources, which has policies and programs for promoting and improving production, processing, and export.⁸⁷ There are also established cassava agricultural associations, research institutes, and specialized breeding programs developing enhanced varieties. Cassava production generally benefits from a positive investment outlook and has attracted the attention of governments, NGOs, and private investors because it has numerous opportunities that contribute to economic growth and development in Nigeria.⁸⁸

77 Dada, “Taking Local Industry to Global Market.”

78 James et al., “Producing Gari from Cassava: An Illustrated Guide for Smallholder Cassava Processors.”

79 Otunba-Payne, “An Analysis of the Role of Women in the Cassava Value Chain in Nigeria.”

80 Raufu et al., “Cassava Production and Options of Sales Outlets in Oyo State.”

81 Otunba-Payne, “An Analysis of the Role of Women in the Cassava Value Chain in Nigeria.”

82 IITA, “Cassava Products’ Trade across the Border.”

83 Ikuemonisan et al., “Cassava Production in Nigeria”; Donkor et al., “The Impact of the Presidential Cassava Initiative on Cassava Productivity in Nigeria.”

84 FAOSTAT, “Food and Agriculture Data.”

85 Olukunle, “Evaluation of Income and Employment Generation from Cassava Value Chain in the Nigerian Agricultural Sector.”

86 Deloitte, “Agricultural Opportunities in Africa: Crop Farming in Ethiopia, Nigeria and Tanzania.”

87 McNulty and Oparinde, “Cassava Value Chain in Nigeria: A Review of the Literature to Inform the Integration of Vitamin A Cassava”; Oparinde et al., “Information and Consumer Willingness to Pay for Biofortified Yellow Cassava.”

88 Donkor et al., “Income Inequality and Distribution Patterns in the Cassava Value Chain in the Oyo State, Nigeria.”

7.2 Broccoli

Broccoli is a novel, recently introduced agricultural product in Nigeria that has been gaining popularity in the country—in terms of both production and consumption—over the past decade. This was a primary reason for its selection as a case study, since it provides an example of an immature, newly emerging value chain developing in tandem with the presence of social media platforms. This selection was also supported by anecdotal reports that social media is playing a key role in the recent introduction and popularization of broccoli in Nigeria.

Literature review

Searches for scholarly literature on the broccoli value chain in Nigeria were entirely unfruitful, probably due to the very recent introduction of broccoli into the country and its production scale remaining relatively small at present. However, context for the broccoli value chain can be drawn from the findings of this study and reference material from outside Nigeria where relevant.

Broccoli is a biennial cruciferous (brassica) vegetable renowned for its health benefits, including for immunity, detoxification, and eye and bone health. It is rich in essential vitamins (C, Bs, and K) and minerals (magnesium, phosphorus, zinc, calcium, iron, selenium). Broccoli contains high levels of antioxidants, which help protect cells from oxidative stress and reduce the risk of chronic diseases such as cardiovascular disease and cancer. It also provides high quantities of dietary fiber, promoting gastrointestinal health and aiding in weight management.⁸⁹

Broccoli cultivation requires cool, moist growing conditions and well-drained fertile soil. As such, the open-field production range of broccoli in Nigeria is limited to the climatic conditions found exclusively in Plateau State—though this study also documents broccoli production occurring elsewhere in climate-controlled hydroponic greenhouses. At present, open-field broccoli production in Nigeria is typically small-scale with low startup costs, low labor requirements, simple cultivation and harvesting methods, low competition (due to the novelty of the market), and good potential profit margins, making it a relatively accessible and appealing agricultural business venture for those in the right location to grow it outdoors.

There is a relatively small consumer market for broccoli within its production range, and it is instead consumed primarily by a niche group of wealthy, health- and food-conscious end consumers in urban and peri-urban centers who have often learned about broccoli via social media—which plays a significant role in its rising popularity and the growth of the market. Transport linkages between distant primary production and consumption sites are key in the broccoli value chain, and air freight is used by some actors to ensure the quality of the product

on delivery by reducing transit times and avoiding the risks of road transport, which takes too long and is plagued by poor infrastructure.

Broccoli is generally traded and consumed in its unprocessed form, which is highly perishable, requires careful handling and transportation, and must reach the end consumer within 12 to 24 hours of harvest to avoid spoilage. This makes broccoli a relatively simple value chain in terms of value addition, though this study also documents an innovative processing method of drying and grinding broccoli into a powdered “flour” health supplement to be consumed in prepared dishes such as *swallow* and as an additive to health drinks.⁹⁰ This process prevents spoilage (and can even make use of after-harvest spoilage), extends shelf life, eases transportation, and appeals to a different customer base. In this case, the broccoli processor also acts as an aggregator, sourcing the raw product from producers and local markets, processing it within its primary production range, and distributing the processed product to an end-consumer market in distant urban and peri-urban areas.

There are no formal institutional financing pathways for broccoli production in Nigeria, and most actors in the value chain are self-funded. This has potential to become a notable constraint to scaling up the broccoli value chain, though at present the market remains small, niche, and adequately served under current financing conditions, though there is potential for growth and financing options will be of key importance. Likewise, at present there are no institutions in Nigeria promoting and supporting the broccoli value chain.

7.3 Snail

The snail value chain provides a livestock case study and was also selected due to anecdotal reports of small-scale snail production gaining popularity via social media. (One research participant runs a snail farming Facebook group with around 100,000 members.) As an unconventional product only recently turned over to commercial production, there are also few formal informational pathways for the practice of snail farming (heliculture) and snail processing. Instead, people are turning to their peers, often via social media, to meet their information needs and share their own knowledge and experience with others to address the information gap and develop the value chain.

⁹⁰ Swallow is a doughy, dumpling-like side dish that can be made from a variety of staple carbohydrates/flours including cassava, yam, corn, wheat, and plantain. It is served with many traditional dishes. Broccoli powder is marketed a healthier alternative for those seeking to reduce their consumption of carbohydrates for health reasons.

Literature review

An important alternative source of animal protein, which has received relatively little scholarly attention in Nigeria, is the snail.⁹¹ Giant land snails are a nonconventional wildlife protein source in Nigeria and some other parts of Africa.⁹² Snail meat has been found to be higher in protein content (37%–51%) compared to poultry (18.3%), fish (18%), beef (17.5%), and pork (14.5%), and is high in iron and low in fat, sodium, and cholesterol.⁹³ Protein from snail meat is said to be very rich in all essential amino acids.⁹⁴ Snail meat forms a substantial part of the meat diet of some local people and fetches a good price in the open market.⁹⁵ Prices are often higher than for beef or mutton, due primarily to increasing consumer demand and insufficient supply.⁹⁶ Aside from its rich meat, snail shell also serves as raw material for different end uses including animal feed, construction materials, and as additives to many industrial processes.⁹⁷ Researchers have found molecules in snail slime secretion are worthwhile for the development of drugs and natural skin care treatment.⁹⁸

There used to be cultural taboos forbidding the production and consumption of snails, but sensibilities have recently shifted and snails are now a popular and desirable food in Nigeria.⁹⁹ Historically, most of the snails marketed and consumed in Nigeria were foraged from the wild, and few farmers existed for commercial snail rearing. Snail farming is gaining popularity in Nigeria, though snail farmers are still relatively few and these farmers typically operate at small scales.¹⁰⁰ The advantages of heliculture over most other livestock include low capital requirements to establish and operate, less demand for professional knowledge, very high fecundity and low mortality making them high yielding,¹⁰¹ lower labor requirements, and availability of ready domestic and international markets.¹⁰²

Snails can be sold live and are packed in bags, wooden crates, or baskets for transportation to other farmers for “growing on,” or for later processing by retailers and caterers.¹⁰³ Snails can be processed by smoking, drying, or canning to prolong shelf life and ease transportation and storage.¹⁰⁴ Despite the rich nutritional benefits of snail meat and its rising popularity as a nutritional and

91 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

92 Fagbuaro et al., “Nutritional Status of Four Species of Giant Land Snails in Nigeria.”

93 Mba, “Factors Influencing Demand for Credit among Snail Farmers in Edo State, Nigeria,” cited in Nnodim and Ekpo, “Factors Constraining Commercial Farming of Snail among Farmers in Rural Areas of Rivers State.”

94 Cobbinah, Vink, and Onwuka, *Snail Farming in West Africa: A Practical Guide 1-6* cited in Nnodim and Ekpo, “Factors Constraining Commercial Farming of Snail among Farmers in Rural Areas of Rivers State.”

95 Cobbinah, *Snail Farming in West Africa: A Practical Guide*.

96 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

97 Babalola et al., “Design and Preliminary Evaluation of a Snail Shelling Machine.”

98 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria”; Bayode, “Snail Production Techniques: An Opportunity for Self-Sustenance in the Face of Economic Recession.”

99 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

100 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

101 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

102 Akinbele, *Teach Yourself Farming (Snail Rearing)*.

103 Onuigbo, “Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria.”

104 ENADEP, “Annual Report.”

dietary alternative, snail meat processing has not received significant attention through innovations, research, and investments in processing technology and facilities.¹⁰⁵ Other constraints to snail production include the cost of processing equipment, transportation difficulties, low/lack of financial capacity for business expansion, poor infrastructural facilities, shortage of labor, poor access to markets, problems with disease and contamination, poor storage facilities, and a lack of funding pathways.¹⁰⁶

105 Babalola et al., "Design and Preliminary Evaluation of a Snail Shelling Machine"; Baba and Adeleke, "Profitability of Snail Production in Osun State, Nigeria."

106 Onuigbo, "Economics of Snail Production in Enugu East Agricultural Zone of Enugu State, Nigeria."

08 Meet the participants

The 27 research participants represent a “complete” collection of value chain actors, in the sense that they fulfill roles in all the major nodes of an archetypal value chain: input suppliers, suppliers of information, farmer-producers, aggregators, processors, and retailers. Some of these labels are used broadly, and many individual participants occupy multiple roles or nodes within the value chain, as discussed in section 8.2.

Among our “retailers” we find a business owner moving industrial quantities of raw and processed cassava, and a young woman selling sacks of processed cassava *garri* as a side hustle. We find a chef preparing snail delicacies to serve in her restaurant and a snail farmer gathering the slime from her snails to use in skincare and cosmetic products. We find an ex-pilot using her aviation experience to charter flights to transport only the freshest broccoli down from the heights of Plateau State—the only place in Nigeria where broccoli reliably grows outdoors—to her select customers in the lowlands, in prime condition ready to be sauteed and served to guests at the chef’s table.

Among our processors we find a CEO of a large company producing innovative cassava-based food products (cassava custard, anyone?) and a young woman defending the nutritional value of Nigeria’s indigenous crops. We find another young woman reducing food waste by dehydrating and milling after-harvest spoilage broccoli into a broccoli-powder health supplement popular on Instagram, and a woman who knows how to use every part of the snail: meat, guts, slime, shell, and all.



Key
 ○ Broccoli
 ● Cassava
 ● Snail

Figure 5 ▲

Location of study participants by value chain

We find an aggregator collecting tens of tons of cassava for export to foreign buyers, and another supplying her own restaurant with snails to be fried with pepper and served with beer to enthusiastic and hungry customers.

We find farmers of all stripes, from backyard snail farmers using old tires for snail pens to cassava kings plowing dozens of acres. We find broccoli being grown outdoors in the cool, moist soil of Plateau State, and being grown without soil at all in the artificial environment of a hydroponic greenhouse laboratory in Ogun State.

We find those without whom agriculture could not thrive, carriers of seed, stock and other farm inputs, and we find passionate educators sharing their knowledge, experience, and enthusiasm for agriculture on social media to hundreds of thousands of avid followers.

The study sample includes 27 participants from the 3 case study value chains (10 for cassava, 9 for broccoli, 8 for snail), 11 of whom are women and 16 of whom are men.¹⁰⁷ The age of participants ranges from 24 to 40 years, and they are located throughout 9 Nigerian states, primarily in the South-West and Central Regions of Nigeria. Figure 5 shows the approximate location and distribution of participants. Note that some of these are localized around the production range of each crop. Throughout this report, the value chain of participants is noted with an emoji: cassava 🍌; broccoli 🥦; snail 🐌.

¹⁰⁷ The researchers sought as best as possible to ensure an equal representation of men and women in the sample.

8.1 Educational background

Most social agriculturalists identified in this study are highly educated with advanced qualifications, though not all of them have formal *agricultural* training or backgrounds; in fact, more than half (58%) of participants do not. The cassava value chain participants show the highest proportion of agriculturally inclined backgrounds, 6 out of 10, with the rest possessing degrees in other fields. Similarly, among snail value chain participants, more than half do not possess any agricultural background, and in the broccoli value chain, none of the participants who talked about their educational backgrounds actually studied agriculture at any point of their educational journey.

8.2 Sources of income




Hustle culture is strong in West Africa. Many participants occupy multiple roles or nodes within the value chain, and/or have other professional roles, side hustles, and sources of income outside of agriculture. It is therefore important to honor the plurality and complexity of working identities in the region. Sometimes this takes the form of upgrading (verticalizing) within the same value chain—as is particularly common in the snail value chain—and at other times engaging in completely (or seemingly) unrelated fields, like one participant who sells both insurance and *garri* (cassava flour).

The pattern of multiple simultaneous roles and income sources is particularly prevalent, though not limited to, the cassava 🍌 value chain where about half of the participants have other jobs. Kehinde, apart from being a cassava aggregator, makes money from helping startup businesses source capital and funding. Favour is an aggregator and retailer of village-processed cassava *garri* and also works for an insurance agency. Also in the mix is Folarin, a cassava farmer who conveniently works for a starch company which he supplies with his own cassava. Oluwudara creates added-value cassava and guinea corn products, apart from her job as an ad-hoc staff for a radio station. Rofiat is a private sector extension agent and also has a farm where she produces vegetables and arable crops which she sells for additional income. Pelumi's main income comes from an industrial cassava processing company for which he is CEO, but he also dabbles in digital writing. The remaining four respondents in the cassava value chain get their income strictly from agribusinesses. Mohammed aggregates cassava for processing into *garri* and semi-processed cassava chips. Tunde is involved with cassava aggregation, production, and agricultural consultancy. Timothy is an agronomist and agricultural consultant, and Sanusi is operations manager of an agricultural input company, an agribusiness consultant, and farmer.

Participants in the broccoli 🥦 value chain are mainly involved in agriculture as their primary source of income. Four (50%) of them—Samuel, Samson, Gyang, and Ladi—are actively involved in broccoli production at some level. Samuel also sells inputs (primarily broccoli seed), Samson also trains students in hydroponic farming, and Ladi is primarily an input supplier offering agronomic advice along with her products and runs a productive demo farm from which she sells her produce. Adetokunbo is a chef selling broccoli dishes in his restaurant, Ebegbulem aggregates and sells fresh broccoli, and likewise does Ryakeng who, as an ex-pilot, uses her aviation experience to coordinate air freight to transport her broccoli. Grace is a broccoli aggregator and processor who dries and mills broccoli into a powdered health supplement that she sells primarily via Instagram.

The snail 🐌 value chain participants also get their major income from agriculture, although in most cases this income is spread across multiple nodes and activities in the value chain. Eight out of nine participants (Ezekiel, Oko, Kester, Temisan, Miriam, Bello, Victor, Dare) gain income from actively farming snails themselves. Of these participants, all but Dare also offer training and consultancy on snail farming in person or via social media. Kester, Miriam, Bello, and Dare also process their own snails for sale, while the others sell their snails live for later processing. Supplying inputs (eggs or “grower” snail stock and feed) provides income for Ezekiel, Oko, Kester, and Miriam. And Chukwudumebi runs a catering company serving snail dishes, for which she aggregates and processes snails herself. Figure 6 shows the different value chain activities in which each of the study participants is directly involved, either primarily or secondarily. For more detail about what each participant is up to and the big picture in Nigerian social agriculture, take a look at the ecosystem map produced as part of this research project.¹⁰⁸

Figure 6 ▼
Sources of income among study participants

	Primary	Secondary				
		Cassava		Broccoli		Snail
Inputs	Sanusi	Oluwadara	Ladi	Samuel	Oko	Ezekiel Kester
Information	Timothy Omotoshi	Tunde Mohammed Kehinde Pelumi	Samson	Samuel Ladi	Ezekiel Kester Victor	Oko Temisan Bello
Production		Sanusi Omotoshi Tunde Folarin Pelumi	Samuel Samson Gyang	Ladi	Ezekiel Oko Temisan Miriam Bello Dare	Kester
Aggregation	Tunde Mohammed Kehinde Favour	Sanusi Folarin Oluwadara Pelumi	Ryakeng Ngozi	Samson Grace		Chukwudumebi
Processing	Kehinde Folarin Oluwadara Pelumi Favour		Grace		Dare	Kester Miriam Bello
Retail	Favour	Omotoshi Oluwadara	Ryakeng Ngozi Grace Adetokunbo	Samuel Samson Gyang	Chukwudumebi Dare	Miriam Bello

8.3 Duration of social media use for business

Most of the participants have been using social media for personal reasons for far longer than business reasons and later brought their businesses to social media. Reports of the duration of business use range from 2 to 13 years, averaging 6 to 8 years.

8.4 Entry points into social agriculture

"I saw people advertise, I saw that people were making money via social media ... and I am like 'instead of uploading just random pictures, I can sell', and then I tried it the first time, it worked and I was surprised ... I can use it to market my products."

 **Oluwadara (cassava aggregator, processor, and input supplier)**

"I would get calls, people will be like 'Okay, so what's your handle on Instagram? This way can I check what you're doing?' ... I'm like 'Okay, I have to at this point.'"

 **Temisan (snail consultant)**

"A lot of young people are on social media and they see what we do, so people that are not even key players then are coming in, there are a lot of people coming in."

 **Ngozi (broccoli producer)**


Many of the study participants adopted social media platforms for their agricultural livelihoods after seeing others doing it online, or after repeated inquiries about their social media presence from customers, clients, and business contacts. Similarly, some participants entered agriculture—sometimes for the first time and often with no prior agricultural experience—because they were inspired by social agriculturalists they saw on social media platforms.

"Whenever I am on social media, I see people advertising their market, their products and everything, so I got to know that, okay I can also advertise my business here."

 **Folarin (cassava aggregator and processor)**

"I just started researching, searching for other people that were into it and then checking out what they've done so far, and I did some."

 **Dare (snail producer)**

Amos , a snail farmer and consultant, was encouraged to make training materials for YouTube by a client's cousin who could see the value his work could have for those looking to take up into snail farming.

"This is something you can put on YouTube and people will gladly want to buy into the idea. At that time, I didn't know anything about YouTube to be honest ... my first five videos were uploaded by him and before I knew it ... I got fifteen calls: 'I saw your video on YouTube and I like what I saw, I would like to set up a snail farm.' And I was like 'Wow ... just like that.'"

 **Amos (snail consultant)**

However, the relatively low barriers to accessing social media platforms lead, to many new entrants into social agriculture. Participants report seeing a churn of new attempts, though many of these are unsuccessful due to wider business-related inadequacies.

"We see a lot of new Instagram pages selling strawberries, and you're like 'Oh, interesting, welcome.' After some time, they disappear, because ... they don't know the methods we use to mitigate risks ... because they haven't learnt, over time, these things ... We won't make those mistakes and we don't make these losses, because we've made it in the past already ... and we have moved on."

 **Ryakeng (broccoli aggregator and retailer)**

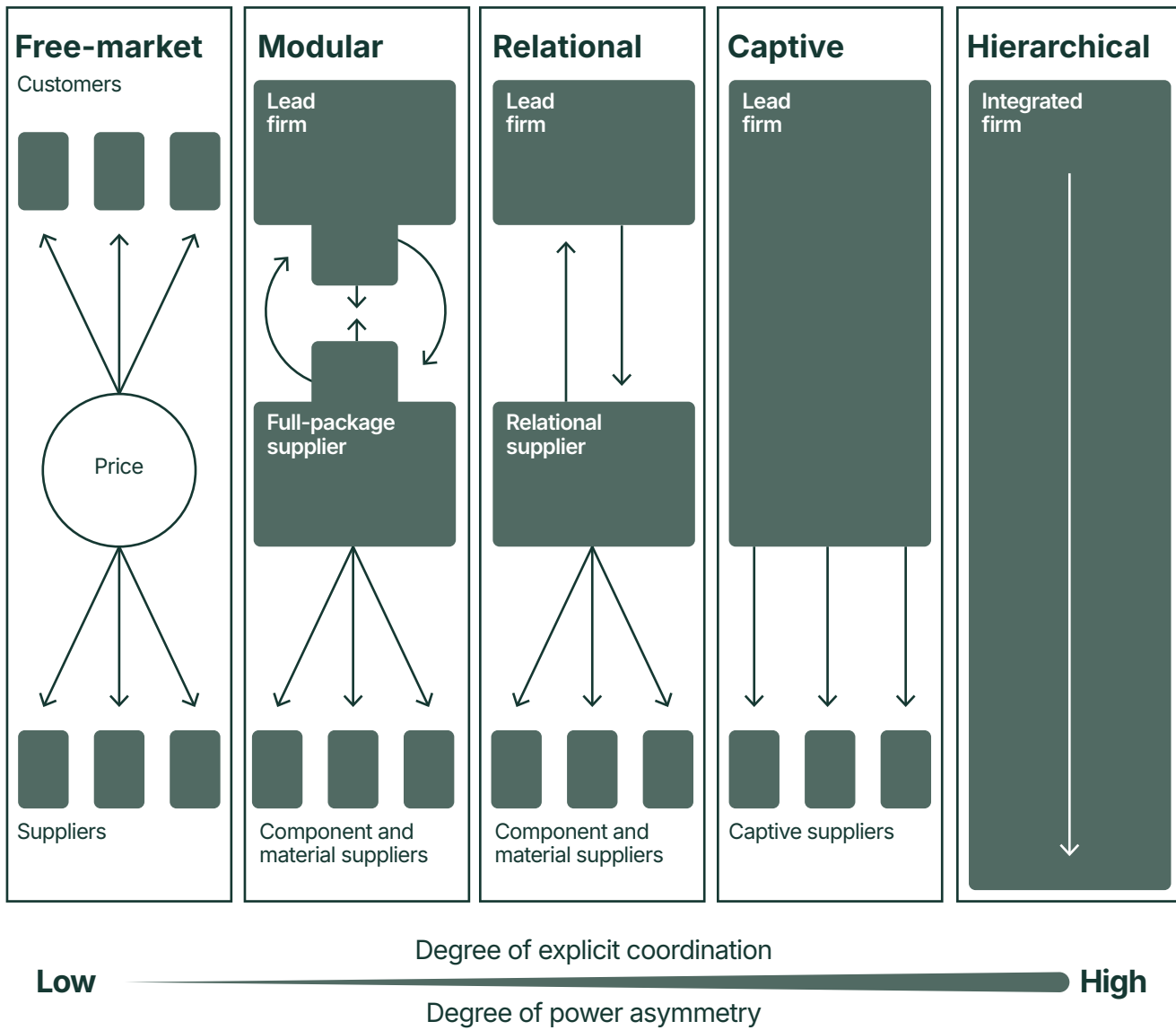
09 Contextual factors influencing agricultural value chains

This section draws on elements from the value chain configuration and characteristics framework introduced in section 6.4 that bear the greatest significance to the practice of social agriculture in Nigeria. Definitions for these are adapted from USAID.¹⁰⁹ Discussion and analysis identify the ways in which each factor presents general or specific constraints to upgrading within the case study value chains. In turn, the section presents the various social media-enabled practices and strategies employed by participants to address or overcome these constraints.

Figure 7 ▼

Value chain governance

Source: USAID, "Value Chain Development Wiki"



9.1 Value chain governance

Value chain governance refers to the relationships between the various actors in the value chain and their individual and collective activities to bring a product to market. Power imbalances in value chain governance can constrain the ability of individual actors to influence the overall operation value chain, and their ability to innovate and upgrade their products, processes, value chain functions, and distribution channels. Value chain governance can be *free-market*, *modular*, *relational*, *captive*, or *hierarchical*. Figure 7 illustrates the relational, coordinational, and power dynamics of governance.

Due to the scale, length, maturity, complexity, and diversity of the cassava value chain, different channels in the value chain exhibit different governance structures. Local production, cottage-industry processing, and traditional consumption can operate on a *free-market* or *modular* basis, while large-scale industrial channels can involve *relational* and *captive* governance models. Examples of each can be found in this study, such as processors specifying a requirement for enhanced varieties and providing embedded services such as inputs and training to their network of farmers to produce them in a *relational* structure, and small suppliers being dependent on a few buyers in a *captive* governance structure.

Governance and power structures in the cassava value chain are fairly well established, with experienced and competitive actors already occupying all the major roles/nodes in the value chain. This poses a constraint to upgrading opportunities among individual actors and necessitates greater networking between individual actors to facilitate the various value additions required to bring the product to market, which also introduces relational power dynamics. For example, processors in the industrial cassava value chain hold considerable power due to the necessary role of (often complex and costly) technology in their processing facilities required to move the primary agricultural product through the value chain and into the consumer market.

As a key crop that supports the livelihoods of many rural smallholder farmers, and for its sizeable role in Nigeria's agricultural economy, the cassava value chain also has considerable institutional support from government ministries and NGOs, which also influence governance dynamics and the capabilities and opportunities for value chain upgrading among individual actors.

As a novel product in Nigeria, the broccoli value chain is currently small, short, simple, immature, and informal. At present there are no significant inter-actor governance-based power imbalances and no notable institutional structures of influence that might otherwise introduce governance dynamics. Likewise, the relative shortness and simplicity of the value chain in terms of value addition—notably that it does not require processing before consumption—currently eliminate the need for large-scale industrial processes and facilities, which also might otherwise introduce governance dynamics. Thus, the broccoli value

chain generally operates on a *free-market* basis, and upgrading within the value chain is relatively accessible. There is some evidence of buyer-driven decision-making with reference to production varieties and of input suppliers providing embedded services, which hint at the emergence of a loose *relational* governance structure.

As with broccoli, the snail value chain is, at present, relatively small, short, immature, and simple. Though there is some complexity in terms of value-addition processes—requiring processing prior to consumption—these processes are still relatively simple and are mostly performed by hand by farmers themselves at the point of production, or by retailers/consumers at the point of retail/consumption. This eliminates the need for large-scale industrial processing facilities which might otherwise introduce governance-based power dynamics. Likewise, inputs are generally homemade for feed, and new stock is generally sourced from existing stock or other farmers. As a result of this combination of contextual factors, upgrading is relatively accessible in the snail value chain, and several of the study participants occupy many (or sometimes all) value chain nodes. This further reduces the potential for inter-actor governance-based power structures; thus, the snail value chain also exhibits a *free-market* governance dynamic. Likewise, there are no notable institutional structures that might otherwise influence governance dynamics. However, some participants in the snail value chain are working towards establishing a snail growers' association which, if successful, could potentially influence value chain governance.

The use of social media platforms by social agriculturalists has the potential to influence value chain governance dynamics by facilitating activities outlined throughout this study, including accessing finance, the democratization of information and knowledge, advocacy and the inclusion of marginalized voices in the policymaking process, the formation of cooperatives and associations, and other forms of collective action, as discussed in more detail in [section 11.9](#).

9.2 Government intervention

Government intervention is a part of governance and can be supportive and/or controlling. Governments may exert regulatory control over any or all value-addition processes and resource flows, constraining the autonomy and agency of individual actors to influence the operation of the value chain and engage in self-directed upgrading. Equally, government institutional support through intervention programs, incentives, and support networks can aid upgrading and networking capabilities and opportunities among value chain actors.

Due to the significance of cassava to Nigeria's agricultural economy and its major role in securing the livelihoods of the rural poor, the cassava value chain receives considerable government support through interventions, programs, and grant funding. These mechanisms can enhance the capabilities and opportunities for value chain actors to upgrade their processes, products, value chain functions, and distribution channels. They often facilitate networking opportunities to create linkages throughout the value chain, which can enhance the effectiveness and competitiveness of the value chain as a whole.

"It is part of ADP's [Agricultural Development Projects] mandate to have their own farmers that they have been working with over the years ... We call them 'contact farmers' and ... when you talk to one contact farmer you are equally talking to ten other farmers."

 Omotosho (cassava extension agent)

There is currently no government institutional involvement directed specifically toward the broccoli and snail value chains. However, some participants have received government-sponsored grants and networking programs aimed at MSEs and agricultural businesses in general. Some actors in these value chains are also working toward establishing government-sponsored associations.

9.2.1 Social media-enabled strategies in response to government intervention

This study documents social media platforms being used for a variety of activities relating to government intervention, including the formation of agricultural social media groups by government agencies and groups for stakeholder advocacy in policymaking processes.

Dare 🐌, a snail farmer, processor, and retailer, belongs to a WhatsApp group created by the Ministry of Micro, Small and Medium Enterprises, where users post available opportunities like grants and training. Oluwadara 🍌, a cassava aggregator, processor, and retailer/exporter, leverages the WhatsApp group functionality to inform fellow actors in her network of upcoming meetings with government agencies. In the group, members advocate for large numbers of stakeholders to prepare for and attend the meetings, to lend their voice to the discussions and influence the outcomes.

“We are organizing a roundtable meeting with government stakeholders as to how they influence our activities as local food processors ... So what we are doing right now is to ensure that we get as many people who are members ... of this community to register and be present for that roundtable meeting with these government organizations.”

 Oluwadara (cassava processor and exporter)

9.3. Value chain network effect

“As an aggregator you have to start with having a network of smallholder farmers that you buy your commodities from. And it's based on the trust they have for you and the trust you have for them ... I have a network of cassava farmers, aggregators, and also processors too.”

 Kehinde (cassava aggregator and consultant)

“For the logistic persons ... transporters are more organized than smallholder farmers, so we go through their union ... Through that we have some of them that offered to become dedicated transporters to us.”

 Pelumi (cassava processor, producer, and consultant)

The **network effect** refers to the number of value chain actors or activities that contribute to the value-addition process in a value chain required to bring the product to market. It is largely defined by the length and complexity of the value chain. Some value chains are short and simple—requiring relatively few value additions—while others are longer and more complex, requiring more value additions and thereby increasing the network effect. The maturity of a value chain also plays a role in this dynamic, with the network effect typically increasing as value chains mature and become larger, longer, and more complex. Value chain actors are part of the network, and to fulfill their role they must create and maintain the various linkages and relationships relevant to their position required to move the product through the value chain.

Actors in the cassava value chain seem to leverage larger and more complex networks of linkages and relationships across the value chain than broccoli or snail. This correlates with the maturity and scale of the cassava value chain; the extent to which cassava is more deeply culturally embedded and more widely produced, distributed, and consumed in Nigeria and beyond (including internationally among the Nigerian diaspora population); the level of institutional backing and associated networking opportunities; and the longer

value-addition process and broader diversity and complexity of products into which cassava can be processed. These factors of scale and complexity can constrain opportunities for functional upgrading between value chain nodes/roles or verticalization across nodes/roles. Likewise, governance and power structures in the cassava value chain are more established, with experienced and competitive actors already occupying all the major roles/nodes. This also constrains upgrading opportunities and requires greater vertical networking between individual actors to facilitate the various value additions required to bring the product to market. Unlike in the snail and broccoli value chains, the cassava value chain has various institutional structures such as government programs, agricultural associations, and unions which can assist in the creation and maintenance of business networks.

“The way we get the farmers is we go through their association ... that’s for the traditional smallholder farmers. Then we also ... do ‘farmers field day’ where, through their association, we are able to invite these smallholder farmers to events ... we have a lot of them who will show interest.”

 **Pelumi (cassava processor, producer, and consultant)**

By contrast, as smaller-scale, less mature, shorter, and less complex product value chains lacking institutional support, actors in the broccoli and snail value chains seem to leverage relatively smaller networks. At present, there are no significant governance or power structures operating in these value chains, which operate on a free-market basis. These factors combined mean the broccoli and snail value chains require fewer linkages to bring the product to market, and there are fewer constraints to functional upgrading across the value chain, which is more common in these value chains. Nonetheless, cultivating and maintaining strong networks and relationships founded on trust is considered universally important across the board, and social media plays a significant role in facilitating such relationships.

9.3.1 Social media strategies responding to value chain network effect

“You hear ‘A friend of yours on Twitter told me to call you,’ ‘Somebody gave me your number on LinkedIn’ ... Social media has been playing a lot in terms of giving me ... client referrals, and even in terms of people validating who you are.”

 **Tunde (cassava aggregator, producer, and consultant)**

Social media platforms play a significant role in facilitating necessary business networks by improving visibility and connectivity, and by easing interactions that create and maintain relationships. Some social agriculturalists are targeted in their use of social media platforms—for example, to recruit specific people or

businesses required to fulfill their goals, or from among a particular audience or demographic—and others value referrals through existing contacts. There is some difference among study participants in the ways social platforms are used for the purpose of business networking for both vertical and horizontal value chain linkages. Vertical linkages throughout the various nodes of a value chain are key to move a product through the value chain, and for the transfer of information about product specifications relating to value-addition activities and end-market characteristics.

“For input suppliers, we get some through social media ... For the Gen-Z farmers, we use social media to attract them. We put up things that are possible in the agricultural space, because a lot of them don’t even know ... And then some ... come for training ... We [also] use our social media to get distributors ... Last year we put up that we wanted distributors nationwide, and we got quite a number of interest.”

 **Pelumi (cassava processor, producer, and consultant)**

“I wanted snails, so I went on Facebook and typed ‘snails for sale.’ I got a number and we started talking because that particular person has a lot of experience in the business ... whenever I have a problem or a challenge, I call her and ask her if it’s something she can help me with and she always has a solution to it.”

 **Miriam (snail producer, processor, and retailer)**

Alternatively, fostering horizontal linkages with other value chain actors can enhance cooperation, the transfer and co-creation of knowledge, and improved efficiencies that can enhance the overall development and competitiveness of the entire value chain. Note that this generally requires actors to see others in their value chain not as competitors but as peers and collaborators, as is particularly common among participants in the snail value chain (discussed in more detail in [section 9.9](#)).

“I sent him a message like ‘I really like what you’re doing, I don’t know if you’ll put me through in one way or the other because you’re more like a senior to me in this business.’ He accepted and he put me through ... and I can say it was really of great help.”

 **Chukwudumebi (snail consumer and restaurant owner)**

“What I’ve been doing on Instagram ... I have other I have other farmers that are partners, some even came down from Abuja [and] from Ibadan just to partner with me ... all of these people are using Instagram, they don’t even use Facebook.”

 **Bello (snail producer and processor)**

Linkages outside of the primary agricultural value chain can also be valuable for improving various skills and forms of knowledge that can improve agribusiness operations.

“There are some social media influencers, especially on Instagram, that I follow ... They have some specialized courses in which they will ... take you through how to put your story out, how to make good use of engagement, understanding when to post, understanding the time that you get great engagement ... I have been very fortunate to work with genuine trusted people that have managed these pages.”

 Victor (snail producer and consultant)

9.4 Primary market(s)

The **primary market(s)** of agricultural products can be *local, domestic, or export* (products may be distributed via all three channels), which defines some of the activities required to bring a product to market (i.e., processing, packaging, and distribution). It also bears relevance to the primary production location(s) of the product, and the distance and conditions between production site and consumption market. These factors are therefore relevant to the capabilities and opportunities of value chain actors to upgrade process, product, and distribution channels.

Nigeria is a vast country, and the production location of a product and its primary market(s) for consumption can be very distant, posing challenges which intersect with the product's perishability, processing, and logistics required to transport it properly and reliably. The intersection of these factors can limit the viable markets for a product and thereby constrain channel upgrading, forcing suppliers to limit their market distribution channels and turn down orders from certain locations because they can't risk the product arriving in poor condition and customers being dissatisfied or demanding refunds.

Cassava is widely produced throughout Nigeria and widely distributed via wholesale and end-consumer markets throughout the country. However, much of it is produced by smallholder farmers in rural areas with poor transport infrastructure and logistical solutions, which remains a notable market distribution constraint in the cassava value chain. Snail is typically produced close to its primary consumption markets, most notably in and around urban centers throughout the south and southwest of the country. Combined with processing or live transportation, these factors pose less of a constraint to market distribution in the snail value chain. Broccoli, however, is primarily produced in Jos in the North-Central Region—the only place in the country

with the right conditions to reliably grow it outdoors—but is primarily consumed in its unprocessed form by affluent health- and food-conscious end consumers in urban centers such as Lagos in southwest Nigeria. Ryakeng 🥦, a broccoli aggregator and retailer, overcomes this constraint with air freight logistics.

“... from Jos, my major market is Lagos. I focus more on Lagos because, first of all, we get more orders from Lagos and then we have direct flights from Jos to Lagos ... it's just about an hour flight ... So with packaging and time, whatever happens, within four to five hours you have the product in the customer's house.”

🥦 Ryakeng (broccoli aggregator and retailer)

However, air transport routes throughout the country are limited, so constraints to market distribution channels remain. Grace 🥦 uses social media platforms (primarily Instagram) to create a new market and thereby upgrade the distribution channels for her innovative upgraded powdered broccoli product, which is less perishable and more robust in terms of handling and distribution. Her primary market is also affluent health- and food-conscious end consumers in urban centers, whom she finds on Instagram. She also shares information about the health benefits of her product to grow her market.

9.5 Specific qualities of the product

“As soon as cassava is being uprooted, it has to start going to the processor ... because it will still spend some hours on the road. So you won't want any delay on that.”

🍠 Kehinde (cassava aggregator)

Specific product qualities relevant to this study include **production conditions**, **perishability**, and the **level of processing required before consumption**. Perishability describes how quickly a product spoils and how fragile it is, which can require specialized handling from harvest to distribution and consumption. Some products are processed to reduce perishability through e.g., drying, smoking, freezing, packaging etc., which constitute value additions and determine the various value chain functions required to perform these—and also define viable distribution channels. Together these factors bear relevance to capabilities and opportunities for upgrading among value chain actors. While some processing is optional and intended to reduce perishability, some products absolutely must be processed to make them safe for human consumption. This affects their flow through the value chain, such that they may necessarily

pass through facilities with advanced and/or costly processing techniques and technologies to reach end markets. This can introduce governance-based power dynamics, and such technological and financial requirements can constrain the ability of individual actors to upgrade their value chain activities. Many agricultural primary products (i.e., crops or livestock) require specific conditions for their cultivation, such that they can only be produced in certain areas. This bears relevance to perishability, markets, and logistics, the intersection of which defines opportunities for, and constraints to, upgrading among value chain actors. Each of these factors is described in more detail in the case study literature reviews and analyzed throughout this study.

Adequate understanding of and planning for the specific qualities of a product significantly contribute to the success of agricultural businesses based on these products, and this is critically considered in business operations among participants. Perishability most significantly affects producers, aggregators, and retailers who deal with raw, unprocessed products. A product's perishability is also critically linked with distance between its primary production and consumption locations (as discussed in [section 9.4](#)) and with logistics to transport perishable goods between locations properly and reliably. The intersection between high perishability, disparate production and consumption locations, and logistical challenges in Nigeria poses a significant constraint to channel upgrading to reach new markets (see [section 9.6](#)). Cassava and snail require some level of processing before consumption, while broccoli is typically eaten raw or cooked at the point of consumption, though this study also documents innovative broccoli processing practices.

The raw cassava tuber is fairly robust, but is still moderately perishable and requires processing within four to five days, ideally less. Cassava inherently requires processing before consumption to remove its natural cyanide content, and processing typically reduces perishability through drying. Generally, processed cassava products are in turn packaged to further reduce perishability. Broccoli is highly perishable and must reach end consumers within 12 to 24 hours of harvest. It is also quite fragile and requires careful handling to avoid spoilage.

"I think broccoli is one of the most difficult vegetables to transport and to handle because if you do not take care of it, the next morning it will turn yellow. You have to go the extra: putting in a black nylon, putting clean film, making sure that something is absorbing the moisture and all of those things."

 **Ngozi (broccoli aggregator and retailer)**

"When somebody orders broccoli from me I have to ask the person 'What's your location?' ... If, by my calculation, it's going to take more than 24 hours, I would simply not take that order."

 **Ryakeng (broccoli aggregator and retailer)**

Grace 🥦, a broccoli aggregator and processor, has overcome the inherent risks associated with broccoli's high perishability by upgrading her product into a dried, ground powder form—which has a longer shelf life and is much more robust in terms of handling and distribution—enabling her to upgrade her distribution channels into new markets.

The snail value chain is quite different because the commodity in question is livestock and is often traded live, posing risks of transferable pathogens and contamination, which can have devastating consequences, particularly for farmer-producers.

"I made a lot of mistakes ... I went to the markets, I bought a lot of snails... After I got home you will not believe I lost like 98% of the snails that I bought. They all died. It was fungi and bacteria infection that was killing them, and I was overcrowding the pen ... I was mixing breeds together ... I never knew! So, I went to another market ... I was like 'Maybe it's from the market, let me try another market.' Ha! This time around I lost everything."

👤 **Bello (snail producer)**

"The first set of snails from the farm, we lost them, and we lost almost 2 million naira worth of snails. But we understood why that happened, and that has helped us mitigate against that kind of loss ... harsh conditions ... poor management ... there are a lot of things that you learn as you do ... [that] you cannot be taught anywhere and that is something we always tell our clients."

👤 **Oko (snail consultant and producer)**

Snails must be slaughtered and processed to remove shells, slime, and offal, and require cooking before consumption. They are typically processed by hand at the site of production by smoking, drying, or canning to reduce perishability before distribution, or at the site of consumption for cooking fresh after being transported live. Processed snail products are considerably more robust, but still come with some challenges.

"If it's something that is live or fresh, I can easily take it back and put it into the refrigerator, or ... back to the farm. But when it comes to dry snails, I have to keep on preserving it, heating it, for it not to get spoiled."

👤 **Mariam (snail producer, processor, and retailer)**


9.5.1

Social agriculture strategies in response to specific product qualities

The use of social media platforms appears to be of greatest relevance to social agriculture strategies addressing perishability, most notably in securing a market in advance of harvest—often via social media marketing, networking, and coordination—to ensure correct harvest quantities and swift transportation, thereby reducing the risk of spoilage and losses. This is relevant not only to the case studies but to all agricultural value chains.

“The perishable side of it is when you do not make your market well before it starts bringing heads ... If I see the heads start coming out and it has given me a good shape, I would start making my market. So that when I remove it, I would carry it directly to the person that needs it ... I'll tell them the quantity I have, or they will tell me the quantity they want. I'll then harvest that quantity and supply it to them.”

 **Gyang (broccoli producer and retailer)**


Omotosho  reports how her use of social media platforms to secure a market in advance of harvest has reduced spoilage and associated losses with her cassava crop.

“My products are not wasting; the year before I had a lot of vines, they just rotted on the farm.”

 **Omotosho (cassava extension agent)**

“We produce for a market that is already waiting. We are not producing hoping to sell, we are more like contract growers in quote, meaning there is already a market waiting to take the produce before we go ahead and produce. So perishability is not a big issue for us.”

 **Samson (broccoli producer and trainer)**

While Grace's  innovative broccoli processing activity is not explicitly enabled by her use of social media platforms, she does sell the vast majority of her powdered broccoli product in the social media market, mostly on Instagram.

In summary, the characteristics of an agricultural product, notably perishability, significantly shape the online and offline activities of the social agriculturalists in this study—particularly with regard to processing, market-making, and logistics. The most notable social agriculture strategy employed to overcome this constraint is to ensure a ready market to reduce the risk of spoilage and losses, often with the help of social media platforms. The critical relationship between perishability and logistics also drives other social agriculture strategies related specifically to logistics.

9.6 Access to logistics

“We’ve made so many customers, and we’ve lost so many because of the logistics.”

 Ryakeng (broccoli aggregator and retailer)

“The primary issue for me now is to have at least ... a 70% assurance that logistics is settled.”

 Ngozi (broccoli aggregator and retailer)

Access to logistics is required for the distribution of agricultural inputs and outputs. This is a significant constraint in Nigeria due to poor-quality infrastructure, potentially long travel distances on poor-quality roads, and often demanding climatic conditions. Inadequate or ineffective logistics can constrain process and product upgrading, which may depend on the distribution of inputs, and channel upgrading, which may depend on the distribution of outputs. Logistics appears to be one of the most significant challenges that participants face.


“There are a lot of challenges we are still having ... in terms of logistics... You see some of the trucks breaking down. I’ve had issues where the truck will stay almost 5 days ... on the road before they get to the factory. And because the factory is going to pay me based on weight, and cassava ... [the] bulk of it is water; it would have lost weight, some of it is rotten ... the truck left your farm with about 20 tons; by the time it’s getting to the factory ... they’re telling you your product is 10 tons ... just because of the delay in logistics.”

 Tunde (cassava aggregator, producer, and consultant)

Nigeria is a vast country, and the production and consumption locations of a product may be very distant. For example, broccoli is primarily produced in Jos, Plateau State—which has ideal growing conditions—but is primarily consumed by affluent, health- and food-conscious urban and peri-urban consumers in places like Lagos. Of the case study value chains included in this study, those working with broccoli also had the most to say on issues with logistics with reference to disparate primary production and consumption locations, and the highly perishable nature of their basic product requiring highly reliable logistics. Such factors can significantly constrain channel upgrading; suppliers are forced to limit their distribution channels and turn down orders from certain locations because they can’t risk the product arriving in poor condition and customers being dissatisfied or demanding refunds.

"We have so much infrastructure deficit in our country, which makes it very difficult or almost impossible to reach certain parts of the country ... As a marketer or a business owner who wants to deliver quality to a customer, I have to consider the person's location: 'How do I get this produce to the customer in the best condition?' ... I find myself turning down a lot of orders because I do not want to take an excessive risk ... I can actually deliberately reach out to a larger market on the internet ... like there are some influencers that I know if you engage them, you'll get the sales. But my fear still goes around logistics. I wouldn't want a situation where I have to deal with a lot of customers and I cannot satisfy them ... Marketing, yes, it's good but then logistics in Nigeria, whew ... it's a lot."

 **Ryakeng (broccoli aggregator and retailer)**

Some participants have adapted their business model with specific reference to logistical challenges. For example, Ryakeng  strategically limits the size and locality of her customer base to those she knows she can reliably service and uses air freight to reliably transport fresh broccoli to her target market.

"Sometimes you have to deal with refunds and replacements for the customers; at the end of the day it's not profitable. So we decided to change our model ... instead of servicing 1,000 people and ending up quarrelling with 800, why not service just 200 who can pay for the service, right? ... So we decided to stick to just flights."

 **Ryakeng (broccoli aggregator and retailer)**

"... from Jos, my major market is Lagos. I focus more on Lagos because, first of all, we get more orders from Lagos and then we have direct flights from Jos to Lagos ... it's just about an hour flight ... So with packaging and time, whatever happens, within four to five hours you have the product in the customer's house. When the product gets to Lagos we have dispatch riders who pick it up and deliver it to the customer's house."

 **Ryakeng (broccoli aggregator and retailer)**

Logistical challenges also pose a restraint to functional upgrading. Some participants have made attempts to upgrade their value chain function by handling their own logistics or by upgrading their product with packaging, but were dissuaded due to negative experiences with logistics.

"We worked a bit around logistics, to try to get our products to the last man easily. But we soon realized that [it] was a whole different ball game doing logistics, so we switched back to pure production."

 **Samson (broccoli producer and trainer)**

“The only challenge that I can ever say that I faced as a business person is logistics ... having customers is not an issue; packaging is not an issue ... [but] put them in the best cartons, put ... [it] on its way to getting to the customer ... something happens. It just means that all my efforts into branding have been wasted. So whenever anybody says ‘Oh put some labelling, put some branding.’ I’m like, ‘You know what? These things are secondary.’”

 **Ngozi (broccoli aggregator and retailer)**

Since the perishability of the product is a major risk factor for logistics, it is most relevant to cassava and broccoli, which are both typically off-taken from producers and transported in an unprocessed state. This appears to be less of an issue for snails, which are more commonly processed at the point of production and transported in a preserved form, or transported live and processed at the point of sale.

“For local purchases, we go with the regular transport services. Like, we transport snails around the country via regular buses. But usually the clients that order snail for export usually have their own logistics covered ... and we also have some contacts from the airport, so if we need to, we can—but most times when people want large quantities they usually have their [own] logistics.”

 **Okoko (snail producer and consultant)**

9.6.1 Social agriculture strategies in response to logistical challenges

Social media and other platform solutions can play a role in overcoming logistical challenges and constraints, though there are limitations to the improvements that digital solutions can provide for a logistics system that still depends on poor physical transport infrastructure and involves unpredictable and challenging transport conditions. Some participants find that social media has helped them to secure logistics in a more location-specific way, reducing travel and transport distances and therefore the risk of logistical issues significantly impacting the quality of their product. This appears to be more relevant to downstream actors with greater buying power who may choose to access products in different localities, particularly for cassava, which is widely produced and distributed throughout Nigeria and has greater and more complex networks in the value chain than broccoli or snail upon which to draw. Whereas farmer-producers are confined to their location of production, they can also benefit from the activities of aggregators and other off-takers who can facilitate, via social media, more viable logistics solutions to offtake their produce.

“In terms of logistics ... social media has been able to connect us with delivery agents or logistics companies at the place where the product is going and that would have cost me more if I had to travel down there myself.”

 **Pelumi (cassava processor, producer, and consultant)**

“What I do basically to maximize profit is that if I’m supplying a company for instance ... I use the farmers in that locality ... that are very close. Just to maximize profit because the farther the distance, the higher you are going to pay.”

 **Kehinde (cassava aggregator and processor)**

Platformized solutions have been developed with the aim of overcoming the logistical challenges of operating agricultural businesses in Nigeria. One participant mentioned using these solutions instead of traditional logistics suppliers.

“Mostly, I use third-party startups, logistics startups ... What I do basically is to get an agreement with maybe Kobo360 or any of these logistics startups. We agree on the price that they’re going to charge for every truck and they normally do insurance too just to guide against any unforeseen circumstances.”

 **Kehinde (cassava aggregator and processor)**

In summary, logistics is a major challenge for the Nigerian agricultural sector due to poor-quality infrastructure, potentially long travel distances on poor-quality roads, and often demanding climatic conditions. This poses notable difficulties for perishable agricultural products such as fresh fruit and vegetables, which are a mainstay in social agriculture, and constrains functional and channel upgrading. Social media usage can play a limited but notable role in remediating this by enabling the sourcing and operation quality logistics, enhancing communication, substituting logistics suppliers by locality, and enabling actor-mediated innovation in logistics solutions. However, significant physical logistical challenges remain that cannot be overcome through the use of social media platforms alone.

9.7 Access to capital and finance

"I have explored different means in raising funds for my business, and I'm going to be very straightforward and sincere; I've used bank loans, I've used friends and family funds in terms of investment ... and took the money as investment to pay returns on it with interest, and I've also used some of the profit made from business ... you understand?"

 **Tunde (cassava aggregator, producer, and consultant)**

Access to finance can be met by sources including financial institutions (i.e., banks), government/NGO donors, aggregator financing, business investment, crowdfunding, friends and family, or personal finance. Capital and finance are often required for innovation and upgrading within the value chain, and lack of access to finance can constrain upgrading capabilities and opportunities among value chain actors.

Sources of funding for participants in this study vary according to the capabilities and opportunities of each participant, and much is determined by the scale and sophistication of the business in question—as well as start-up and operational costs, the readiness of the market, and the profit margins to be made. Sources of business finance are more diverse in the cassava value chain than in the snail value chain, and the least diverse in the broccoli value chain, where personal finance and the turnover from business are typically the only income sources reported for business start-up and operational costs.¹¹⁰ This pattern of self-financing is fairly common among study participants, with stories of small beginnings, and those with enough personal finance to easily make the leap into a new venture.

"I started with one bag ... I just say 'Ha-ha let me just try this thing' ... That was when garri was about ten thousand [naira] a bag. So that was how I had to save up to start little by little just gathering profit and money from other things I was doing."

 **Favour (cassava aggregator and retailer)**

"I've worked in a bank for ... about nine years ... I was acquiring a lot so I didn't really struggle with finance."

 **Misan (snail producer and consultant)**

¹¹⁰ It is worth acknowledging that finance is often a sensitive subject to discuss with research participants; the research team worked to capture financial aspects as best as possible.

Other sources of finance include loans from cooperative associations and grants from NGOs. This is mostly relevant to the cassava value chain, for which there is notable institutional support and available intervention funding from government institutions and NGOs, cooperatives, and associations.

“The first loan I got was from ... a cooperative organization.”

 **Folarin (cassava aggregator and processor)**

“There was a time I got finance from an organization that looks after women in business ... There was also a time I got a grant from international unit for business.”

 **Oluwadara (cassava aggregator, processor, and input supplier)**

However, the bureaucracy involved to access such support can often be challenging, especially for those with poor literacy or educational attainment, and even sometimes for highly educated individuals.

“The only way that we could access finance ... will be through intervention funds ... the bottleneck and bureaucracies around accessing these intervention funds is even enough to push you away on its own.”

 **Pelumi (cassava processor, producer, and consultant)**

Such institutional support is, at present, largely absent from the broccoli and snail value chains, though actors in both value chains are working towards developing formalized institutional structures such as cooperatives and associations, and more general non-value-chain-specific financial support for agricultural businesses may be available. Soliciting funds within business, social, or familial networks is also a common approach, though as a less formalized or secured financial pathway, it is deeply dependent on trust.

“If I want to do maybe a large supply for instance, you know there are other people that trust me. The business has to do with trust ... So I call them ... They know me, they know my house, we interact. So I have been able to build that level of trust and confidence ... it has to do with a number of years ... maybe over four, five years. So, you are able to put the resources together and at the end of the supply, after payment is made, I pay them back their capital with interest too. So that has been my own support.”

 **Kehinde (cassava aggregator and processor)**

Participants report various issues with formal financial systems, ranging from the bureaucracy involved in getting a bank loan to lack of applicability to small-scale or informal enterprises, and a poor general investment outlook on agricultural businesses.

“The conventional banks, the conventional finance institutions, are not willing to put their money into cassava, especially [not] primary production.”

 **Pelumi (cassava processor, producer, and consultant)**

“One time like that I tried the bank, they could not help me ... they were not able to give the loan, so I don't depend on people like banks ... because they failed me once, so I just removed my mind from them.”

 **Gyang (broccoli producer)**

“Let's even leave the banks alone, no bank will give money in this agriculture because they believe agriculture is high risk, you understand. It is only a few of them that really support agriculture and before they even give you funds, they will need to do their own due diligence ... [only] if you can get LPO [Local Purchase Order] from a reputable firm and they are sure you can supply that firm, they can give you funding.”

 **Kehinde (cassava aggregator and processor)**

There seems to be an air of skepticism of financial institutions, including for stating high, hard to understand, or even intentionally misleading interest rates.

“I've been to several workshops ... with those financial institutions ... Really it's frustrating now ... they come to our farmers [saying] ‘We will give you this, we will give you that, we will do that, just come, no collateral, nothing is needed.’ I tried myself as a literate to go through the processes and by the time we get to the end ... They were telling me it had to be 18% interest ... The one they sent to us online ... what was written there was 9%. How can 9% turn to 18%?”

 **Omosho (cassava extension agent)**

Access to finance is a notable constraint to all forms of upgrading, which typically require up-front investment or otherwise pose potential financial risks that some actors in agricultural value chains—especially MSEs, which are widely represented in the social agriculture community—may not be willing or able to take given the financial constraints they experience. Access to capital can also influence power dynamics, such that larger, more heavily financed actors have more power to govern the structure of the value chain.

9.7.1

Social agriculture strategies in response to financial constraints

Social media use can play a limited but notable role in accessing finance among social agriculturalists, particularly for seeking investment, including among international investors, for finding out about grant-funding opportunities, for coordinating finance among family and friend networks, and for crowdfunding.

"I once got a grant from [an] international unit. All the process was via social media; I saw the advert, I put in for it and I was selected, went through the training and all that ... And then the other I got from a female organization that looks after women in business [which] was also through social media."



Oluwadara (cassava aggregator and processor)

"Social media can also help with getting investments into the industry ... with social media, people can get more knowledge about such opportunities, by promoting investment into agriculture, into cassava, then it can help raise funds needed for such projects."



Tunde (cassava aggregator, producer, and consultant)

Some participants report receiving (often unsolicited) messages from investors via social media offering to finance their operations in exchange for a return on investment. Sometimes such agreements are entirely informal and based on trust or reputation, which is open to risk of abuse. One participant noted that, even when a formal contract is put in place, trust in such procedures is relatively low in Nigeria; signees can easily use false information, move to a new address, or change their contact details after the contract is signed, making accountability challenging. Reputation and social capital built and maintained both online and offline are key to instilling trust in informal financial arrangements, which are seemingly common among MSEs in the Nigerian agricultural sector in general, and in social agriculture in particular.

"The business has to do with trust ... They know me, they know my house, we interact. So I have been able to build that level of trust and confidence ... [over] a number of years. So, you are able to put the resources together and at the end of the supply, after payment is made, I pay them back their capital with interest too. So that has been my own support."



Kehinde (cassava aggregator and processor)

In summary, capital and financing for social agriculture businesses come from a wide range of sources, including personal finance, friends and family, business profits, investment, government and NGO grants and funding, crowdfunding, and institutional bank financing. However, the general consensus is that conventional banking and financial institutions do not look favorably on agricultural businesses or small-scale agripreneurs. Thus, this source of funding is challenging to access and very infrequently successful. Access to finance is a significant constraint to all forms of upgrading, and unequal access to capital can introduce power dynamics that influence the governance structure of value chains. Social media plays a limited but notable role in sourcing business capital and financing, particularly for finding out about government and NGO grant-funding opportunities, for sourcing business investment (including from foreign investors), and for crowdfunding activities. Trust and social capital are critical to securing informal financial arrangements in general, and particularly in social agriculture, where there may be less trust established between actors.

9.8 Access to information and knowledge

Access to information can be met by *extension and intervention programs* led by governments, NGOs, research institutions, and commercial enterprises; *general materials* published both online and offline; and *peer or professional networks*. Knowledge and access to information about processes, products, value chain functions, and distribution channels are necessary for upgrading among value chain actors, such that inadequate access to information becomes a constraint to upgrading.

Established, mature value chains, such as cassava, typically have a wealth of knowledge and information and often receive various forms of support from government ministries for agriculture, NGOs, and academic and private research institutions creating and disseminating knowledge and information. Novel, immature, and under-developed value chains, like broccoli and snail, often lack these collective and individual sources of information and knowledge, which can constrain individual and collective upgrading in the value chain. Under these circumstances, actors may turn to peers and/or international communities to access information, or they may co-create knowledge through practice and innovation. Social media platforms have come to play a major role in the transfer of agricultural knowledge and information in this way. They afford greater visibility and connectivity throughout the value chain, are a tool for the transmission of codified and practical knowledge and market-related information via vertical value chain linkages, and enable the transfer and co-creation of knowledge via horizontal value chain linkages—thereby aiding individual and collective value chain upgrading.

9.8.1

Social agriculture strategies for accessing information and knowledge

"I get my information online and offline but social media plays at least 45% of it ... You might find yourself on Twitter, on Facebook, or whatever ... So from there, you can even get one or two pieces of advice on your own."

 **Sanusi (cassava input supplier)**

Social media plays a vital role in sourcing agricultural information among the Nigerian social agriculturalists in this study, mirroring findings from the preceding exploratory study on social agriculture in Kenya.¹¹¹ Different platforms are valued for sourcing information and for different informational purposes. The most mentioned platforms in this study, with reference to sourcing high-quality information, are LinkedIn, X (formerly Twitter), WhatsApp, Telegram, and, to a lesser extent, YouTube. Rofiat , a cassava extension agent, also rates Telegram for serious and focused discussion groups. The participants see social media as a way to quickly access news and perspectives from other expert voices in their value chain. Sources of information may include posts and content, as well as active discussion in groups focused on a specific topic. For more information about the various uses of social media groups, see section 11.9.

"I learn a lot about industry events on social media ... and some of the network groups I also belong to give me some of the information too ... Some of the latest trends come from social media. Some of the recommendations I get for consulting also come from social media ... Social media has been playing a lot in terms of giving me information."

 **Tunde (cassava producer, aggregator, and consultant)**

While a great deal of information is shared in public groups (e.g., on Facebook), WhatsApp groups are private with closed membership. Members typically know each other personally, or are at least connected via a common acquaintance, which increases the perceived value and reliability of the information in such groups.

"I get most of my information that relates to the business online ... WhatsApp has a critical role to play, these days you can easily communicate on WhatsApp. And social media plays a very good role in me sourcing and accessing my information ... If I see something online about my business or about my industry, I can quickly share information with my colleagues through any of the social media platforms I know they are using and have conversations and discussions about it."

 **Pelumi (cassava processor, producer, and consultant)**

Aside from practical and operational information, social media platforms are a valuable resource for accessing market information and gaining market intelligence.

“One of the advantages of social media ... It helps you to identify your market target so you know where you are channelling your energy.”

 **Sanusi (cassava input supplier, producer, and aggregator)**

The use of social media to source and share information is near universal across the study sample, both across and between the case study value chains. However, it appears to be most prevalent in the cassava and snail value chains. This correlates with the greater scale and networking effects in these value chains by comparison to broccoli (discussed in the following section), the greater wealth of collective knowledge found in these value chains (as discussed in this section), and the associated higher prevalence of membership in social media groups (discussed in section 11.9)—which are primary sources of information—in the cassava and snail value chains, as compared to broccoli.

9.9 Market competition

“Let me say that I will still have that edge over what they do because at the end of the day, I have access to more, no matter how saturated in the field you are, there are still more prospects out there to be explored.”

 **Sanusi (cassava input supplier, producer, and aggregator)**

Market competition can occur between actors in the same market or value chain, and can also relate to the overall competitiveness of the market as a whole. Adversarial competitive relationships between value chain actors who perceive the market as a zero-sum game can simultaneously drive innovation and upgrading among individual actors in order to remain competitive, and constrain upgrading among those who are outcompeted. While this dynamic may result in short-term benefits for those who succeed, it decreases the overall competitiveness of the value chain as a whole. By contrast, supportive and effective relationships between value chain actors can also drive upgrading instead via the transfer and co-creation of knowledge and skills, and enhances the overall competitiveness of the value chain. Social media platforms can equally be used in both instances and we hear reference to each among the study participants.

In different ways, participants seem to be generally comfortable with the idea of inter-actor competition and their ability to remain competitive in their respective markets. Maintaining perspective of the potential scale and growth of markets—and the potential for the overall market to become more competitive such that it benefits all actors in the value chain—can be reassuring.

9.9.1

Social agriculture strategies to address market competition

The use of social media platforms to access and create new markets is in itself a form of process upgrading, as it affords improved efficiencies for marketing and market-making. Favour 🍌, an aggregator and retailer of cassava *garri*, recounts how she has been able to upgrade her distribution channels to access new markets on social media platforms where inter-actor competition for her product is still relatively low.

“People normally ... use social media for selling maybe weave-ons, shiny and catchy things and all that. But for garri, I don’t think people have really discovered that niche in social media. So, I think the competition is not really much for now.”

🍌 Favour (cassava aggregator and retailer)

In the broccoli value chain, participants feel that competition is high, and they observe many new entrants using social media to pursue the new distribution channels it affords. However, apart from the fact that the market is growing and has significant potential to continue, experience in the industry sets some experienced actors apart from those newly entering into the value chain.

“I think competition is actually very high ... A lot of young people are on social media and they see what we do, so ... there are a lot of people coming in. But the only thing that will actually put that distinction between you and them is that you’ve had experience; you know how to operate better ... Customers see ... the difference between you, that you’re here and the new person ... is trying to find his or her feet.”

🥦 Ngozi (broccoli aggregator and retailer)

“In the market in our space, there’s competition. But the competition is good ... Nigeria is a large market, and since we sell food I do not foresee a time where I would say we have too many marketers and too few customers, right? ... We have had so many supposed competitors come and go ... One thing that I think that has kept me and some other ladies I know is resilience. I know so many people that have come into our space and they have run away, because ... they don’t have the patience that we have and they did not take time to study the space as we did.”

🥦 Ryakeng (broccoli aggregator and retailer)

Though social media platforms are widely available, not everyone uses them in business. Those who do—and who do so well—find themselves at a competitive advantage against those who do not.

“Social media has really changed the game for us, so I don’t think those people should be in the same line with us in terms of competition ... They can’t even compete with us, because we are reaching a huge number of people.”

 **Samson (broccoli producer and trainer)**

The snail value chain seems to be quite cordial in nature and more aligned with the values of supportive and effective inter-actor relationships, enhancing the overall competitiveness of the value chain as a whole. Participants cite a large under-served market with plenty of room for growth and profit to be made. They also describe a collaborative atmosphere—often facilitated via social media platforms—that enhances the competitiveness of the value chain as a whole through cooperative horizontal linkages facilitating the transfer and co-creation of knowledge and skills, and the building of social capital among those who might otherwise be deemed competitors.

“The beautiful thing about heliculture is there is a huge market ... I don’t look at it as competition, I look at it more as collaboration, because there is so much money to be made and there is not enough experience and expertise to make the money.”

 **Oko (snail producer and consultant)**

“He’s making videos, he’s posting and I was seeing the audience he was getting ... and I was like ‘Okay I think I should do something like this too, it will help.’ ... I had to summon courage and I sent him a message like ‘I really like what you’re doing, I don’t know if you’ll put me through in one way or the other because you’re more like a senior to me in this business.’ I can say how it was really of great help.”

 **Chukwudumebi (snail aggregator and retailer)**

However, there is speculation over whether this culture could be changing with individual actors becoming more concerned with protecting their own business interests as the value chain matures and power dynamics evolve.

“Right now if you’re sending people messages like that they may not want to help you, because everybody is trying to protect their own interests, they are trying to protect their own business.”

 **Chukwudumebi (snail aggregator and retailer)**

In summary, adversarial market competition dynamics can decrease the overall competitiveness of the value chain as a whole, and can constrain upgrading among insufficiently competitive value chain actors and drive upgrading in pursuit of competitiveness among others. The use of social media platforms can enable channel upgrading into markets with lower levels of competition, but many new entrants are unsuccessful while more experienced actors are more likely to remain individually competitive. The use of social media platforms for supportive and effective inter-actor relationships can also facilitate upgrading and can enhance the competitiveness of the value chain as a whole.

10 Prevalence and uses of specific social media platforms

“We use Instagram the most for marketing. Instagram works best.”

 **Ryakeng (broccoli aggregator and retailer)**

“Facebook is kind of easier and a lot of people are on Facebook ... Facebook has a larger audience than Instagram.”

 **Miriam (snail producer, processor, and retailer)**

“If Nigerians can utilize that LinkedIn the sky will be your limit because you won't just get a local buyer but international investors.”

 **Mohammed (cassava aggregator and consultant)**

“If there was no Twitter, then I don't think I would have been in business.”

 **Okoko (snail consultant and producer)**

Across all three value chains, personal WhatsApp (as opposed to WhatsApp for Business) is used by all 27 participants,¹¹² followed by Facebook, which is used at varying levels of intensity by 26 out of 27 participants. X (formerly Twitter) is the third-most-used platform, actively used by 19 of the participants, followed closely by Instagram (18) and then WhatsApp for Business (11). Eleven participants also use LinkedIn, 6 use Telegram, and active content creation on YouTube was mentioned by 2 participants. No participants reported using TikTok.¹¹³

112 Interestingly, some participants don't think of personal WhatsApp as a “social media platform” as defined in this study, considering it more like a phone feature akin to SMS and standard phone calls. Notwithstanding this distinction, the use of personal WhatsApp is universal among the study participants; not a single one goes without it.

113 Data collected in March 2023. Two study participants have since reported adopting TikTok for their businesses.

Statistical analysis was conducted to identify any patterns in the distribution of social media platforms used by different actors in the value chain, but it was inconclusive and revealed no statistical pattern. This approach, however, only includes general usage and does not factor in usage intensity or tailored and purposeful uses of specific platforms and their features or audiences for specific goals and purposes. Different platforms have fundamentally different design and functionality, or “affordances” (actions or interactions they are designed for or otherwise enable). These can include the type of media content one can share or receive, the structuring of content, the ways in which one can view and interact with content, and the ways in which users can interact with each other. To a large extent these factors dictate, or at least influence, different prevailing cultures among a platform’s users. For example, X/Twitter was originally a text-only social platform. Though it has since expanded the types of media it supports, the culture of text-based content and commenting still prevails. By contrast, Instagram solely allows visual content (text can only be posted alongside, or embedded in, images or video) and therefore is likely to be of interest only to those for whom this medium is valuable. Such factors also influence the different types of audiences and demographics found on different platforms. Factors such as these affect the choice of certain platforms for specific needs, goals, and purposes among users. One aim of this research project is to gain more nuanced insights into such platform- and affordance-specific uses and behaviors among social agriculturalists, and this report relies on qualitative data to achieve this.

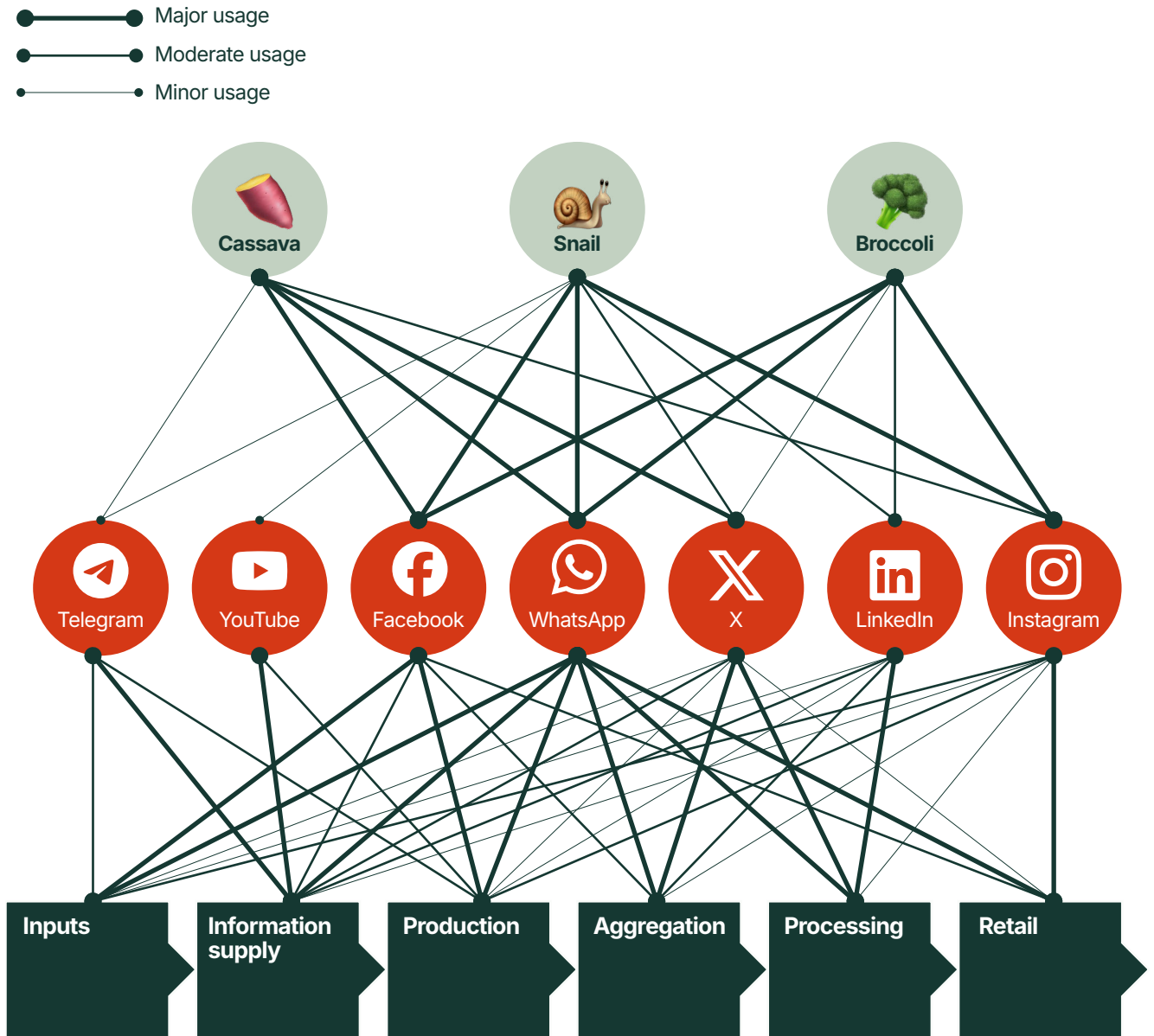
Participants across the three case study value chains have different opinions to what features draw them to—or constrain them from—using certain platforms. Participants often use a variety of different platforms, typically moving fluidly between them for different purposes or stages of their interactions and transactions. X (formerly Twitter) and LinkedIn are considered more “professional” and business-minded platforms for business development and networking, including with international export markets and investors, and for sourcing high-quality information.¹¹⁴ Instagram is more valuable for visual marketing to end consumers and for growing one’s audience with attractive content and “Reels.” Facebook is more widely used by farmer-producers and those who liaise with them in their business activities. WhatsApp is the main venue for group discussions, exchanging information, personal connections, and closing business deals. Though business conversations may start on other platforms, most transactions are finalized on WhatsApp, and most marketing posts on other platforms include WhatsApp contact details intended for this purpose. Some participants appreciate that Meta platforms WhatsApp, Instagram, and Facebook are linked in such a way that they can easily share and interact with content across these platforms. YouTube is more commonly used for long-format video training because the time limits on other video-enabled platforms are not sufficient to communicate some kinds of information. TikTok came up only twice among all study participants, and those few who have tried it did not find it fitting because of its focus on entertainment.¹¹⁵ Figure 8 shows the intensity of usage of different social media platforms disaggregated by value chain and actor node.

114 It is important to note that this is a general perception reported by participants in this study. The EU Transparency Centre of the Code of Practice on Disinformation recently reported that X/Twitter has the highest ratio of mis/disinformation of any major social media platform.

115 Data collected in March 2023. Two study participants have since reported adopting TikTok for their businesses.

Figure 8 ▼

Social media platform use by value chain and node



11 Platform features and affordances

11.1 Video

“On Instagram, Reels are really making waves. There was a time when I posted content on Instagram and I used a regular sound that everybody was using ... it was trending at the time ... that particular video blew my Instagram, I had so [many] orders.”


 Chukwudumebi (snail aggregator and retailer)

Video-based social media content is primarily shared and consumed for the purposes of marketing, consultation, training, and proving or validating authenticity. Video calls, typically via WhatsApp, are also used primarily for consultation and authentication. Different uses of video affordances largely depend on the needs, purposes, and goals of individual value chain actors, which vary according to their role/node in the value chain. The use of video for consultation and training is of greatest value to input suppliers, suppliers of information, and farmer-producers. These actors make the most intensive use of video, though actors engaged in other value chain activities may also share and seek various forms of video-based training and consultation to improve their practices. The use of video for marketing is of course most valuable to retailers seeking to engage potential customers, and it is most heavily leveraged in this manner. The use of video to prove or verify authenticity—and thereby to enhance trust between value chain actors and their networks—is relevant to all value chain actors, but it is most heavily leveraged among retailers, particularly in the broccoli value chain.

Different social media platforms afford different forms of video content, which are used for different purposes. A few participants use Instagram Reels and Facebook Stories to share short-form video content; they noted how this type of content increases their audience engagement and can help to grow their customer base.

“I think more people engage more with Insta Stories and then the Reels as well. So those allow you to be able to market like that ... I think Instagram just works better.”

 **Ryakeng (broccoli aggregator and retailer)**

Chukwudumebi , a snail retailer, strategically includes “trending” audio in her Instagram Reels to help gain traction and engagement—a strategy she discovered by accident when one of her Reels went viral because of her choice of accompanying music, which vastly boosted her customer base.

The trainers and consultants among our participants, who often need to share detailed or complex practical information, tend to prefer YouTube for videos as it allows longer videos than other platforms. This type of content is leveraged most heavily in the snail value chain, where social media is a primary source of information in the absence of formal training resources and pathways, and where supportive horizontal inter-actor relationships are seemingly strongest.

“Most of my videos are large, they are long ... as I take time to explain whatever I’m doing ... definitely I can’t put that on Instagram.”

 **Kester (snail producer and consultant)**

Information shared in this way can either be a part of the content creator’s primary product (i.e., consultation) or can serve as a form of marketing and a way for individuals to prove their value proposition and authenticity. Such video content is generally free to consume on the platform, and some content creators provide information freely in anticipation of gaining more customers from those who view the videos.

For more on social agriculture strategies focusing on visual content such as video, see [section 12.1](#).

11.2 Images

Some platforms, such as Instagram and Facebook, have a heavier focus on image-based content than other platforms, and this is where image-based content is most heavily leveraged. Platforms such as Twitter and LinkedIn lend themselves more to text-based content, though both images and text can now be shared on most social platforms. Image-based social media content is shared and consumed universally—both publicly and privately—throughout the value chains in this study, though the different individual needs and goals of each value chain actor shape the purpose of their image-based social media content and interactions. Images are commonly used for advertising and marketing, not only at the retail end but throughout the value chain—though they are most heavily leveraged among retailers of inputs supplies and end-consumer products. Images are widely used for consultation between farmers and suppliers of information, for example, by sharing photos of crops suffering from pests or diseases for diagnosis and advice from experts, or for demonstrating the application of various inputs. This is typically conducted in private conversations via WhatsApp. Images are also used to prove the authenticity of an individual or their products to their audience or customers, and in this instance are considered most effective if they include the actor’s face. Incidentally, platform algorithms also tend to reward images that include faces with greater traction.

For more on social agriculture strategies focusing on visual content such as images, see [section 12.1](#).

11.3 Audio and voice notes

“I like the voice note ... because some people ... they prefer it verbally and me too personally, I express myself better verbally ... So when you get to talk to people ... they tend to be more convinced.”

 **Mohammed (cassava aggregator and consultant)**

Many social media platforms have audio-based functionality, including voice notes in direct messaging (DM) threads on X (formerly Twitter) and Meta products Facebook, Instagram, and WhatsApp; voice calls on all Meta products; audio-only discussion threads on X/Twitter Spaces and “Live Audio Rooms” on Facebook; and “voiceovers” to accompany image and video posts and status updates on Meta products.

Voice notes are primarily shared via WhatsApp and are widely used for a diverse range of purposes, including to overcome literacy and language barriers, enhance trust and familiarity between actors, and simply for their ease of use by comparison to typing. Ladi 🥦, a broccoli input supplier dealing with farmers, has many clients who are not well educated and who struggle with written communication, so they use WhatsApp voice notes instead. Voice notes are also used to facilitate discussion in tribal languages, which are generally not supported by platforms and devices, and for which the standard keypad may not be suitable. Omotosho 🍌, a cassava extension agent, added that even with voice note functionality, if two parties speak fundamentally different languages they will be unable to communicate. She suggested that in-built translation functionality inside platforms would greatly assist in communicating between actors speaking different languages. Voice notes are of course used simply because they are easier than typing. Tunde 🍌, a cassava farmer-producer and aggregator, appreciates using voice notes when he gets tired of typing or when he feels that texting might not fully capture the message he wants to convey. Omotosho 🍌, a cassava extension agent, appreciates using the voice note when she is multitasking or on the go. By contrast, Pelumi 🍌, a cassava processor, expresses his dislike for the WhatsApp voice note feature because he finds it hard to keep track of conversation in a group chat full of voice notes; you can't easily see the content like you can with text. Likewise, while text is searchable using keywords to reference previous messages, voice notes are not.

X (formerly Twitter) Spaces is relatively unused among participants save for two suppliers of information—one in the cassava value chain and one in broccoli—who use it for training. Meta products Facebook, Instagram, and WhatsApp also have a “voiceover” functionality, where audio can be easily recorded to accompany an image/video post or status update.

“You can do a video of your processing activities and then the end product ... and then you just make a voiceover on it ... It helps my customers to relate more with what I am saying, it helps them to build more trust, it helps them to hold me by my words. And that way it has helped to create some level of credibility.”

🍌 Oluwadara (cassava aggregator, processor, and input supplier)

11.4 Text

Text-based communication is universal on social media platforms for both public posting and private communication, and also supports most other forms of social media content and interactions. Private direct messaging is most commonly used for general discussion, to build and maintain relationships, and to close business deals—and WhatsApp is by far the most popular platform for these kinds of text-based interactions. Both publicly and in private, text may be content-based (i.e., posts) or discussion-based (i.e., conversations), or used to support other forms of visual content. Different social media platforms have different designs and cultures with reference to text, which dictate or influence user behaviors. X (formerly Twitter) was originally a text-only platform and, though this is no longer the case, the culture of text-based content and comments remains prominent. By contrast, Instagram is an image-only platform, and text can only be shared if it is attached to, or embedded in, an image. Distinctions such as these are of key relevance to why certain platforms and affordances are used for specific needs, goals, and purposes, which shapes usage among value chain actors.

11.5 Advertisements

The majority of marketing in social agriculture leverages free-to-use platform features such as timeline/feed posts, posting in groups (both public and private), status updates, Stories (Facebook), and Reels (Instagram). WhatsApp users can easily and freely send broadcast marketing messages to reach all their contacts or post in groups, and WhatsApp status updates are often used for advertising products and businesses. However, some participants—particularly those advertising to end-consumer markets for inputs or end products—also run paid advertising campaigns on Instagram and Facebook and appreciate the relatively low cost of doing so by comparison to traditional advertising methods. This is discussed further in [section 13.3](#). The connection between Instagram and Facebook as Meta products also affords dual advertising campaigns.

“If you pay for ads on Instagram, it shows on Facebook as well. If you pay for ads on Facebook, it shows on Instagram as well ... so they’re actually linked.”

 Dare (snail producer, processor, and retailer)

However, Ryakeng 🥦, who aggregates and markets broccoli to caterers and end consumers, reports better outcomes from Instagram ads than Facebook. This is likely related to the different general audience on each platform; Facebook is more commonly used by input suppliers, suppliers of information, and farmer-producers, while Instagram has a better representation of end consumers, which is Ryakeng's 🥦 target market. Instagram's focus on visual content and its culture of aesthetics is also better suited to marketing to end consumers than, say, to aggregators or processors who are less likely to be concerned with their supply being presented in a suitably "Instagrammable" fashion. Likewise, broccoli is seemingly valued in Nigeria for "beautifying" prepared meals as well as its nutritional content and relative novelty, which are more relevant to Instagram's general demographic of users.

The relatively low cost of social media advertising and the ability to use it in a targeted way to meet individual needs, purposes, and goals leads to some personalized strategies not always for explicit marketing purposes.

"Sometimes you do sponsored ads for followership ... you can use it to make sales ... but sponsored ads are customized for different purposes."

👤 **Victor (snail producer and consultant)**

"As I'm talking to you now, I have an ad that is running ... it will run from now 'til tomorrow, I will get my order for the week. And I will write it down and I will stop the ad. When I'm through with those orders, I will do another ad again, that is the way I do it."

👤 **Miriam (snail producer, processor, and retailer)**

11.6 Tags

Generally, most participants mentioned that tags and hashtags can help their content gain traction or even go viral, particularly if it connects to a particular topic or piece of news that is trending on which they can piggyback. Similarly, when they use the tag feature, people who are tagged are more likely to like, share, or repost their content. These dynamics expose their content to audiences beyond their usual followers, which can boost their audience and profile, potentially leading to more sales. Tags are also used to gain credibility by tagging well-known or widely trusted actors, such that the owner of the original post gains "trust by proxy," which we see Oko 👤, a snail farmer and trainer, doing—as discussed in [section 12.5](#).

11.7 Cross-platform synchronization

New cross-platform functionality—notably for Meta products Facebook, Instagram, and WhatsApp—enables users to post across multiple platforms in a single interaction or link between platforms seamlessly.

“A lot of times, I have gotten people who viewed my Instagram page and then from there they click my WhatsApp link and chat with me through that and we take up business from there.”

 **Oluwadara (cassava processor and retailer)**

“Most times if I post on my WhatsApp status, there is ... an option to share to Facebook ... you can also ... do business from there; they send you a message to your messenger ... I rarely post on my timeline, I use mainly stories, then my WhatsApp status.”

 **Favour (cassava aggregator and retailer)**

11.8 Search functionality

Different platforms have different approaches to handling, cataloguing, and tagging content, and afford different levels of searchability and interactivity for users to access past content. Facebook and Instagram are designed toward a continuous flow of novel content, and older content can sometimes be tricky to find due to the limited efficacy of the cataloguing, tagging, and search functionality on these platforms. YouTube and X (formerly Twitter) apparently have more effective search functionality and past content is easier to access in perpetuity; participants report receiving messages or calls from people who have viewed YouTube videos that are several years old, and the X (formerly Twitter) search functionality can be used in a targeted way to find people and content.

“I just go to the [X/Twitter] search bar and type ‘dry cassava chips seller’... or whatever produce ... that I want to have a buyer for.”

 **Mohammed (cassava aggregator and consultant)**

The different affordances and limitations of this functionality on different platforms will affect the value a user can derive. For example, if they only use platforms with poor content cataloguing and search functionality, they are less likely to be able to find value in the wealth of information that could potentially reside in past content and instead must create new content to engage the right people to meet their information needs in the present.

11.9 Groups

"I am admin on so many WhatsApp groups ... when there is information that you think they should benefit from, you drop it on the group."

 **Pelumi (cassava processor, producer, and consultant)**

"People ask questions and they get answers, say what they are facing, their challenges, and we give them solutions ... I was even surprised when I saw the numbers of people in the group."

 **Miriam (snail producer, processor, and retailer)**

"Basically what they discuss is just to ... strengthen the value chain, because one person cannot do it alone. So they need to synergize, they need to share information, share resources."

 **Kehinde (cassava aggregator and processor)**

Most of the study participants throughout all three case study value chains are members of social media groups related to their value chain or to agribusiness in general. These groups have become valuable means for social agriculturists to share knowledge, training, and support; to offer and find solutions to the challenges they face; to seek business opportunities including marketing, trading, and aggregation; for networking and referrals; and for collective action. Some groups serve many of these purposes in one venue, while others are tailored toward a specific purpose.

The most commonly mentioned social media groups are on Facebook, WhatsApp, and Telegram, which are the primary platforms offering functionality for group and community formation. Most participants joined these groups based on recommendations from friends or people around them. Some also reported that when they attend programs or seminars, attendees and hosts often create social media groups so they can keep in touch with and support one another in perpetuity. There are times they find themselves added to groups

by others who think it may be relevant to them, and they take time to assess the group to see if they can benefit from it.

Such groups afford the creation and maintenance of both vertical and horizontal linkages across value chains, enhance the free transfer of information and innovation, and support the co-creation of knowledge. This can critically enable various forms of upgrading among value chain actors to enhance or diversify their products, processes, and functional activities, or to access new distribution channels. Likewise, the use of social media groups can potentially create new modes of value chain governance through the democratization of information, advocacy and the inclusion of marginalized voices, and collective action.

Social media group membership is widely distributed among the research participants and participation appears to be highest in the cassava and snail value chains, which generally exhibit greater networking effects than in the broccoli value chain—which is still relatively small, simple, localized, and immature. However, Ladi 🥦, a broccoli input supplier and farmer, belongs to a WhatsApp group for broccoli and cabbage farming, and Grace 🥦, broccoli processor, reports that a group she is in helps her to make good sales of her powdered broccoli product. Miriam 🐌, a snail farmer and processor, created a snail group on Facebook which became very successful and now has about 100,000 members. She created the group when the admin of the previous group she belonged to started rejecting her posts and demanding money before approving her posts. She decided to open her own group on better terms, though she still only approves snail-related posts to keep it on topic. Members use the group to advertise their products for sale, give and seek advice by sharing their experiences and challenges, and host group training sessions.

Using social media groups for aggregation is shown to be an effective strategy, particularly in the cassava value chain for which large-scale aggregation is of key importance to support the throughput of industrial processing facilities. One cassava aggregator described a WhatsApp group that was created by a cassava processing company to secure their large input supply requirements from multiple aggregators who are members of the group. The processor simply posts in the group with their request for a certain amount of supply by a given date, and aggregators who can meet a portion of the request offer their supply.

“Any time a processor is looking at doing a large volume and one aggregator is unable to do that large volume, they try to introduce us to the processors [so] that we are able to supply the processor the large volume that they are looking for.”

🥥 Kehinde (cassava aggregator and processor)

Such groups are also used to facilitate substituting supply by locality; for example, if two sellers post a product of interest, the buyer will choose the one closest to their location. Favour 🥥, who aggregates and sells *garrri* (processed cassava flour), reported such groups on both Facebook and WhatsApp.

“... where you sell your products, you also need buyers ... they will just post ‘I need so-so quantity.’ If you are here within this location, you send.”

 **Favour (cassava aggregator and retailer)**

A significant portion of the commercial cassava value chain is a “buyer’s market”; there are many producers throughout the country operating on varying scales, and relatively fewer large-scale processors to whom they can sell their supply. Large-scale commercial processors can choose their supply from any number of potential producers; however, they also typically require larger quantities of supply that can be supplied by a single producer. Using social media groups to create horizontal linkages among many small-scale producers benefits producers, aggregators, and processors to create sufficient economies of scale for smaller producers and/or aggregators to access markets within large-scale processing channels.

Another specific use of social media groups is for networking and strengthening business relationships. In this way value chain actors can access the networks of their peers and receive recommendations and connections from other trusted actors. Finding the right connection can facilitate vertical linkages between individual actors engaged in the different value chain activities required to bring a product to market, strengthening the value chain as a whole. Likewise, such linkages can enable upgrading among individual actors through the acquisition of information, technology, and marketing channels.

“We share experiences, we share information, we exchange contacts ... ‘Do you have somebody that can fabricate a pack sieving machine? Do you have a contact of someone that can fabricate a cassava peeling machine?’ ‘Yes I have.’ We exchange contacts ... We look at opportunities on how we can make our products and services better ... it is just to network, exchange information, share ideas, and help each other.”

 **Oluwadara (cassava aggregator, processor, and input supplier)**

Some of the participants reported that some institutional organizations also create networking groups for agriculturists. Dare 🐌, a snail farmer, processor, and retailer, belongs to a group created by the Ministry of Micro, Small and Medium Enterprises on WhatsApp, where they post available opportunities like grants and training opportunities.


Some suppliers of information in the snail value chain leverage WhatsApp groups specifically for training members on the practice of heliciculture to further develop their knowledge, skills, and activities. This is directed towards both new entrants into snail farming who need help establishing their operations and existing snail farmers who can improve and upgrade their operations with regard to processes and products.

"I have my group which is dedicated strictly to snail farming where I have a group of farmers I mentor."

 **Kester (snail producer, consultant, and processor)**

"Naija farmers have been advertising for trainings, so once they pay for this training, we set up a WhatsApp group where we train them. We have some groups of over 20, 30, 40 people."

 **Oko (snail consultant, producer, and input supplier)**

Pelumi  a cassava processor and retailer, is an admin in several WhatsApp groups dedicated to training. He creates the groups after in-person training programs for members to keep in touch with each other and share ideas they will benefit from. One of the groups in which he posts almost daily is formed of agripreneurs who were all part of a World Bank program. The group is registered with the government and has transitioned to a cooperative. Cooperatives such as these have more power to influence value chain governance than any individual member is likely to have on their own. Social media groups are also used for collective action and advocacy, which can influence governance dynamics in the value chain. Oluwadara  a cassava aggregator, processor, and retailer/exporter, leverages the WhatsApp group functionality to inform fellow actors in her network of upcoming meetings with government agencies. In the group, members advocate for large numbers of stakeholders to prepare for and attend the meetings, to lend their voice to the discussions and influence the outcomes.

"We are organizing a roundtable meeting with government stakeholders as to how they influence our activities as local food processors ... So what we are doing right now is to ensure that we get as many people who are members ... of this community to register and be present for that roundtable meeting with these government organizations."

 **Oluwadara (cassava aggregator, processor, and input supplier)**

On quite a different note, groups are used for collective action to boost engagement with online content, which can garner greater visibility and profile for a business's interests. Some participants have established groups on WhatsApp in which they have a membership of active X (formerly Twitter) users who support each other by liking, sharing, and commenting on business posts to boost engagement. If a member makes a business post on X (formerly Twitter), they will share it in the WhatsApp group and all members are encouraged to engage with the posts in this way. This drives greater traction of the content and stimulates the platform algorithm to reward the content, enhancing its reach and impact.

"The commitment is that you must also do what you want people to do for you when they post on the group as well."

 **Victor (snail producer and consultant)**

For information on social agriculture strategies for enhancing trust in social media groups, see [section 12.8](#).

12 Social agriculture strategies leveraging platform affordances

"I have a tripod, I have a phone booth, like I have everything necessary that I need for content creation ... So anytime I am doing anything, I'm setting my camera, I'm doing my stuff, I'm editing later and putting it on Reels. People see it and they're impressed."

 **Chukwudemebi (snail aggregator and retailer)**

"I make live videos in the farm, so the live video is there; I don't delete it. You can easily see that 'okay this person is live, the person is real, the person is there.'"

 **Grace (broccoli aggregator, processor, and retailer)**

"My phone is always handy ... normally I have alarms on my phone that remind me this time for you to send this advert, do this, do that ... So when that alarm just comes on, I just have to post an update about my business ... when to make such kind of status ... my phone is always very handy [laughs], that's how I do it."

 **Favour (cassava aggregator and retailer)**

The strategies employed in agricultural businesses are influenced not only by the nature of the product and the economic and institutional circumstances of the supporting business environment, but also the value chain linkages or connections required for a business interaction or transaction to be successful. As fundamentally a tool for communication, social media plays a significant role in creating and maintaining such inter-actor linkages, which can benefit both individual actors and the value chain as a whole. Beyond social media, some social agriculture strategies leverage an individual's existing (sometimes non-agricultural) experience, expertise, and skill set. As expected, this differs across the study sample, but across the board social media has become a key part of many modern agricultural business models.

12.1 The relevance of visual content

For some case study products, notably broccoli and to some extent snail, business strategies employed among participants tend strongly towards the visual aspect of the product. It may be that they are inherently more visually appealing than plain old cassava, which is a staple, but there also appear to be some value chain dynamics at play. The broccoli and snail value chains are relatively smaller in scale, shorter, and simpler in terms of the value-addition process by comparison to cassava, which involves longer, larger, and more complex networks to bring the product to market. Consequently, upgrading across multiple value chain nodes is more attainable in the broccoli and snail value chains, and a higher proportion of actors in these value chains are engaged in marketing directly to end consumers. Marketing at this end of the value chain relies more heavily on visual hooks than wholesale market-making at the production, aggregation, and processing stages of the value chain, where aesthetics are less important. Here, visual content is more commonly shared to assess the quality of a product or verify its existence to avoid scams.

Notwithstanding this distinction, social media platforms—especially Instagram—lend themselves well to visual marketing for those to whom it is valuable. Highly visual and personalized content is more heavily rewarded with engagement on social platforms.

“When you cook, it’s not only about the meal you’re making. The aesthetics ... the way you plate your food is key ... that tends to appeal more to people ... and because they see it often, and they see it from your hand, they’re going to find it easier to trust your judgement.”

 **Adetokunbo (broccoli retailer)**

“I studied journalism so I have this knowledge of photojournalism ... There are some kind of pictures that tell the story ... [A] picture sells your produce even without you using words. So when I go to the farm, the first thing I do, I take a lot of pictures ... and you now post it online [and] people will be like ‘Oh, so they grow this in Nigeria too ... I’ve been looking for it, I want to have some, how do I go about it?’ Then from Facebook you now transfer the chat to WhatsApp. Then from WhatsApp you close the deal, payment is made, then you deliver their order to them.”

 **Grace (broccoli aggregator, processor, and retailer)**

Examples like Grace illustrate also the ways in which social agriculturalists can leverage nonagricultural expertise, in this case photojournalism, to succeed in social agriculture. It also highlights that many of the strategies employed in social agriculture are, when viewed from the perspective of agricultural value chains, outside the traditional farmer-producer agricultural model. Further, it shows the value of social media platform use for channel upgrading by raising awareness about novel products and thereby creating, enhancing or diversifying a market and its value chain, or building a customer base.

12.2 Maximizing content engagement

“Some of the times I tag people ... like ‘Just support my hustle, kindly help me retweet. It doesn’t really cost you anything, it doesn’t harm you.’”

 Victor (snail producer and consultant)

A lot of thought and attention goes into generating content that will attract and keep audience and customer attention the most, and other ways to drive engagement—including timing posts and tagging others. Participants have developed personalized strategies for gaining traction for their social media content.

“Now everybody is on social media, so you just ensure that you are churning out content that appeals best to your audience, that’s the best way you can drive sales in business.”

 Ezekiel (snail farmer and consultant)

“I now know my target audience, I know when they’re active ... I will not post anything from 7 or 8 a.m. ... [or] around 2 o’clock ... [or] from 8 o’clock in the night because these are not my engagement times.”

 Victor (snail producer and consultant)

“Sometimes I will just call when I need a post to go, or I need a very good engagement. So I will just call that friend; before you know it, they share this post with other influencers as well ... Sometimes I get up to ten people at the same time, sometimes twenty posted for me.”

 Victor (snail producer and consultant)

12.3 Leveraging informational and educational content


"I just don't sell, I also enlighten and educate people. As of last year I started more healthy diet stuff, so I show people for free how you can use these processed items."

 Grace (broccoli aggregator, processor, and retailer)

In order to find a product desirable enough to make a purchase, a customer needs to understand the value the product offers them, why it is relevant to them, and why they might want to buy and use or consume it. Many social agriculturalists offer information alongside their product—particularly retailers and input suppliers who deal with end consumers—educating their customers on why this product has value for them. This is particularly relevant for novel products, as is the case for broccoli in the Nigerian market, to create awareness and develop the market.

"If I have this broccoli, I make it into 'swallow,' then I post it and tell them 'This is broccoli swallow ... It's very good for people that are diabetic, people that have high blood sugar and people that have high blood pressure, people that want to maintain a healthy diet, people that want to reduce their weight and all that.' So when you post these and you enlighten them about the benefits of these, they get attracted too. 'I want to buy this, I want to try it too.' 'I want to eat this too, I want to stay healthy.' So it's not just all about telling them 'I sell this, come and buy.' I also give them free tips."

 Grace (broccoli aggregator, processor, and retailer)

Since broccoli is a relatively novel product in Nigeria, not everyone who encounters marketing for this product on social media will know what to do with it. In response to this, Ngozi , a broccoli aggregator and retailer, also posts recipes incorporating broccoli as an ingredient as part of her marketing strategy.

"What I do on social media, I try to find recipes. And either you repost ... or you try to recreate it. Customers will trust you better if it's something you made yourself than posting an internet recipe. So you have to go the extra mile to use it, and maybe with a voice note and everything so they see."


 Ngozi (broccoli aggregator and retailer)

For those who trade in information and consultation rather than physical products, a common strategy is to offer information for free online, with the expectation that they will gain more customers looking for more information. This strategy also proves a person's expertise, making them more trusted and desirable to potential clients.

"When I post things ... people will be prompted to ask questions. So I've been using my social media to do that. And most of the time I do a lot of freebies ... Freebies sometimes give you a lot of referrals ... Somebody will just call me: 'Hello, that thing that you posted that time ...' That time that he or she is talking about is two or three years ago. 'Can you still tell me if it works? ... Can you tell us how it's been done?'"

 **Omosho (cassava extension agent)**

12.4 Remote advisory services

Social media platforms afford the delivery of remote support and advisory services via a range of functionalities including text, audio, images, and video—and is primarily conducted via WhatsApp among those participants who engage with these activities. This is most relevant to suppliers of inputs or information and the farmer-producers with whom they liaise and enables actors offering information as a product or service to engage with many more clients than they otherwise would be able to serve via in-person visits. As an extension agent, Omosho  needs to pass information to farmers. She believes that going door-to-door would not be possible at scale, but social media has made it easy for her manage a larger client base without having to meet them in person.

"I met a lot of people through social media without even seeing them even physically ... and I've done a lot of work both national and international ... I don't have to meet them, I don't have to see them. So far I render my duty and it is flawless."

 **Omosho (cassava extension agent)**

Sometimes the advisory service is the primary activity an individual offers—as with trainers, consultants, and extensionists—and at other times the advisory service is offered as an embedded service alongside physical products such as farm inputs to support clients in getting the most out of the product. This also helps to build strong and trusting relationships with clients such that they are more likely to become repeat customers. These activities can also boost the value chain more broadly by facilitating upgrading and enhancing the success

of multiple actors throughout the chain, and by developing effective linkages throughout the value chain.

“One of our policies is providing technical support to our buyers ... once you buy the seed, we are supporting you ... If distance is going to be a barrier ... we take the phone to the farm, via WhatsApp ... ‘Okay this is my plant, this is what I’m observing.’ Then we would give a diagnosis ... ‘This is what you’re supposed to use.’ We make recommendations too ... sometimes we get people contacting us ... ‘We even want to buy the fruits ourselves.’ When we get such contacts, we say ‘Okay, we have somebody that is growing ... this particular crop, closer to you.’ We connect the farmer with the buyer, so we have created a linkage between the farmer and the market.”

 **Samuel (broccoli farmer and input supplier)**

When it comes to selling information as a product or service, the use of social media platforms is in itself a form of upgrading—in terms of enhancing the efficiency of the process (i.e., overcoming time and travel constraints to in-person visits), adding value to a product (i.e., information and remote support alongside inputs or ongoing remote advisory support to enhance the value of the product), and accessing new distribution channels by engaging with a larger, more diverse, and more widely distributed audience/customer base and creating linkages. Farmer-producers receiving such products and support via social media-enabled remote advisory services may also benefit from upgrading their individual activities with the advice they receive—for example, on new or enhanced varieties, ways to upgrade their production processes with improved cultivation techniques or technologies, or advice on diversifying their production and upgrading their distribution channels.

12.5 Transparency, honesty, and authenticity

Social platforms can afford not only visibility to a wider audience, but also transparency and proof of authenticity to enhance trust between businesses and their clients and audience. Trust is a significant issue on social platforms, with relatively high rates of scamming and fraud, as discussed in section 12.6 and “12.7”. Consequently, providing transparency and proof of authenticity can help clients avoid bad actors and help legitimate businesses gain more clients or grow their audience. Platform algorithms also reward with greater traction content that features real people presenting themselves personally—including showing their face—in their content.


Offering an authentic presence and relatable content on social platforms is also a way to build a more personal connection between an individual and their clients or audience; a viewer who witnesses online every step of the production of their product—from seed to fruit to processed or packaged product to distribution—can become emotionally invested in the product such that “the customer grows with the product.” This process of documentation also proves a businessperson’s expertise and the authenticity of their activities and product, further enhancing trust. This strategy is relevant throughout the value chain and across all the case study value chains, though we see it most heavily leveraged in the broccoli value chain among both producers and retailers, typically via visual content shared on Instagram and Facebook.

“Normally I start from the genesis, which is the seed-sowing process ... I’ll take a picture or a short video ... upload it online ... I’ll just give a caption ‘We are sowing ... and hopefully in three days’ time they will emerge.’ I’ll post it online, people are interested. ‘Oh, I love to see your progress.’ It’s just giving them the snippet, so that they’ll be interested in it.”

 **Samuel (broccoli farmer and input supplier)**

“We make videos when we go to farms for harvest ... and also when we are packaging customers’ orders ... we’re posting it up, we’re putting it up for people to see ... and then we also post our challenges as well ... We try not to create an impression of perfection... We try to be as realistic as possible ... I just make a video and say ‘You will get your product late today. [The] flight has been delayed but we’re watching.’ With that, people can see in real time that you’re actually working, right?”

 **Ryakeng (broccoli aggregator and retailer)**

Grace , a broccoli aggregator, processor, and retailer, also uses this personalized marketing strategy to her advantage, sharing via social media all the details that go into producing her signature powdered broccoli supplement, from sourcing the raw broccoli at the market, to drying, grinding, packaging, and shipping. She even shares what might seem like insignificant or mundane details of her life as a broccoli processor to foster a more personal and relatable connection with her audience.

“... not only the beautiful part. Show them all the stuff like... there was one time I went to the market ... I didn't know that my trouser was torn on my bum bum ... I was so embarrassed ... So when I came back home, I made a post about it, and people were just laughing. I just needed to ease it and make them see that 'Okay, there are things happening in the market, some days are fun, some days are sad.' ... Instead of me just giving them all the ... perfect pictures and all that, I gave them some of those things to ease them, to make them laugh as well and see—like bringing them into my personal life.”

 **Grace (broccoli aggregator, processor, and retailer)**

While this style of personal and relatable content is used strategically in the broccoli value chain, in the cassava and snail value chains strategies for proving authenticity rely more on showing one's expertise and professionalism, and on the quality of information one shares.

12.6 Establishing trust among social media contacts

“The role you play is to build that trust first, because it is no longer news that we have trust issues in Nigeria, right?”

 **Mohammed (cassava aggregator and consultant)**

“Who to trust? It's business, you can do the whole background check ... of their social media posts and all of that. At the end of the day they can have good posts and still be shitty human beings ... If at the end of the day you betrayed the trust, it simply means you were able to fit the profile though you were not who we wanted.”

 **Samson (broccoli producer and trainer)**

Establishing trust and being selective about your relationships is a key issue for business networks and, due to overarching concerns about trust in social media contacts, extra care must be taken to establish trust between online contacts in social agriculture. Though there are certain risks with doing business with social media contacts, it is also used as a tool for due diligence in assessing new contacts. Social agriculturalists will often investigate new and potential contacts online, scrutinizing their online presence, behaviors, and interactions to get a sense whether they are legitimate and trustworthy. They are often skilled in

assessing a potential contact on social media by the quality and authenticity of their social media presence and content, and often have a keen eye for suspicious behavior which may indicate untrustworthiness and people to avoid.

“Most times I look out to most farmers’ page ... I’ll go through his page ... how he does his thing, how it is at the farm. He’s making videos, he’s posting, and I was seeing the audience ... people were commenting.”

 **Dumebi (snail consumer, aggregator, and retailer)**


Beyond assessing someone’s social media presence, some strategies extend offline to verify the authenticity of an online contact. This includes in-person meetings, and even hiring private investigators to do the work.

“I will check your business, I will check your business place, you’ll do a video call for me and I will see your farm, your full address. If I have someone in that location, I’ll send him there to check your address ... Then I will verify the person, that this person is legit.”

 **Miriam (snail producer, processor, and retailer)**

“I was defrauded by hundreds of thousands ... One of the major steps I took in order not to fall victim anymore is: once I meet a person online ... I contact security personnel to go and investigate ... I rather spend money and ... wait three months and investigate before supplying goods than just jump into it ... Once they investigate then I don’t have much issue.”

 **Mohammed (cassava aggregator and consultant)**

Similarly, Ryakeng  a broccoli aggregator and retailer, uses her knowledge of Nigerian agricultural value chains to be adept at detecting suspicious accounts and behaviors on social media. She also helps her audience to learn these skills to enhance safety in their online interactions.

“I have some of my customers who would ... see an advert of a product online that’s very cheap, and then they go to buy and they get scammed and they come back and say ‘Oh ma’am, I got scammed.’ And I say ‘Okay, you see, when it’s too good to be true, it’s too good to be true.’ ... It doesn’t take me long to spot it ... Sometimes you would see... things that don’t make sense. In Nigeria, certain things grow in certain areas ... If anybody tells me he sells shrimps and he lives in Jos, I do not need a soothsayer to tell me the person is a liar ... that is how we’re able to identify these scam pages.”

 **Ryakeng (broccoli aggregator and retailer)**

Alongside due diligence in investigating others to gauge their authenticity and trustworthiness, the social agriculturalists in this study often make efforts to enhance their own appearance of trustworthiness by the way they manage their social profiles and activities (as discussed in section 12.5) such that anyone conducting due diligence checks on them will get a good impression.

“Each time I go to the farm, I make live videos in the farm—so the live video is there, I don’t delete it. You can easily see that ‘Okay this person is live, the person is real, the person is there.’”

 **Grace (broccoli aggregator and processor)**

“There’s no pretence, there’s no lie ... so after going through the page, I have people that are like ‘Oh ... I just want to say after going through your page, I’m just so impressed with what you do.’”

 **Temisan (snail producer)**

“I will simply say by just being very honest in what we do ... In the heliculture space, most of the farmers like to hoard information, so I did the opposite which is just giving out information ... One client actually even told me that the reason why she was sold on us was because she went on our page and she saw all the information I was giving out, and she knows for a fact that a person that will give out this much information definitely has more, so that was her reason for trusting us.”

 **Oko (snail producer, input supplier, and consultant)**

Another method of establishing trust involves “gaining trust by proxy,” whereby publicly visible association with other popular or trusted actors enhances an individual’s perceived trustworthiness to their audience. We particularly see this in the snail value chain.

“The credibility the business got was from people like Naija farmer [study co-author Akintobi “Lanre” Olanrewaju]. They are retweeting what we do, you know. So when people see someone as big as that in the space extending a hand to somebody else, they can verify and they can extend the level of trust they have for him to us.”

 **Oko (snail producer, input supplier, and consultant)**

Over time, Oko's 🐌 business matured and grew in scale, and became sufficiently established to be more widely considered trustworthy.

"Over time when we started doing bigger deals, you know some of the biggest greenhouse and snail farming in Nigeria ... then people could see what we are doing and trust us. It was no longer word of mouth or just assurances anymore."

🐌 **Oko (snail producer, input supplier, and consultant)**

Similarly, another common method for establishing trust in social media contacts is through personal vetting and referrals, whereby if a trusted actor mediates a connection or can vouch for the authenticity and trustworthiness of the respective parties, then trust is established. This depends considerably on the reputation of the mediating individual; many social agriculturalists are careful to build and maintain their reputation and social capital, and a poor or inaccurate judgement can negatively impact one's reputation—so care is taken to ensure the quality of referrals and the validity of vouches.

"You hear 'A friend of yours on Twitter told me to call you,' 'A friend of yours on this asked me to call you,' 'Somebody gave me your number on LinkedIn.' ... Social media has been playing a lot in terms of ... giving client referrals, and even in terms of people validating who you are."

🍠 **Tunde (cassava aggregator, producer, and consultant)**

"A good number of times ... because of the good rapport you had with someone you met online, they are able to go as far as vouching for you when making referrals like 'Oh, I interacted with that guy or I interacted with that lady and I believe to an extent she can give you what you want.'"

🍠 **Sanusi (cassava input supplier)**

Aside from trust and reputation between business contacts, there are significant issues with trust between sellers and buyers to mediate trustworthy transactions via social media.

12.7 Establishing trust for social media transactions


“They’ll send you the receipt of payment, but the money is not in your account. Sometimes you’ll even get a fake alert and the money is not reflecting on your account balance. I don’t know how they do that.”

 **Chukwudumebi (snail aggregator and retailer)**

“Once we establish that connection and introductions are done and we are able to ascertain what it is they want, we ask that they pay a consulting fee. Now, why we do that is we try to see serious types, people that are not time wasters.”


 **Oko (snail producer, input supplier, and consultant)**

Trust is particularly important when money is being exchanged, especially when a transaction is handled remotely via social media platforms, as is universal in social agriculture. Sellers need to know they can trust their customer to pay for goods ordered remotely via social media platforms, and buyers need to trust the seller to deliver the goods in exchange for their payment. The social media platforms most widely used in social agriculture transactions do not have any in-built transaction functionality or trust-based procedures to guarantee transactions. Consequently, payments are facilitated personally off-platform via the respective actor’s preferred medium, including bank transfers, digital card payments, mobile money, and cash. The prevalence of scams and fraud occurring on social media platforms fosters a general air of distrust, which poses a dilemma; the seller typically wants to receive payment *before* delivery, but the buyer wants to pay *after* delivery—each concerned about the risk of making the first move and the other not upholding their end of the agreement. Many of the study participants report instances where they sold their products to buyers but did not receive payment, and the customer then became uncontactable and untraceable. A common scam revolves around fake payment alerts, or screenshots of fake payment confirmation notifications that give the appearance of the payment being sent when in fact it hasn’t.

In response—aside from strategies described in [section 12.6](#)—many social agriculturalists have developed individualized strategies for mediating social media-based transactions safely. This is particularly pertinent to initial transactions, though once a relationship and trust are established between actors, they may be willing to offer more flexibility with transaction arrangements. Many of them ensure that they receive and genuinely verify the payment—or at least partial payment—before delivering the product. According to Kehinde , a cassava aggregator and processor, most farmers will not allow their products to be taken without receiving payment first.


“Right now, I have a way to do my things because there are a lot of scammers online so a lot of people don’t trust online vendors again. They want payment on delivery. So what I do is that I use my dispatch rider, when the dispatch rider gets to the person, the person do transfer immediately and I give them their package, so there will be no room for problems.”

 **Miriam (snail producer, processor, and retailer)**

Most participants have adopted the pay before delivery strategy. However, Ryakeng , a broccoli aggregator and retailer, said she makes exceptions for foreign buyers because she feels they have relatively more trust issues than Nigerians. Similarly, for foreign clients Dare , a snail farmer, processor, retailer, and exporter, uses various more secure tech payment solutions with in-built payment links, which also keeps her bank account details secure.

“I get that there are some that are tech-savvy, so I just send them a push link with what they have, what they ordered and then the fee to pay, so they just pay through any gateway they like ... Pay Stack, Flutter Wave, Squad, USSD, anything.”

 **Dare (snail producer, processor, and retailer)**

Samuel , a broccoli farmer and retailer, has a different strategy and takes any insistence on payment after delivery as a reason not to trust someone. Instead, he offers a range of alternative solutions, including collection in person or via a trusted local contact, or the buyer arranging delivery via a local trusted logistics provider who will mediate the transaction.

12.8 Trust-enhancing informal membership, verification, and escrow systems in social media groups

“When you get a buyer, the buyer pays to the admin; you send the product and then the admin sends you your money.”

 **Favour (cassava aggregator and retailer)**

As discussed in sections “12.5”, “12.6”, and “12.7”, trust is a common issue in social agriculture, with the prevalence of scams, fraud, and mis/disinformation. To compensate for this, some highly embedded, visible, and trustworthy

actors are seen to leverage their profile and social capital to facilitate informal verification and escrow processes, and produce their own forms of certification for members in their groups and networks. Unlike formal verification systems on platforms, such as X's (formerly Twitter) "blue tick," these systems are informally created, implemented, and maintained by the users themselves. However, they still help to foster a safer and more trusting business environment by ensuring authenticity and vetting members to enhance trust, ease transactions, and create a community of like-minded individuals for secure and high-quality interactions. This strategy was documented specifically in relation to WhatsApp and Facebook groups in the study, though it may well occur on other platforms. Further, it is seen in the cassava and snail value chains, both of which exhibit greater network effects and more prevalent social media group membership than is observed in the broccoli value chain.

Verification processes vary depending on group administrators' preferences. Methods include first verifying the potential members' involvement in the value chain and verifying their businesses or projects via video calls or physical meetings. In most cases, group administrators charge a small registration fee of 2,000 or 3,000 naira (US\$2.50–\$4.00) to people who want to join the groups. They will then be given badges or certificates, which mark them as "verified" members. Favour 🍌, an aggregator and retailer of *garri* (processed cassava flour), uses this strategy in a WhatsApp group of business contacts and customers, and Miriam 🐌, a snail farmer, processor, and consultant, uses it for a popular general-purpose snail Facebook group she runs, which has about 100,000 members.

"I will check your business, I will check your business place, you'll do a video call for me and I will see your farm, your full address. If I have someone in that location, I'll send him there to check your address. You will meet in a public space, but I just want to be sure that you are in that state where you said you are ... Then I will verify the person, that this person is legit."

🐌 **Miriam (snail producer, processor, consultant, and retailer)**

Members who don't become verified can still post in the group; however, potential buyers are aware that they are not verified and do so at his or her own risk. Some group admins will also provide an "escrow" service whereby payments are not made directly to the seller, but to the group admin who is trusted to release the funds once the goods have been delivered or transaction has been completed satisfactorily.

13 Social agriculture livelihood outcomes from social media platform usage

"If there was no Twitter, then I don't think I would have been in business."

 **Oko (snail producer, input supplier, and consultant)**

"The upside of social media basically is ... it's giving you the opportunity to meet people in a similar industry with you, is to meet people that share the same idea, that share the same vision."

 **Kehinde (cassava aggregator and processor)**

"I would say we are a social media business, we're completely social media-based. Yes, I have a shop at the airport ... but our sales come from social media. If Instagram goes down today, I am going to be in a lot of trouble."

 **Ryakeng (broccoli aggregator and retailer)**

Social media platforms afford a wide variety of opportunities for social agriculturalists and agribusinesses to upgrade their operations and improve their chances of success. Platforms have become a primary tool for agripreneurs to build and maintain networks, to find out more about opportunities in their value chains and ways to improve their practices, and to trade and distribute their products. A few participants have also accessed finance as a result of their social media activities. Consequently, the use of social media platforms is reported to have positive effects on business operations, growth, and revenue—with associated livelihood outcomes among social agriculturalists. Most of the study participants reported that the vast majority of their clients come from social media engagements, and 80% to 99% of their business depends on social media platforms at some stage of operation.

"For a long time, for about a year and a half, everything we did was on social media; we didn't even have a physical office ... All our clients, our biggest deals we got on Twitter and Instagram. So it has been very instrumental; in fact, I don't think there would be the business without social media, because I didn't know how viable heliciculture was until I responded to that tweet."

 **Oko (snail producer, input supplier, and consultant)**

"I will tell you that social media is a big blessing ... if it is well used and well guided, if you understand how to use them, they are big, big blessings."

 **Victor (snail producer and consultant)**

13.1 Expanding audience and markets

"In terms of business ... social media is the biggest market that any business can tap into."

 **Pelumi (cassava processor, producer, and consultant)**

"The advantage social media gives you is that it exposes you to a wider audience, locally and internationally ... you can imagine the multiplication, the ripple effect."

 **Sanusi (cassava input supplier, producer, and aggregator)**

"Wow, now it's better than before. Because most people, now they're into digital devices like smartphones. Some of my customers that aren't close to me, they'll just [contact] me through the phone and I'll see it and give a response."

 **Ladi (broccoli input supplier and consultant)**

Social media platforms have made it easier for the social agriculturalists in this study to interact with people from near and far, and to reach larger audiences of potential customers. This is in contrast to previously being limited to doing business primarily with the people in their immediate network or locality.

"To a very large extent I do a lot of adverts on social media ... I meet a lot of people on social media."

 **Oluwadara (cassava processor and aggregator)**

“The most significant aspect of social media to my business ... is being able to reach out to people that, on a normal basis, I would not be able to reach ... most of ... my clients ... I met online, apart from personal recommendations. Without social media, I don’t think that I would have been able to have the large number of clients that I have now.”

 **Favour (cassava aggregator and retailer)**


In terms of market-making, the scale of audience that can be reached through social media platforms far surpasses what was previously possible, and consequently they become a pathway for channel upgrading to access new, previously inaccessible markets—including international ones. This can be particularly valuable to those leveraging volume of sales to increase revenue.

“The kind of products that we are producing ... you have to play on volume to be able to maximize profit, and the way to do this is for you to reach more audience, reach more consumers ... more value chain actors, especially the distributors ... Social media can really, really help me with this ... In fact, there are a lot we have sold ... [through] Instagram, people that we have not even met before.”

 **Pelumi (cassava processor, producer, and consultant)**

“Even people from outside the country [contact] me to find out when we will harvest our cassava ... Sometimes I do not buy for them, I only supervise the work for them.”

 **Folarin (cassava aggregator and processor)**

Mohammed , a cassava aggregator, said there’s a huge difference between an aggregator who is leveraging social media and an aggregator who is not using social media in terms of networking. Through social media, they are able to reach companies and factories that buy their aggregated cassava, without having to travel to meet them in person as they previously did. Even when phone calls and email are used, searches often begin on social media to get this contact information.

13.1.1 Exercising caution about expansion

“The first platform I used was Instagram and now I limit the posting because sometimes I am overwhelmed ... it’s not like a stereotypical product where you just order for ten pieces and the ten pieces are just there.”

 **Temisan (snail producer and consultant)**

“It’s a silly thing to run ads and then when the orders keep coming, you crash and burn.”

 **Dare (snail producer, processor, and retailer)**

While social media affords powerful opportunities to grow one’s network and customer base, some participants warned of the risks of expanding too quickly, or gaining such popularity and demand via social media that can’t be met by a limited supply. While it’s true that social media engagement can afford a huge reach, businesses are not always prepared to handle sudden increases in demand at their current scale. This has led some participants to develop strategies for intentionally limiting their reach in order to ensure they can keep up with demand.

“I make sure I do not run too many customers at once, because when we have things like flight delays, flight cancellations, and all that, you now have a lot of things you need to sort out ... I do not want to expand too much when I’m not sure of the logistics. So I am ... wary of taking up too [many] jobs and not being able to deliver, because quality is very, very important to me.”

 **Ryakeng (broccoli aggregator and retailer)**

“If I want to run any ad now, I do it short term ... maybe three to five days. If it reaches say five, seven thousand people ... maybe one or two percent... will contact me and out of that one or two percent, maybe another ten percent of that number would be serious ... I know that I can fulfil their demands.”

 **Dare (snail producer, processor, and retailer)**

This appears to be more of a concern in the broccoli and snail value chains than the cassava value chain, most likely due to greater incidence of running paid social media advertisements among actors in these value chains, and the relatively limited localities and scale of production limiting supply. By contrast, cassava is widely produced throughout Nigeria at collectively vast scales. Aggregators in the cassava value chain have large and well-distributed networks of potential (relatively interchangeable) producers to draw upon to meet their orders and are adept at fulfilling their supply from whoever can meet it.

Further, some participants report that, while social media was valuable to them in the beginning to establish their presence, build their network, and recruit new customers, their relationships are now sufficiently well-established outside of social media to support their business at their desired scale of operation. As a result, they no longer feel the need to use social media so intensively, unless they need to generate new business. Some also report the burden of responsibility that comes with having large and active social media networks and audiences that require constant attention and maintenance at risk of losing one's reputation. These factors have driven some social agriculturalists to step back to some extent from their previously intensive social media activities and to operate at a more sustainable scale.

13.2 Improving sales and income

Participants in this study all report that their use of social media platforms has improved their income, sometimes very significantly, with explicit reports ranging from 45% to 90% increase. Including both direct sources (i.e., sales/transactions via platforms) and indirect sources (i.e., referrals/connections received via platforms that lead to sales/transactions), some participants now get over 90% of their income from social media-based interactions and transactions. Upgraded networking, market-making, and logistics solutions afforded by social platform use can also help to reduce wastage and spoilage of perishable products, reducing losses and improving profit margins. Social platforms, notably LinkedIn and X (formerly Twitter), have also opened up opportunities to work with foreign clients for the export market, which often garners higher prices and larger deals than in the domestic market.

"One of my biggest clients now ... exports it to the United Arab Emirates. We actually connected through social media, they saw our products online, on Twitter ... They reached out to us... from there we are in business today, and right now he is thinking of reinvesting into the business ... I also have another client who is in Canada; we have never met face to face ... she saw our product online, she asked us to send a sample to her mom in Lagos ... and the mom was like 'This is best garri I have ever tasted.' And before you know it the daughter reached out; she has an African store there in Canada."

 Pelumi (cassava processor, producer, and consultant)

Favour 🍌, a *garri* (cassava) aggregator and retailer, reports that before she started using social media for her business, she was limited to marketing in her immediate locale and didn't have many clients. This resulted in low-income earnings and she was dependent on her spouse for most of her basic needs. But her use of social media has now made it easy for her to interact with a lot of clients and expand her customer base, thereby increasing her income and financial independence.

"I am making money from what I am doing and social media has been helping. That means I will not have to be calling oga [husband] to give me."

🍌 **Favour (cassava aggregator and retailer)**

Samuel 🥦, a broccoli farmer, noted that the WhatsApp video functionalities enable him to convince clients who may have questions about his products, leading to more sales. He also shared a story about a large sale worth 7 million naira (US\$9,000) that he made via Instagram, despite his boss being initially skeptical about introducing social media platforms into their business model. Samuel's perseverance proved its value to their business, and they continue to use it.

"It was crazy, it was intriguing ... it was encouraging for us at the office, we were so impressed and my boss was really happy with us ... with me. We didn't spend any money for transportation, we didn't spend money for accommodation and hotels or feeding, and we got that amount from social media ... I think that's the major breakthrough for ... me and the business."

🥦 **Samuel (broccoli producer and input supplier)**

Aside from improving incomes through greater reach, scale, and transactional efficiencies, the use of social media platforms can also reduce operational costs through other enhanced efficiencies, which in turn can improve profit margins.


13.3 Reducing operational costs

"If I go to an average radio station to create that awareness, it will cost me more, you understand. So in that I can say that social media has made my business simpler"

🍌 **Sanusi (cassava input supplier, producer, and aggregator)**

“Initially, without social media, we have to leave our location, travel hours, five hours, six hours, ten hours ... from one state to another state, just to create awareness. And you know moving from one location to another is costing money ... But with social media, everything is just smooth.”


 **Samuel (broccoli producer and input supplier)**

The use of social media platforms has reduced the running costs of many participants' business operations, notably in relation to advertising and marketing, reduced travel costs, and improved sourcing and management of logistics. Pelumi , a cassava processor, reports that social media advertising helps him reduce his advertising budget, since it is considerably cheaper than traditional advertising as well as more targeted.

“Through social media I have been able to bring down some operational costs. For example, I can advertise my product on social media ... while targeting the people that I really want to reach. So that way, the money I am supposed to spend on advertisements and promotions has been put under control and more effective use.”

 **Pelumi (cassava processor, producer, and consultant)**

He added that social media also makes logistics easier for him because he can more easily get delivery agents in different locations closer to where a deal is happening, which saves him the cost of travelling himself.

Samuel , a broccoli farmer and input supplier, reports that he no longer has to spend on transportation and accommodation to reach out to people like he did before adopting social media. With these tools distance is less of a barrier to reaching a wide range of clients for business transactions.

“I can be in my house here in Jos, I can reach somebody in Zamfara, I can reach another person far in Lagos, I can reach somebody in Port Harcourt ... So distance is not really a barrier.”

 **Samuel (broccoli producer and input supplier)**

He added that social media has reduced his business's operational costs by over 80% by saving on travel costs. He said visiting 20 locations would mean spending about 50,000 naira (US\$65) on transportation excluding accommodation. With social media, he only spends 3,000 naira (US\$4) each month to reach a wider audience and when he needs to boost his posts, he spends another 1,500 naira (US\$2) monthly.

Whether or not it involves extensive travel, conducting business in person doesn't only cost money but also an individual's energy. The use of social media platforms therefore has nonfinancial benefits with reference to business interactions.

13.4 Easing interactions

"Instead of doing the traditional marketing of going from one house to the other talking to people, social media can reach anybody, anywhere, anytime."

 **Oluwadara (cassava aggregator, processor, and input supplier)**

Some participants appreciate the ease of marketing online when they would otherwise struggle with in-person interactions, which can be stressful and tiring for some people.

"I'm not good at one-on-one marketing so I wasn't into business until I started social media stuff—that was when I became fully involved. But I can say from when I started in 2020 to date, I've seen a great transformation."

 **Grace (broccoli aggregator, processor, and retailer)**

"I'm a very introverted person, I find it very difficult to relate with people physically ... My job as a salesperson is to increase awareness and make sales ... it was tiring and stressful. But via social media ... I can talk, I can make my sales pitch, I can tell you more about my variety, tell you the merits, tell you the benefit to your farm and other things. So, for me social media has been the safest space to create awareness and push sales."

 **Samuel (broccoli input supplier and producer)**

13.5 Inspiration and motivation

Some participants mentioned that seeing other thriving agribusinesses on social media platforms motivates them to improve their skills to do better in their businesses. They believe that if they were only operating offline, they would not be where they are today.

"It also helps me to know that ... [people] have gone ahead of you; sharpen your skills ... you also see some of the strides people are making ... It also just tells you 'There's more that can be done.'"

 **Tunde (cassava aggregator, producer, and consultant)**

14 Issues with social media

Most social agriculturalists across the three case study value chains reported some notable issues around the use of social media for their businesses, including trust, scams, fraud, cyberbullying and harassment, the cost of data, and time consumption. However, the general consensus is that while social media has certain disadvantages, the advantages are greater and it plays a vital role in their business operations.

14.1 Time consumption and work-life balance

"I like to jokingly tell people that my phone is my office. So I am responsive on social media almost 24/7, especially when it has to do with business"

 Pelumi (cassava processor, producer, and consultant)

"I spend a lot, like I literally spend all my life on social media. "

 Grace (broccoli aggregator, processor, and retailer)



“When I was starting, I was doing it all alone, but now we have a team. So I don’t manage my social media presence anymore ... I have staff, and I also have digital marketers that do some of this work for me.”

 **Victor (snail producer and consultant)**

For most social agriculturalists, social media has become a deeply embedded part of their life and livelihood. Participants across the three value chains described how much time they spend on social media, reporting between 3 and 18 hours per day—with jokes of being online 24/7. Though they generally feel they are able to balance their personal lives with time spent on social media for business, some express concern with the number of hours per day they spend online.

“The downside is that it has taken a lot of family matters from us. Taking away a lot which we are not even recognizing now because the future will still tell whether we like it or not.”

 **Omosho (cassava extension agent)**

Ryakeng  said she spends so much time on social media that at some point she felt it was becoming an addiction, but consoled herself with the fact that social media is her office and didn’t feel this constituted an addiction. Grace  too spends a lot of time online, but she also has offline business tasks that take her attention away from social media at times:

“The only time I spend less time on social media is if I’m in the market or on the farm—you know, I’m kind of busy offline—but as soon as I’m not in the market or on the farm, I’m on social media. I can spend up to eight hours on social media any day, or even more. You have to make posts, you have to check the pending orders and all that.”

 **Grace (broccoli aggregator, processor, and retailer)**

A major reason for such intensive use is the diversity of uses for social media platforms, from doing research and sourcing information to creating content, engaging with followers or the wider community, offering support or advice, managing customers and orders, and more. Some participants note that a successful social media presence requires continuous maintenance and warn of the burden of responsibility that comes with having large and active social media networks and audiences that require constant attention and maintenance at risk of losing one’s reputation or harming one’s business.

“The downside is you have to keep doing it, I mean there is no off season. So times when I am out of town ... times that I go on holiday ... I hand over my social media page to a trusted partner to just keep doing it.”

 **Oluwadara (cassava aggregator, processor, and input supplier)**

“Even when I have a staff, most of the inquiries I would still have to be the one to attend to. I can then pass it on but the first call will always be me.”

 **Temisan (snail producer and consultant)**

14.2 Data costs

“Ah! I have spent too much on it ... it has cost me a lot.”

 **Omosho (cassava extension agent)**

The cost of data to access social media is an issue commonly cited by the social agriculturalists in this study. Some social media platforms, especially Instagram and X (formerly Twitter), are reported to consume a lot of data, which discourages some from using or spending too much time on them. One participant added that it affects their operational costs, though it can be considered a business cost and not a personal cost.

“The cost of data ... is really going on the high side these days ... the data that is supposed to last you for a month ... [In] under ten days you will see that it has ... expired ... So I think we spend too much to be on social media ... it has an effect on the operational cost of the business in a way.”

 **Kehinde (cassava aggregator and processor)**

“If my data ends now, I just have to subscribe, it is a must, even if I don't eat ... Well, the advantage seems to supersede the disadvantage if I look at it very well from another angle. But it has really cost me a lot.”

 **Omosho (cassava extension agent)**

14.3 Fraud

“The rate of fraudulent acts now online, ha! ... It’s really giving the online business a bad name.”

 Favour (cassava aggregator and retailer)

“People will always copy bestsellers and there’s almost nothing you can do about it ... Somebody shouldn’t be able to take my videos and pictures and claim it’s their own ... The most you can do is report the handle to Instagram or Twitter, but they don’t necessarily take them down.”

 Adetokunbo (broccoli retailer)

Acts of fraud are relatively prevalent on social media platforms and in social agriculture, with fraudulent payments, fraudulent profiles, legitimate business, and personal profiles being replicated by fraudsters to divert revenue, and accounts being hacked and used by fraudsters. This creates a distrustful environment where even legitimate and trustworthy actors may struggle to gain trust among their audience or customers. Victims of fraud also report that platforms are not always responsive to their requests to remove or block fraudulent accounts. Even when this does occur, bad actors often simply establish another fraudulent account and continue with their criminal activities.


The issue with fraudulent payments is discussed in more detail in [section 12.7](#), but there is more to the picture than transactions alone. One strategy used by fraudsters is to establish a fraudulent business profile and run sponsored advertising campaigns to draw people’s attention to their operation and away from legitimate businesses. Similarly, there are cases of fraudsters stealing content and replicating legitimate pages to divert an existing audience into a fraudulent pathway. Customers ordering through these fraudulent pages may receive lesser-quality goods or nothing at all. This also leads to issues with the owners of the original pages or content, whose reputation and business prospects will be negatively affected.

“People take your pictures ... videos and pass it off as their own ... so assuming someone wants to order from us, then they get to another page and see exactly the same thing, right? ... They think they’re ordering from us, then they pay that person ... and what that person sends doesn’t meet what they’ve seen, or that person doesn’t even send them an order at all. Then they come back, they tag us ... We ask them ‘Kindly provide your receipt of payment’ and when they send the receipt of payment it’s totally different from what’s on our page. You paid the wrong person.”

 Adetokunbo (broccoli retailer)

“Someone eventually called and said that they paid me but I never supplied ... He said we spoke on the phone ... they said ‘not this number, [the] other number ... I’ve been chatting with you on WhatsApp...’ When I now get to see the page, it was a scam page.”

 **Bello (snail producer and consultant)**

Bello  said he reported a fraudulent page with the help of his friends and it was blocked from the platform, but the same thing happened again and has reoccurred six times in the past three years. When legitimate pages are replicated, the only option is to report the fake pages to the platform moderators, who are not always responsive in blocking them.

The prevalence of fraud makes it hard to identify legitimate businesses and reduces trust towards social media-based businesses in general. In response to this, participants suggest platform-enabled account verification systems designed to eliminate opportunities for fraudulent profiles to proliferate. Individual strategies some social agriculturalists apply to overcome such risks and challenges are discussed in more detail in [section 12.6](#).



14.4 Hacking

“My Twitter handle just got hacked, as well as my Instagram ... as I reopen it, it’s being hacked again.”

 **Omotoso (cassava extension agent)**


“I couldn’t log in. I was told my password has been changed. I said, ‘How? Who changed my password?’”

 **Bello (snail producer, consultant, and retailer)**

Some participants report issues with having their social media accounts hacked. Omotosho  had two of her accounts, X (formerly Twitter) and Instagram, hacked. She tried to use a different name to reopen them, but it was too difficult and she never succeeded. She simply stopped using these platforms, instead relying on Facebook, Telegram, and WhatsApp for her business. Bello  also experienced hacking on Facebook. After several days and various security hurdles, he was able to retrieve access to his accounts, but this time he enabled two-factor authentication as advised by his sister. He described how this period of inaccessibility to his account affected his business because he could no longer interact with his customers.


"I couldn't do anything. My fear was 'Will I be able to retrieve my account?' ... If I lose the account, these people can do anything. I have customers there ... I don't even know how to get their contact anymore. I was like if I lose this thing now it will be terrible."

 **Bello (snail producer, processor, retailer, and consultant)**

Grace  shared her experience of a hacking attempt via a phishing email imitating Meta to try and get her password. Because of her good knowledge of cybersecurity she was able to detect that she was dealing with a phishing email, so she did not release her password.

"I got a mail ... pretending that they're from Facebook, that I posted something that is against their community standards ... I was trying to understand... What exactly is the post? So I said, okay let me just proceed ... only to get to a point where they were asking me to include my password. That was where I now said, no, this can't be from Facebook, I can't input my password. I had to check the sender and I saw it coming from a personal email ... I just abandoned it. Over two weeks now, they've not taken down the page, which means it wasn't from Meta."

 **Grace (broccoli aggregator, processor, and retailer)**

Grace  elaborates on the risks associated with hacking and the importance of being conscious about online security. She has proactively engaged in learning about cybersecurity and online best practices, equipping herself with the necessary knowledge and skills to navigate the online world securely. This acquired knowledge has instilled a sense of confidence and safety in her online interactions.

"You have to be security conscious. Don't click on links that are not verified. Your page can easily be hacked and then used to scam somebody else. Then they will now be accusing you of being the scammer, so you have to be security conscious."

 **Grace (broccoli aggregator, processor, and retailer)**

14.5 Cyberbullying and online harassment

"There are times ... you'll post online and someone will ... tell you that you're a liar ... you're a thief, and they'll start calling you many bad names. And you'll be surprised. 'What have I done to this person? I don't know you from anywhere, you just come and you attack me.'"

 **Samuel (broccoli producer and input supplier)**

"I sent him a [direct message] ... 'Are you referring to me? You want me to bring out all the information?' And I think he cautioned himself ... and... apologized, if I remember."

 **Tunde (cassava aggregator, producer, and consultant)**

Cyberbullying and online harassment can have devastating effects on those who experience it and can drive some users away from using social platforms. Sometimes this comes indiscriminately from unknown persons, and sometimes from people with whom an individual has made business transactions that did not go as expected. Either way, negative comments can taint a person or business's reputation and negatively impact their business prospects.

"One of my investors went on social media to tag one of my ... foreign donors that I am owing them and that I have scammed them. ... So I had to reach out to the person and told him ... 'There is no atom or element of scam in what has happened.' He [said] 'It was just because [you] have not been responding.' So I said 'We spoke last week and the situation is still the same.' After we finished speaking, he went back and deleted the tweet."

 **Pelumi (cassava processor, producer, and consultant)**

Several participants describe similar situations illustrating that sometimes online harassment is perpetrated by people to whom the business owes money who may be genuinely concerned they have been scammed.

"Unfortunately, you know most of the time these banks have some issues, I think it took us about seven hours to confirm his payment. Before then, he came online, he was ranting that he was going to destroy our business, that we are a scam and many others ... He was threatening, insulting me ... Of course, I could not respond back the way I wanted to, because it's in business ... [but] I was very angry."

 **Samuel (broccoli producer and input supplier)**

Oko 🐌 shared a story about a LinkedIn user who harassed him for using their video in his training materials, but the owner was not pleased and was abusive rather than sending him a private message to take it down.

“I thought it was very viable information so I ... used the video to explain something on my page. He caught a hold of it and he was very, very abusive ... condemning me and condemning the business ... tried to toy with our reputation and make us look like we didn’t know what we were doing. I just took down ... the tweet and blocked him ... That left a very bad taste in my mouth.”

🐌 Oko (snail consultant and producer)

Several participants shared their experiences of seemingly indiscriminate bullying and harassment on social media platforms by unknown agents. They are able to block these bad actors and delete the comments, since leaving them on the comment section could impact their reputation.

“Somebody called me an ‘internet farmer.’ He said I don’t even know what I’m doing, that I am just posting on the internet just to [show] I’m doing something valid with my life ... Of course, I ignore them most of the time ... I’ll mute [them], I’ll delete that comment from my post. That’s the solution, that’s how I handle such people.”

🥦 Samuel (broccoli producer and input supplier)

15 Risks associated with social media dependency

"If social media goes, it is going to do a lot of harm because my physical store doesn't make one-sixteenth of what we get online. So if you take away the internet, you're basically taking the whole business."

 **Ryakeng (broccoli aggregator and retailer)**

"More than 99% of my customers, I deal with them through social media, that's the truth."

 **Oluwadara (cassava processor, aggregator, and input supplier)**

"There will be a problem. There is no me, there is no business for me without social media. I cannot imagine it, oh, no, no, no..."

 **Miriam (snail producer, processor, and retailer)**

Most participants in this study report the major significance of social media to their livelihoods, with figures for the percentage of income and business operations that are dependent on social media ranging from about 80% to 99%. As such, they reported that the loss of access to social media platforms would have significant negative impacts on their lives and businesses. However, a few noted that their offline operations are sufficiently established—or there are elements of their business that are less dependent on social media platforms—such that they could continue to maintain their businesses at some level without the use of social media platforms. However, loss of access would result in the loss of marketing and networking opportunities social platforms afford them, with associated reductions in visibility and sales. Likewise, the loss of these valuable sources of information could hinder their opportunities for upgrading.

"We would have to develop a different strategy to getting customers, but keeping the old customers is not an issue because we already have that on lock. It just means that we probably have to go back to the traditional marketing methods ... Fortunately we are in a place where we can afford that now, but ... would I want that? No, I would rather prefer the social media, because that cuts across board."

 **Samson (broccoli producer and trainer)**

"It will become too stressful because we [would] have to restructure completely ... you have to start looking for how to reach the open market. It's the convenience of doing business ... I don't think I would even still want to ... deal with vegetables if we didn't have the internet because that is what makes it easy for you."

 **Ryakeng (broccoli aggregator and retailer)**

Some participants recalled a six-month government-enforced Twitter blackout in Nigeria in 2021 and how it negatively affected their businesses. This is not only relevant to social agriculture but to the wider economy, much of which has become intertwined with the use of social media platforms.

"At the time Twitter was banned ... [the] bulk of our funds came from Twitter, so it was like sweeping the rug off our feet ... We had to adjust to these things ... [I] directed most of the traffic to WhatsApp, and we had groups ... The downside is we couldn't reach all the clients, and it really hit the business hard. But overtime we just adjusted, you know how these things are."

 **Okoko (snail producer and consultant)**

"People lost businesses ... You know people that were using Twitter as a means ... of connecting to their customers, to their clients ... people lost money, people lost businesses a lot ... How can you even relate with your client on a regular basis? ... It will really have a drastic effect on businesses and it will reduce our GDP in Nigeria, it will reduce disposable income, it will reduce economic lives and social lives of Nigerians generally."

 **Kehinde (cassava aggregator, processor, and consultant)**

"That's like crippling my business. I remember a time that ... our government banned Twitter. It really crippled a whole lot of businesses, a whole lot ... I don't have a physical store, it will really just cripple everything."

 **Grace (broccoli aggregator, processor, and retailer)**

Grace 🌱 added that many people who wished to still use Twitter during the government blockage accessed it illegally with a VPN, though this is not possible in all types of platform blackouts, such as the 2021 temporary global outage of all Meta products (Facebook, Instagram, and WhatsApp). It only lasted for six to seven hours, but participants still recall the impact of this event on their businesses.

“Everything literally went blank, like we couldn’t do anything. Okay we could still process our products, but who will you sell to? How does it reach them? So it affected virtually everything. If you are processing and there is nobody to sell to, there is no point processing.”

🌱 **Oluwadara (cassava aggregator, processor, and input supplier)**

Most participants are deeply concerned about the prospect of similar social media blackout events in the future, whether orchestrated like the Nigerian Twitter ban or accidental like the global Meta outage.

“It will affect the business in a very bad way, very bad way, because we’ve built a very huge community on social media ... they’ve seen the success and have referred other people ... people grow ... they post their pictures, they post their feedback, ask questions ... ask for tips, ask for recommendations. If social media goes down today, it’s going to affect the business in a very bad way.”

🌱 **Samuel (broccoli producer and input supplier)**

“Ah! It will limit my prospects significantly ... I won’t even be able to have access to people to interact with on a business level. Number two: it won’t be efficient to easily identify my market target because that is one of the advantages of social media ... It helps you to identify your market target so you know where you are channelling your energy.”

🌱 **Sanusi (cassava input supplier, producer, and aggregator)**

Only two study participants expressed less concern about the prospect of social media outages, citing that their businesses can be conducted offline, though one still notes the challenges it would pose for his business.

"I am not just a social media person, I am a practical person. I work with real-life farmers ... people that are off social media. But it could be really frustrating because that means it will make me lose the audience that I could potentially impart knowledge unto. A lot of people have built their lives around it, so if it is abolished, it will affect my reach to those people."

 Timothy (cassava consultant)

"I have not been doing that social media, it's offline that I have been doing my marketing, so, now if you say no more social media ... it won't affect my market."

 Gyang (broccoli producer)

Aside from blackouts and outages, individuals may lose access to their social media accounts due to hacking or other security related issues, as discussed in section 14.4.

15.1 Addressing the risks of social media dependency

"... as much as I am engaging social media as a platform to do a lot of things, I will also over time look at ways whereby the entire process does not totally rely on social media."

 Oluwadara (cassava aggregator, processor, and input supplier)

While many of the participants in this study are rightly concerned about the prospect or reality of losing access to social media platforms, a few believe that their business could survive without social media and describe the ways in which their business does not have to be entirely dependent on platforms. Appreciating the risks of over-dependence on social media platforms also informs the business model and strategies of some participants to ensure their sustainability in the face of uncertainties about platform access. These include building and maintaining strong offline relationships—even with those with whom they initially connect via social platforms—ensuring one's reputation beyond social media and storing contact information off-platform.

"When we started, it was almost 100% on social media, but one of the things we are trying is when we get a connection on social media, we quickly take you to become an offline customer. Because who knows, tomorrow something could happen and they say they have banned social media ... We get you online, we push you offline."

 **Samson (broccoli producer and trainer)**

"... ninety percent of our client base comes from social media, but because of the extent at which we have established ourselves, I don't think we are going to collapse ... if anything goes wrong... because we have also got lots of jobs through referrals."

 **Kester (snail producer, consultant, and input supplier)**

Some participants have developed strategies to prevent over-dependence on any single social platform, which involves building connections across multiple platforms and ensuring contact information is stored elsewhere.

"Most of the time ... after creating a relationship on Instagram or Facebook, I try to drag them out to WhatsApp to finalize or conclude our conversations or continue there, so I can actually have their contacts."

 **Dare (snail producer, processor, and retailer)**

Even though WhatsApp is a social platform, the advantage of this approach is that every WhatsApp profile is connected to a phone number. Users could revert to traditional phone conversations with the contact lists stored in their phones, even in the event of a WhatsApp outage.

"I already have a lot of customers that have my number; they can always ... call me."

 **Chukwudumebi (snail aggregator and retailer)**


Collecting and storing client contact information in offline databases is a strategy employed by some participants to guard against potential loss of platform access, as is maintaining an offline business presence with physical business and retail locations.

"We've been able to take the mass market outside of social media to traditional market means. We have a physical store where people buy ... We've been able to gather some of our customers' emails ... we also have phone numbers of some of our returning customers that we can easily call. We have a database for that. So, if social media goes off today, which we don't pray for ... but we will still survive."

 **Victor (snail producer and consultant)**

"I create invoices so I just know that one way or the other [I have] their contacts, their email addresses ... I didn't used to do that but I just know that ... now it's important you collect the extra details apart from social media handles of your customers."

 **Ngozi (broccoli aggregator and retailer)**


Oluwadara  a cassava processor, input supplier, and exporter, reflected that the level of reliance on social media platforms should be about 50%, with 50% of the business still able to be conducted offline. This would enable them to continue their business activities without having to start over again.

"That way you know if social media crashes or you don't have network for two weeks or something happens, you still have a good part of your business running effortlessly."

 **Oluwadara (cassava aggregator, processor, and input supplier)**

"Okay, I think over-reliance on social media is going to be a problem. For us, we create a synergy between social media and offline media ... the internet might go down for a long time."

 **Samuel (broccoli producer and input supplier)**

By contrast, Tunde  has an alternative perspective that the risks of *not* adopting social media are more significant:

"I think it should even be the other way round ... Are there any risks for farmers who are not on social media? I'll say yes. Because they're likely to go extinct."

 **Tunde (cassava aggregator, producer, and consultant)**

In summary, many social agriculturalists are aware of the risks of being overdependent on social media platforms in general—or on a single platform—for their business and report negative impacts of past platform blackouts and outages. Some of them have developed strategies to compensate for these risks, including storing contact databases offline and maintaining offline business relationships and strategies such that their business could continue even in the face of social media blackouts, or loss of access to social media accounts for other reasons.

16 Conclusion

This study has used qualitative methods, data, and analysis to examine three case studies of agricultural value chains—cassava, snail, and broccoli—in which social agriculture (the use of social media platforms for *information exchange, support networks, and markets* for agricultural livelihoods) is being practiced in Nigeria.

The researchers applied value chain analysis based on several value chain characteristics—*governance; government intervention; network effect; primary market(s); specific qualities of products; access to logistics, finance, and information; and market competition*—which to a large extent configure how value chains operate. The research provides analysis on the ways in which these characteristics constrain upgrading of *processes, products, value chain functions, and distribution channels* among the individual actors and value chains in our case studies. The study documents social agriculture strategies and practices—pursued via the use of social media platforms and their affordances—to overcome or otherwise reduce constraints associated with the configuration and characteristics of the case study value chains. This provides insight into the ways in which the use of social media platforms is reconfiguring agricultural value chains in which they are being used, and into the potential influence the use of social media platforms could have on other value chains. The study also documents reported livelihood outcomes from the practice of social agriculture—and some of the risks and downsides associated with it—among the study participants in their respective value chains. The study findings may be relevant to other value chains in which social agriculture is practiced, or which exhibit similar characteristics and configurations to those included in this study.

With reference to governance, due to the scale, length, complexity, and diversity of the cassava value chain, different channels in the value chain exhibit different governance dynamics. These include *free-market* and *modular* structures in informal channels, and *relational* and *captive* structures in formalized industrial channels. In the latter channels, the necessity of industrial processing facilities introduces governance dynamics by placing power in the hands of the owners of these facilities. In turn, the maturity of the cassava value chain embeds governance dynamics more deeply, with established actors holding greater power to influence governance. This context poses constraints to upgrading among individual value chain actors and drives a greater network effect among the various actors required to move a product vertically through the value chain.

Social media platforms are a primary tool for creating and maintaining vertical value chain linkages. Consequently, in this study a greater proportion of social agriculturalists in the cassava value chain use social media platforms for this purpose than in the broccoli or snail value chains. Further, in the cassava value chain social media platforms are used for the formation and maintenance of cooperatives and associations, for advocacy and the inclusion of marginalized voices, for interfacing between value chain actors and governance institutions, and for other forms of collective action—all of which have potential to influence governance dynamics. By comparison, the broccoli and snail value chains are relatively small, short, simple, immature, and informal, with no significant governance-based power dynamics and minimal institutional support structures. Consequently, these value chains currently operate on a *free-market* basis. This context reduces the network effect in these value chains and reduces constraints to actor upgrading—which is relatively common in these value chains. As a result, the broccoli value chain involves less prominent use of social media platforms to facilitate vertical linkages throughout the value chain, and more prominent use of platforms to link with the end-consumer market. The same is true in the snail value chain, which also sees significant horizontal networking directed towards the transmission of information and co-creation of knowledge to address knowledge gaps and facilitate individual and collective upgrading.

The intersection between primary production location and consumption markets, product perishability, processing, and access to logistics poses significant constraints to channel and functional upgrading in the case study value chains, particularly for broccoli, which is the most perishable among them and typically has the farthest to travel from farm to table. Nigeria is a vast country with transport infrastructure deficits in many areas, and distance between the primary production and consumption locations of specific products is key to perishability, logistics, and distribution channels. Cassava is widely produced and consumed throughout Nigeria and is less perishable, though transport infrastructure and logistics remain a significant constraint in this value chain. Snail is typically produced close to its point of consumption, primarily throughout the South and Southwest of the country, so these factors pose less of a constraint in this value chain. Broccoli, however, is primarily produced in Jos in the North-Central Region—the only place in the country with the right conditions to reliably grow it outdoors—but is primarily consumed by affluent

health- and food-conscious end consumers in urban centers such as Lagos in southwest Nigeria. This poses significant constraints to broccoli distribution channels. In some cases, these are overcome through the use of high-quality logistics such as air freight, though air transport routes throughout the country are limited and therefore constraints to this distribution channel remain. Social media-enabled strategies to address these constraints include sourcing a ready market in advance of harvest; sourcing and coordinating logistics; and accessing or creating markets for upgraded, less perishable products.

Access to finance is a notable constraint to all forms of value chain upgrading, which typically require up-front investment or otherwise pose financial risks that some actors in agricultural value chains—especially those with limited resources—may not be willing or able to take. Access to capital can also influence power dynamics, such that larger, more heavily financed actors have more power to govern the structure of the value chain. Capital and financing for the social agriculture businesses in this study come from a wide range of sources, including personal finance, friends and family, business profits, investment, government and NGO grants and funding, crowdfunding, and institutional or bank financing. However, the general consensus is that conventional banking and financial institutions do not look favorably on agricultural businesses or small-scale agripreneurs, thus this source of funding is challenging to access and very infrequently successful.

Among the businesses in this study, sources of finance are more diverse in the cassava value chain—due to its greater scale, length, complexity, diversity, and maturity. This value chain hosts a wider array of agribusinesses, its familiarity and maturity making it a more appealing potential investment and institutional support structures seeding grant funding into the value chain. Nonetheless, access to finance remains a widely reported constraint in the cassava value chain. By contrast, the majority of broccoli and snail businesses in this study are self-funded. While this is more attainable due to comparatively low start-up and operational costs and the relatively small, short, simple, immature, and informal characteristics of these value chains, self-financing is also often necessary due to the lack of institutional financing options and support structures in the broccoli and snail value chains. Poor access to finance is therefore likely to remain a constraint to scaling these value chains. Social media-based strategies for accessing finance include networking with potential investors (both domestically and internationally); finding out about government and NGO grant-funding opportunities via social media; and crowdfunding (including among friend and family networks). The latter source of financing is, however, often informal and entirely dependent on trust, which is at risk of abuse.

Knowledge and access to information about processes, products, value chain functions, and distribution channels is necessary for upgrading among value chain actors, such that inadequate access to information becomes a constraint to upgrading. The cassava value chain is large and mature with a long history in Nigeria and therefore has a wealth of existing knowledge and information. It also receives considerable attention from national and international

government, NGOs, academia, and private research institutions creating and disseminating new knowledge and information. As novel, immature, under-developed, and under-supported value chains, broccoli and snail lack these collective and individual sources of information and knowledge, which can constrain individual and collective upgrading in the value chain. Under these circumstances, actors often turn to peers to access information, or co-create knowledge through practice and innovation. Social media platforms play a major role in the transfer of agricultural knowledge and information in this way. They afford greater visibility and connectivity throughout the value chain; are used as a tool for the transmission of codified and practical knowledge and market-related information via vertical value chain linkages; and enable the transfer and co-creation of knowledge via horizontal value chain linkages—thereby aiding individual and collective value chain upgrading.

Relationships between competitors in value chains can be adversarial or supportive. Adversarial relationships drive innovation and upgrading among individual actors to remain competitive, but *reduce* the overall effectiveness and competitiveness of the value chain as a whole. By contrast, supportive relationships also drive innovation and upgrading via the transfer and co-creation of knowledge, resources, and benefits, thereby *improving* the overall effectiveness and competitiveness of the value chain. This is most prominent in the snail value chain, though it is relevant to broccoli and cassava as well. Social agriculture is defined by the presence of *information exchange* and *support networks* (two of its three core principles) and is therefore a major force for enhancing supportive, as opposed to adversarial, relationships. With reference to the third principle of social agriculture (*agricultural markets*), social media is a relatively novel channel for marketing agricultural products. Though at present the social agriculture market represents only a small segment of agricultural economies, the potential reach is massive and currently avails a comparatively low-competition environment with associated rewards for early adopters who use these marketing channels to their advantage. With the rising popularity of social media-based commerce among both producers and consumers of agricultural products, the competitive environment of social agriculture value chains will continue to evolve.

The social agriculturalists in this study use a variety of different social media platforms and affordances for different purposes relating to their value chain activities, typically moving fluidly between them for different stages of their activities, interactions, and transactions. Different platform designs and prevailing cultures of usage with reference to specific features and affordances are of key relevance to why certain platforms and affordances are used for specific needs, goals, and purposes among different value chain actors. Likewise, different platforms lend themselves to different audiences and activities throughout the value chain. For example, X (formerly Twitter) and LinkedIn are considered more “professional” and business-minded platforms for business development and networking—including with international export markets and investors. Therefore, these platforms are most heavily leveraged by aggregators and processors, particularly in the cassava value chain. Instagram

is more valuable for visual marketing to end consumers of inputs to demonstrate their value, and to end consumers of finished products to demonstrate their appeal—for which aesthetics are more important than at the wholesale stages of the value chain. Instagram is more heavily leveraged in the broccoli and snail value chains, since—due to the characteristics and configuration of these value chains—actors in these value chains are more likely to engage in marketing to, and retailing with, the end consumers of their products. Facebook—which has the longest-standing history among active social media platforms, a near ubiquitous global presence, and is familiar and simple to use—is more widely used among farmer-producers, who tend to have the lowest tech literacy among value chain actors, and many of whom may not be aware of—or interested in—adopting newer platforms. For this reason, Facebook is also used by those who need to access farmers, particularly input suppliers and aggregators who use it specifically for this purpose even if they use other platforms elsewhere in their value chain activities. YouTube is more commonly used for long-format video training, and it is most heavily leveraged among suppliers of information in the snail value chain to address the information gap in this value chain. WhatsApp use is universal among the study participants and is used for all manner of value chain activities including information exchange, aggregation and trading, collaboration and collective action, and particularly for closing business deals. Almost all social agriculture transactions, no matter the platform on which they start, end on WhatsApp.

Video-based social media platform functionality primarily affords consultation and training and is also used for proving or validating the authenticity of actors and their products or services. Long-form video content is most common on YouTube and is primarily used for training, particularly in the snail value chain. Short-form video posts such as Facebook “Stories” are most commonly used for marketing to end consumers of inputs (i.e., farmers) and for proving authenticity, particularly in the broccoli value chain. Likewise, short-form Instagram “Reels” are also most commonly used for marketing to end consumers of products and proving authenticity, particularly in the snail and broccoli value chains. WhatsApp is most commonly used for private video messages and video calls, and these are used throughout the case study value chains. They are most commonly used for training and consultation between suppliers of information and farmers-producers—particularly in the cassava and snail value chains—and are also used for proving/validating the authenticity of actors or their products or services to enhance trust.

Image-based social media platform affordances are used universally (both publicly and privately) among the value chains and actors in this study, though different individual needs and goals influence the purpose and usage of these platform affordances, and patterns of usage closely resemble those for video. Some platforms, particularly Instagram and Facebook, are designed more towards visual content than other platforms, and is therefore where image-based content is most heavily leveraged (though images are widely shared on all platforms). Images are commonly used to support market-making throughout the case study value chains and are most heavily leveraged towards

the end-consumer market among retailers of input supplies (particularly on Facebook) and end-consumer products (particularly on Instagram). Facebook and WhatsApp are more commonly used for sharing images relating to wholesale transactions between farmers and aggregators, and WhatsApp and Twitter are more commonly used for sharing images relating to wholesale transactions between aggregators and processors. Images are widely used for consultation between farmers and suppliers of information and inputs, and this is typically conducted in private conversations via WhatsApp, and to a lesser extent Facebook and Telegram. Images are also used to prove the authenticity of an individual, business, or products to audiences or customers, and in this instance are considered most effective if they include the actor's face. Incidentally, for public (as opposed to private) content, platform algorithms also tend to reward images that include faces with greater traction.

Audio-based social media affordances include voice notes in private direct messaging (DM) threads (available on X/Twitter and Meta products Facebook, Instagram, and WhatsApp); "voiceovers," which augment typically public-facing visual content and are available on all Meta products; audio-only discussion threads such as X (formerly Twitter) "Spaces" and "Live Audio Rooms" on Facebook; and, of course, voice calls—most commonly conducted via WhatsApp. Voice notes are most commonly shared via WhatsApp and are widely used for a diverse range of purposes: to overcome literacy and language barriers—particularly among suppliers of information and farmer-producers in the cassava value chain; to enhance trust and familiarity between actors (among all actors and value chains in this study); and simply for their ease of use by comparison to typing, which is again universally relevant. X (formerly Twitter) Spaces are relatively unused among the study sample save for two suppliers of information—one in the cassava value chain and one in broccoli—who use it for training. Voiceovers on Meta products are used to provide more information relating to a post or status update. Voice calls via WhatsApp are used universally to communicate, coordinate, and build trust and familiarity between actors.

Both public and private text-based communication may be content-based (i.e., posts) or discussion-based (i.e., conversations) and is near universal on social media platforms. Text is also used to support most other forms of social media content and interactions. Private direct text messaging is most commonly used for general discussion, for consultation between actors, to build and maintain relationships, and to close business deals—and WhatsApp is by far the most popular platform for these kinds of interactions. Most platform design and cultures revolve around short-form text content. LinkedIn is the only platform that effectively supports long-form text content, so we see it being used for this purpose among those who use it—primarily among aggregators, processors, and suppliers of information, and most notably in the cassava and snail value chains.

The majority of marketing (both retail and wholesale) conducted by the study participants leverages free-to-use platform features. However, some actors—particularly those retailing to end-consumer markets for inputs or end products—also run paid advertising campaigns on Instagram and Facebook. This

is most heavily leveraged in the broccoli and snail value chains where interaction with end consumers is more common. Those who use this affordance appreciate its value in terms of reaching large numbers of potential customers, the ability to target their audience, and the relatively low cost by comparison to traditional advertising methods. Consequently, they report how it has helped increase their revenue and reduce their operational costs.

Different platforms have different approaches to handling, cataloguing, and tagging content, and afford different levels of searchability and interactivity for users to access past content. Facebook and Instagram are designed more towards a continuous flow of novel content, and older content can sometimes be tricky to access due to the limited efficacy of the cataloguing, tagging, and search functionality on these platforms. YouTube and X (formerly Twitter) apparently have more effective search functionality such that past content is easier to access in perpetuity and searches can be targeted to the individual needs, purposes, and goals of different value chain actors.

Social media platform affordances for the formation of groups and communities are available on Facebook, WhatsApp, and Telegram. Groups are the backbone of social agriculture and are used for all manner of purposes relating to different value chain activities including the creation and maintenance of both vertical and horizontal linkages and relationships; information exchange; aggregation and trading; and various forms of advocacy, inclusion and collective action. All of these can enhance capabilities and opportunities for collective and individual value chain upgrading, and can also be used to influence or circumvent governance-based power structures.

Trust is a significant general issue in social agriculture due to the prevalence of scams, fraud, and mis/disinformation occurring on social media platforms. Many social media-based connections and interactions are impersonal, with associated risks for abuse; people don't always turn out to be who they claim to be or uphold their end of a deal. In response to this, many social agriculturalists in this study have developed social media-enabled strategies for enhancing trust and reducing risks associated with their social media interactions. These strategies include soliciting vetting and referrals among trusted peers and using platforms to conduct due diligence on unknown contacts by investigating a person's social media profiles, presence, and activities—sometimes extending to offline investigation as well. There is evidence of informal verification and certification systems being applied in social media groups on Facebook (snail; all value chain actors) and WhatsApp (cassava; processors, aggregators, and retailers) to prove the legitimacy of group members and foster a safer and more trusting business environment. With reference to transactions, strategies to enhance trust include prescriptive payment procedures and building trust in relationships, both online and offline. In response to the conditions of low trust, many of the social agriculturalists in this study also purposefully engage in social media-based activities to enhance their reputation and outward appearance of authenticity and trustworthiness. This is typically achieved by proving their *expertise* and/or *authenticity*. Text- and video-based social media platform affordances lend themselves best to proving

expertise by sharing high-quality information—which is more common among aggregators and processors in the cassava value chain on Twitter and LinkedIn (primarily text-based) and among farmers and suppliers of information in the snail value chain on YouTube, Facebook, and Instagram (primarily video-based). Platform affordances for visual content, particularly video and to a lesser extent images, lend themselves to proving *authenticity* by sharing honest, transparent, personable, and relatable content. This also fosters stronger and more trusting relationships between value chain actors and their audiences, and is more common among retailers in the broccoli value chain, primarily via Instagram.

A range of reported outcomes from the use of social media platforms have significant impacts on the livelihoods of the social agriculturalists in this study. These outcomes include vastly expanded audiences and customer networks, with associated increases in transaction volume and distribution channels thereby increasing incomes; improved efficiencies associated with travel, transport, communication, accessing market intelligence, and marketing—thereby reducing operational costs and improving profit margins; and the creation and maintenance of effective value chain linkages that—via the transmission of information, the co-creation of knowledge, and the coalition of power to influence governance dynamics—reduce value chain constraints, create capacities for individual and collective value chain upgrading, and open opportunities for extracting rent from the value-addition process, with associated increases in both empowerment and incomes. The participants in this study all report that their use of social media platforms for their agricultural livelihoods has improved their income and profit, sometimes very significantly, with explicit reports ranging from 45% to 90% increase. Some participants now get as much as 99% of their income from social media-based interactions and transactions. And yet, while this has undoubtedly benefited their livelihoods, overdependence on social media platforms comes with certain risks and downsides.

For most of the social agriculturalists in this study, social media platforms have become deeply embedded in their lives and livelihoods. Participants across the case study value chains described how much time they spend on social media, reporting between 3 and 18 hours per day—with jokes of being online 24/7. Social media communities move at a fast pace, and maintaining social capital in this space requires constant work at risk of losing business and reputation.

Social media-based scams, fraud, hacking, and mis/disinformation can result in financial and reputational losses. Social media-based harassment and cyberbullying can have significant emotional consequences and can negatively affect reputation. The necessity of internet access to use social media platforms comes with the associated costs of mobile data. Government blackouts, technological outages, and hacking can sever access to social media platforms, with associated negative outcomes for individuals who depend on them for their livelihood—in agricultural economies and beyond. With reference to these risks and downsides the social agriculturalists in this study have adopted various strategies to reduce overdependence on social media platforms, including diversifying the range of platforms they use to avoid being overdependent on

a single platform; collecting alternative contact information from their clients and customers, and maintaining offline databases of these; and building and maintaining a strong offline presence and relationships such that their businesses can still thrive even in the absence of social media platforms. Ultimately, despite these risks and downsides, all of the participants in this study assert that the advantages of using social media for their agricultural livelihoods far outweigh the disadvantages.

17 Recommendations

17.1 Direct recommendations from study participants

Participants offered a number of recommendations for ways in which they believe social platforms and experiences could be improved. Favour 🍌, an aggregator and retailer of processed cassava foods, recommends an official method for verifying buyers and sellers before they can join a community group, in order to build trust and curb fraudulent acts. Pelumi 🍌, a cassava processor, recommends an “agricultural app” that should be just like the popular social media platforms to bring all agriculturists together for easy interaction. Tunde 🍌, a cassava aggregator, recommends that social media should provide opportunities for logistics because this is one of the most significant challenges Nigerian agriculturalists face. Snail farmer, processor, and retailer Dare’s 🍌 recommendation was in reference to Instagram; she does not like the practice of shadow banning and tagging restrictions. She said not everyone is tech savvy enough or able to understand why this happens and what its impact can be, and believes Instagram should stop this practice of making accounts “invisible” to other users. Samson 🍌, a broccoli farmer and trainer, notes that Naira cards currently can’t be used for most formal online transactions due to regulatory concerns about corruption and security. He recommends addressing this constraint to better enable digital card payments. He also has a concern about the blue tick for verified accounts on X (formerly Twitter) and Facebook, and that anyone can now pay for their account to be verified which defeats the whole aim of proving authenticity. He wants the blue tick to be given to pages based on merit, not for the fact that people can afford it. He also added that there should be an edit option on X (formerly Twitter), so a tweet doesn’t need to be deleted simply to correct a typographical error. He wants Instagram to have a commercial shop that people can buy from and believes that promotions should not only be restricted to the use of Reels but for pictures as well. He concluded that the

length of video that can be posted on Instagram should also be increased. Most participants reported using WhatsApp as the final platform for closing business deals. An integrated payment system would streamline trade and reduce the risk of non-payment and similar financial trust issues.

17.2 Research-based recommendations

Infrastructure enhancement

Many of the constraints outlined in this report with reference to social agriculture are widely reported general constraints in the agricultural and public sectors in Nigeria. As such, we join others in recommending that policymakers address infrastructural inadequacies that constrain logistics and distribution of agricultural products, and that they and financial institutions provide better support to small-scale agriculturalists. The recommendations that follow are made with specific reference to the use of social media platforms for agricultural livelihoods—though they may be relevant to other platform livelihoods and economies. The recommendations are variously relevant to **policymakers** including governments and ministries; agricultural, financial, or other nongovernmental **institutions**; **platforms** and others in the tech industry; **researchers** in academia and the public, private, and donor sectors; and social agriculture **stakeholders** themselves.

Informational and training resources

With reference to the ways in which social media platforms can be—and are being—used to overcome general constraints and to pursue opportunities, we recommend the development of informational and training resources to assist social agriculturalists in their practice to get the most out of social media platforms for their livelihoods. Many of the strategies documented in this report have been developed on an ad-hoc basis through trial and error. Formalized resources highlighting best practices could be developed by **researchers**, **institutions**, and/or **stakeholders** to help reduce or avoid practice-based errors and associated negative livelihood outcomes and to improve positive outcomes.

Agricultural information is already widely shared and accessed via social media, though this could be better formalized and centralized into widely accessible and comprehensible resources, which could be undertaken by **policymakers**, **researchers**, **institutions**, **platforms**, or **stakeholders**.

Strategic governance interfaces

With reference to governance, social media platforms could be used more strategically and effectively for interfacing between **policymakers** and agricultural **stakeholders**. Social media platforms are becoming a primary mode of communication among agriculturalists in Nigeria, and in many cases this may be the most effective venue for **policymakers** to access them and include them in policymaking processes. With reference to agricultural **stakeholders**, we recommend more intensively and effectively using the tools of social media platforms for advocacy, inclusion, and collective action with reference to both policy-based governance influences and other forms of governance that may constrain their empowerment and mobility in their value chain.

Horizontal linkages for knowledge transfer

With reference to networking, we recommend for **stakeholders** in the broccoli value chain—and others that are similarly novel, immature, or under-supported—to follow the example of the snail value chain by using social media platforms for the creation and maintenance of supportive horizontal linkages for the transfer of information and the co-creation of knowledge to address information gaps in information-scarce value chains.

Market access

Based on some of the success stories documented in this study, we recommend those **stakeholders** who are not already doing so to maximize the use social media platforms to access and create new markets for their products, and to use these tools to secure their market in advance of harvest to avoid the risk of spoilage and losses.

Efficient financing through social media

With reference to accessing finance, we recommend that **institutions** offering financial support to agriculturalists more strategically and effectively use social media platforms to publicize funding opportunities to **stakeholders**. Equally, we recommend **stakeholders** leverage platforms to access finance, not only from **institutions** but also from investors and via crowdfunding. Since crowdfunding for agriculture in Nigeria appears to be largely conducted informally and with certain risks, we recommend that **platforms** develop or roll out secure digital crowdfunding solutions in Nigeria and ensure **stakeholders** are aware of these solutions.

Significance of platforms

With reference to the risks and downsides associated with the use of—and dependency on—social media platforms for livelihoods, we recommend that **platforms** better appreciate the level of commerce and diversity of livelihoods and economies that depend on their products and develop functionality to reduce negative outcomes and improve positive ones. Specific recommendations include introducing (or improving) verification and secure payment systems tailored towards social media-based commerce; improving support of the diverse languages of platform users worldwide; and developing in-built real-time translation functionality to address language and literacy barriers. We also recommend **platforms** to improve moderation with regards to the prevalence of fraud, harassment/bullying and mis/disinformation.

Reducing overdependence on platforms

We advise social agriculture **stakeholders** to avoid overdependence on platforms by diversifying and strengthening their business models and to improve as best as possible their tech-savviness to use platforms well and avoid common pitfalls. We advise **policymakers** to appreciate the significance of social media platforms to (not only agricultural) livelihoods and economies, and therefore to refrain from politically motivated social media bans, which negatively impact platform livelihoods and economies.

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19 Appendices

19.1 Appendix 1 Study participant table

Name	Roles/value chain activities	Location (state)	Short bio
 CASSAVA			
Tunde (male)	Aggregator, producer, consultant	Ogun	Managing director of an agricultural company, agricultural specialist, author, and conference speaker. Also involved in marketing and distribution of quality farm produce.
Sanusi (male)	Input supplier, producer, aggregator	Oyo	Co-partner and operations manager of an agricultural input company. Agribusiness consultant, establishes and manages farms, and consults on value addition within agricultural value chains.
Pelumi (male)	Processor, aggregator, producer, consultant	Osun	Co-founder and CEO of cassava processing company, agribusiness entrepreneur in agricultural value chain management, food systems development, supply chain management, agro-processing, and agricultural education.
Favour (female)	Aggregator, retailer	Delta	A young insurance marketer who has also worked independently as a processed garri retailer for 2 years and earns more from her garri sales than her insurance marketing.
Timothy (male)	Trainer	Oyo	Agronomist, crop system specialist, agribusiness coach, trainer, and consultant with over 8 years of experience in the agri-food industry.
Oluwadara (female)	Processor, aggregator, input supplier	Kwara	Agripreneur with specific interest in developing nutrient-dense and healthy foods from indigenous crops, including cassava, maize, beans, sweet potato, and plantain.
Mohammed (male)	Aggregator, consultant	Ogun	Agripreneur specializing in agricultural value chains and export of agricultural produce; aggregates cassava for processing into garri and cassava chips to supply other companies.

Name	Roles/value chain activities	Location (state)	Short bio
Kahinde (male)	Aggregator, processor, consultant	Oyo	Runs an agricultural company that aggregates, processes, trades, and distributes agricultural commodities, including cassava. He is also an agricultural business consultant.
Omotosho (female)	Private extension officer, producer, retailer	Osun	Osun State Agricultural Development Projects extension agent and Unified Agricultural consultant. Extension specialist and rural sociology expert.
Folarin (male)	Processor, producer	Oyo	Works for a cassava starch processing company, to which he also supplies fresh cassava from his own active farming production.
 BROCCOLI			
Ryakeng (female)	Aggregator, retailer	Plateau	CEO of agro-marketing and sales business selling various exotic fruits and vegetables grown on the plateau, including broccoli. Former professional pilot who transports her produce by air freight.
Samson (male)	Trainer, producer, aggregator, retailer	Ogun	Team lead for a high-tech hydroponic greenhouse agricultural laboratory which delivers training on the technologies and methods employed, and produces crops for commercial sale.
Gyang (male)	Producer, retailer	Plateau	A broccoli producer growing in greenhouses.
Ladi (female)	Input supplier, consultant, producer	Plateau	Supplier of agricultural inputs and agrochemicals, including for broccoli. Has a physical input supply store and markets and sells via social media.
Ngozi (female)	Aggregator, retailer	Plateau	Agripreneur marketing vegetables, including broccoli, for over 5 years. Sells most of her produce via social media.
Samuel (male)	Producer, input supplier	Ogun	Vegetable farmer and agronomist, actively distributing broccoli seeds and growing broccoli.
Grace (female)	Aggregator, processor, retailer	Plateau	Procures after-harvest spoilage of harvested broccoli to dehydrate and mill into powder. Enthusiastic about food sustainability and food security.
Adetokunbo (male)	Retailer	Lagos	Professional chef serving broccoli dishes in his restaurant and promoting them via social media.
 SNAIL			
Kester (male)	Consultant, producer, input supplier, retailer	Lagos	An animal scientist with 10 years of experience in establishing and managing livestock farms, including snails. Also has his own snail farm.
Oko (male)	Consultant, producer, input supplier	Lagos	Agripreneur and founder of an agricultural company, with 10 years of experience in consulting, producing, processing, and trading snails and their byproducts.
Bello (male)	Producer, processor, retailer, consultant	Oyo	CEO of farm company which produces snails for national and international markets, and trains other snail farmers.
Ezekiel (male)	Consultant, producer, input supplier	Ondo	Agripreneur and snail advocate with 10 years of experience in agribusiness, agricultural value chains, operations management, supply chain management, and agro-processing.

Name	Roles/value chain activities	Location (state)	Short bio
Miriam (female)	Producer, processor, retailer, information supplier	Lagos	Snail grower and processor who breeds, grows on, and processes snails. An advocate for the use of snail slime in cosmetics. Also offers snail-related training and consultancy.
Dare (female)	Producer, processor, retailer	Lagos	Snail farm founder rearing, processing, and packaging snails and their byproducts for consumer sales nationally and internationally.
Temisan (female)	Producer, trainer, information supplier	Lagos	Founder of snail-farming business, which produces snails and provides training with a focus on women entrepreneurs. Also promotes snails and offers tips on social media.
Victor (male)	Producer, consultant	Ekiti	Founder of organic agriculture company, also offering consultancy services nationally and internationally. Introduced an award-winning international quality trademark into snail processing, packaging, and exports.
Chukwudumebi (female)	Retailer, aggregator	Abuja	Founder of a restaurant serving snail delicacies. Was formerly a snail producer, now focuses on aggregation and processing snails from other producers.

19.2 Appendix 2

Interview discussion guide

The purpose of this interview is to:

- Document the interviewees' experience with social media platforms and their functionalities as these relate to their specific activities within the agricultural value chain which includes pre-production (i.e., physical and informational inputs), production, processing, logistics/distribution, and marketing.
- Correlate this experience with the characteristics of the value chain and potential changes thereto.
- Map out how the usage of social media platforms has impacted the interviewee's livelihood and the overall configuration of the chain.

Explainer to participants

We are doing research on how agricultural entrepreneurs are leveraging digital platforms such as Facebook, Instagram, TikTok, Twitter, etc. We are interested in your experiences using these digital tools, both good and bad.

We are trying to build a more accurate picture about how people are using these platforms, but also what the challenges are in using them. By listening to you today we will gain a better understanding of how people are using these tools—leading to us publishing research which will help improve the way these platforms are designed.

What to expect

The process today will be informal and open-ended. You lead the process as much as I do. There are no “right or wrong” answers. I am not looking or hoping for any particular answers from you—we are interested only in your personal thoughts, feelings, and experiences in whichever way you express them. There is no agenda other than finding out about your opinions and experiences. I am here to represent you and your perspectives so please feel free to express yourself as honestly and openly as you can.

General profile

- 1 Please tell us a bit about yourself (name, age, location (personal/agribusiness), educational background).
- 2 What are your main sources of income?
- 3 Do you own a smartphone/device?
- 4 What social media apps do you use on your smartphone?

Value chain role/activities

- 1 Please describe your job(s) (agricultural) to me (the activities involved in your role; how you do your job).
 - a How did you come to have these activities?
 - b Why is your job important in your specific industry/sector?
 - c What has helped you to be successful? What do you struggle with and would like to change?
 - d Whom do you work with? How did you find and select these contacts? How do you sustain these relationships?
 - e Does the nature of your crop/product affect your business activities in any way? (i.e., perishability)
 - f What changes would you like to make in your activities? Why?
- 2 How long have you been involved in this job?
- 3 What are the primary ways your livelihood/business adds value to the value chain / to products moving through the value chain? (aka where do you make your profit?)
- 4 What would you like to do to be more profitable? Do you think social media can help with this?
- 5 Tell me about access to finance for your crop/product? What is the perception among conventional/institutional financiers of your crop/product?

Value chain mapping

Please describe from start to finish what the value chain for your product looks like and how it works. How and where is social media relevant and useful in this?

Social platform usage

- 1 Does/could social media play a role in financing your crop/product?
- 2 How long have you been on social media as an individual?
- 3 When did you start using social media for business?
- 4 How does your gender influence your experience on social media?
- 5 How did you first become aware of the personal uses of social media?
- 6 How did you first become aware of the business uses of social media?
- 7 To what extent did your business activities influence your decision to join social media in the first place?
- 8 To what extent does your business keep you on social media now?
 - a Where do you get your information? How much of a role does social media play in this? Are there other pathways for you to access information outside of social media?

- 9 How much time do you spend on social media per day? Why do you spend this much time on social media? How much of this time is personal use of social media, and how much is business use of social media? How does social media affect your work-life balance?
- 10 To what extent are you using social media to support your work/business?
- 11 (If a participant is active on more than one platform) Approximately what percentage of daily time spent is allocated to each platform?
- 12 Do you feel safe on social media? What makes you feel safe/unsafe on social media? Has anything happened as a result of social media interaction that has influenced how safe you think social media is/how safe you feel on social media?
- 13 What social media platforms do you use for agriculture? What do you use these platforms for? Why?
 - a Do you use different platforms for different purposes (or a combination of more than one platform for one purpose)? Can you describe and give examples?
 - b What prompted you to start using them in these ways?
 - c Walk me through a recent activity on these platforms which you witnessed or participated in.
 - d How did you hear about the social media group/channel you're involved in?
 - e What is the purpose of the social media platform group(s) you belong to (or channels you follow)? (Reference question 8.)
 - f What are the common things you discuss in these groups/channels?
 - g Who do you interact with in the group/channel? Can you describe one of these interactions—perhaps a memorable or striking one—from start to finish?

Establishing evidence of platform use

- 1 Are you a member of any agriculture-related groups on social media platforms (e.g., Facebook, Telegram, and WhatsApp Groups)?
 - a If yes, mention the groups (and their platforms) which you belong to.
 - b Do you follow/subscribe to any social media agriculture/agribusiness related accounts/influencers/channels? If so please name them and the platforms on which they are active.

Name of group	Social media platform	Year joined	When was your last post on a social media platform ?	What was this post about?	Role in group, if any	Group domain: General or value-chain specific

- 2 Which social media platform features/functions do you use like [*give example list of features*] [e.g., group/community chats, group calls, reactions, voice notes, events, share files, Q and A's, live videos, sales, and badges]? Why?
 - a What do you use the social media platform features for?
 - b Why do you continue to use these platform features?
 - c Do you use different platforms or features for different products, or at different stages of the value chain? Please describe this in detail.
 - d How have social media platform features and functions enabled you to do things differently in your agricultural livelihood/business?

Social media platforms and livelihoods

- 1 What do you see as the most significant impacts of social media platforms on the work you do and the people you work with? Why? Can you provide examples and share your experiences, or things you have witnessed?
- 2 How has social media changed what you were doing before in agriculture?
 - a How has social media changed or enabled changes in your activities in the agricultural value chain?
 - b What benefits have you achieved? (Has social media enabled you to leapfrog links in the value chain/connect with different parts of the value chain that you were previously unable to do before social media? Have you been able to move, reposition, or capture more or different parts of the value chain because of social media?)
 - c What are the upsides and downsides of social media use in your line of work?
 - d What challenges have you experienced/are you experiencing?
 - e Do you have methods for overcoming these challenges?
 - f What has been the impact on your livelihood and the livelihoods of those around you (earnings, security, mobility) from using social media platforms?
- 3 Are you doing anything in your livelihood or business now because of things you have seen or learned on social media? What have you learned on social media and applied directly to your livelihood or business? What value has this brought to you and your livelihood/business?
- 4 Has social media made your livelihood/business simpler or more complicated?

Mode of operation on social media

- 1 What strategies do you employ in conducting business on social media?
- 2 How did you decide on this strategy(ies)?
- 3 How do you get your customers/business associates to trust you?
- 4 How do you decide who and what to trust on social media?
- 5 How do you verify the authenticity of brands/clients on social media?
- 6 How does social media affect the level of competition/comparative advantage in your enterprise?

- 7 How would you describe the size of your agribusiness in the social media space?

Pros and cons

- 1 Share a positive social media business experience, and how it has affected your life.
- 2 Share a negative experience, and how it has affected your life.
- 3 How does it / would it affect you when social media platforms break down or go offline temporarily?
- 4 If social media is abolished, canceled, or no longer existing, what effect would it have on your business?
- 5 Does social media have any effect on your business/operational costs (e.g., rent, input, etc.)?

Potential of social media on value chain enterprise

- 1 What platform features do you think would encourage social media usage in your enterprise?
- 2 Can you think of any present or future risk(s) of adopting social media in your value chain?

Final (Wrap-up)

- 1 Is there anything else you would like to add concerning social media in agriculture?
- 2 Are there any questions you would like to ask me?

Thank you so much for your time!

19.3 Appendix 3 Interview data coding table

Code	Comment
GENERAL PROFILE::	
Participant's name::	For study participant's name
Participant's age::	For study participant's age
Participant's location::	For study participant's location
Educational background::	For study participant's educational background
Sources of income::	For study participant's income-generating activities/agribusiness
Own a smartphone::no	For study participants who do not own a smartphone/device
Own a smartphone::yes	For study participants who own a smartphone/device
social media platform used::Twitter	For study participants who mentioned having Twitter on their smartphone
social media platform used::Instagram	For study participants who mentioned having Instagram App on their smartphone
social media platform used::WhatsApp	For study participants who mentioned having WhatsApp on their smartphone
social media platform used::TikTok	For study participants who mentioned having TikTok on their smartphone
social media platform used::LinkedIn	For study participants who mentioned having LinkedIn on their smartphone
social media platform used::Facebook	For study participants who mentioned having Facebook on their smartphone
VALUE CHAIN ::	
Value chain occupied::	Snail; broccoli; cassava
Value chain role::	Information input provider; physical input supplier; producer; aggregator; processor; retailer; exporter; consumer
Value chain activities::	Activities involved in specific roles
Description of activities::	For study participants who mentioned how they carry out these activities
Resilience::	For study participants who mentioned what has helped them to be successful
Challenges::	For study participants who mentioned what they struggle with
Contacts::	For study participants who mentioned how they find their contacts for business
Changes in activities::	For study participants who mentioned the changes they want to make in their activities
Job involvement::	For study participants who mentioned how long they have been in their jobs
BUSINESS MODELS	
Entry point to social agriculture::	For study participants who discussed how they found their way into social agriculture as a livelihood
Agribusiness size on social media::	For study participants who describe the size of agribusiness in social media space
Level of competition::	For study participants who mentioned how social media affect the level of competition and advantages in their enterprise

Code	Comment
Effect of social media::	For study participants who think social media can aid thier business advancement for more profit
Keeping relationship::	For study participants who mentioned how they sustain relationships with clients
Value chain structure::yes	For study participants who describe the structure of their value chain and how it affects their business activities
Nature of value chain::no	For study participants who do not agree that the structure of their value chain affects their business activities
Decisions on strategies::	For study participants who mentioned how they decide on strategies
Access to finance::	For study participants who mentioned how they access finance for their businesses
Crowdfunding	For participants who mentioned crowdfunding as a means of accessing finance
Personal Savings	For participants who mentioned personal savings as a means of financing their businesses
SOCIAL PLATFORM USAGE::	
Social media role::yes	For study participants who agreed that social media could play a role in financing their crop/product
Social media role::no	For study participants who do not agree that social media could play a role in financing their crop/product
Social media use for personal reason::	For study participants who mentioned how long they have been on social media for persona use
Social media use for business::	For study participants who mentioned when they started using social media for business
Role of social media in sourcing information::	For study participants who mentioned the role social media plays on where they get their information
Sources of information::	For study participants who mentioned where they get their information
Other pathways of info::	For study participants who mentioned other pathways of access to information outside social media
Reasons for time spent on social media::	For study participants who mentioned the reason they spend time on social media
Time management	For study participants who mentioned the time they spend on social media for leisure and business
Time on social media per day::	For study participants who mentioned the time they spent on social media per day
Effect of social media on work life::	For study participants who mentioned how social media affect their work life
Percentage of time on social media::	For study participants who mentioned the approximate percentage of time spent daily allocated on each platform (if they are active on more than one platform)
Choice of platform for a particular value chain	For participants who discussed reasons for preference among other platforms
Platform specifics	Features or characteristics of platform audience that aid or constrain entry and usage
Gender influence::	For study participants who mentioned how their gender influences their experience on social media
Barriers for women	For study participants who mentioned barriers for women's integration into social media

Code	Comment
Intervention to improve integration of women	For study participants who mentioned things to be done to improve integration
Safety on social media::yes	For study participants who agreed that they feel safe on social media
Safety on social media::no	For study participants who do not agree that they feel safe on social media
Social influence	For study participants who mentioned that something happened as a result of social media interaction that has influenced how safe they feel on social media
Descriptions and examples::	For study participants who mentioned the examples
Establishing evidence platform use::	
Groups on social media::yes	For study participants who mentioned that they are members of any agricultural related groups on social media platform (e.g. Facebook, Telegram, WhatsApp groups)
Role in group::	For study participants who mentioned the role they play in their groups
Purpose of social media groups::	For study participants who mentioned the purpose of the social media group they belong to
Content of social media group discussions::	For study participants who mentioned things that are discussed in the groups
People interacted with on social media groups::	For study participants who mentioned those they interact with in the group
Membership verification	For study participants who mentioned how members are verified to join the groups
Platform continuity	For study participants who mentioned why they continued using the platforms
Agricultural livelihood::	
Impact of social media::	For study participants who mentioned the most significant impact of social media on work and people
Reasons of social media impact::	For study participants who mentioned the reasons for impact
Benefits achieved::	For study participants who mentioned the benefits they have achieved as a result of social media usage
Issues around social media usage	For study participants who mentioned the negative effects of using social media
Challenges experienced::	For study participants who mentioned the challenges they have experienced
Methods or strategies for overcoming challenges::	For study participants who mentioned the methods or strategies for overcoming the challenges
Social media influence on business implementation::	For study participants who mentioned what they are doing in their livelihood as a result of things they learned on social media
Positive effect of social media on business::yes	For study participants who agreed that social media has made their business easier
Positive effect of social media on business::no	For study participants who do not agree that social media has made their business easier
Trust::	For study participants who mentioned how trust is a major concern for easy sail on social media
Trusting clients::	For study participants who mentioned how they decide who to trust and what to trust on social media
Trusting transactions	Payment strategies of participants
Working with others::	For study participants who mentioned working with people

Code	Comment
Authenticity of brand::	For study participants who mentioned how clients ensure the authenticity of their brands
Pros and cons::	
Positive experience::	For study participants who shared positive social media business experience and how it has affected their lives
Negative experience::	For study participants who shared negative social media business experience and how it affected their lives
Temporary closure of social media::yes	For study participants who mentioned that social media will affect them if social media goes offline
Temporary closure of social media::no	For study participants who mentioned that social media will not affect them if social media goes offline
Effect of closure on business	For study participants who mentioned the effect of social media if it no longer exists
Effect of social media on business::yes	For study participants who agreed that social media has effect on their business
Effect of social media on business::no	For study participants who do not agree that social media has any effect on their business
Platform features for social media usage::	For study participants who mentioned the features of social media that will encourage usage in their enterprise
Present-future risks::	For study participants who mentioned the present and future risks of adopting social media in value chain
Final wrap-up::	
Additional comments::	For study participants with additional comments
Questions::	For study participants who asked questions

