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Cultivating Connections

How Social Media Powers Post-Production in Senegal's Agriculture Sector

Published December 2023

Authors

Angelique Dieng, Savita Bailur, Hélène Smertnik, Catherine Kamanu

Acknowledgements

This report was written by consultant Angelique Dieng Diene, Savita Bailur and Hélène Smertnik at Caribou Digital, and Catherine Kamanu at Kili-mo Source, with research assistance from Ndeye Dibor Ciss.

Thank you to the Mastercard Foundation for support and enthusiasm throughout the process. Special thanks to Robyn Read, Sharon Okwomi, and Anenike Mondukpe Bancole.

This research would not have been possible without the generosity of the agripreneurs in Senegal who took time to speak to our research teams about their livelihoods. Thank you.

Recommended Citation

Caribou Digital. *Cultivating Connections: How Social Media Powers Post-Production in Senegal's Agriculture Sector*. Farnham, Surrey, United Kingdom: Caribou Digital Publishing, 2023. https://www.platformlivelihoods.com/social-agriculture-senegal/

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This report was produced by Caribou Digital, in partnership with the Mastercard Foundation. The views presented in this paper are those of the authors and do not necessarily represent the views of the Mastercard Foundation.

Contents

Acronyms and definitions

Term	Definition
agripreneur or social agriculturist	Used somewhat interchangeably to describe the different actors along the agriculture value chain that leverage social media for their agricultural livelihoods.
agtech platform	An online platform that was built for the agriculture sector specifically, as opposed to social media platforms which agripreneurs have adapted to their needs.
agriculture value chain	A "value chain" in agriculture identifies the set of actors and activities that bring a basic agricultural product from production in the field to final consumption, where at each stage value is added to the product. A value chain can be a vertical linking or a network among various independent business organizations and can involve processing, packaging, storage, aggregation, transport, and distribution. The terms "value chain" and "supply chain" are often used interchangeably.[1]
free market value chain	As opposed to captive/regulated markets, a free market is characterized by: power distribution between buyers and sellers, keen competition, and less control and monitoring. It also involves large numbers of smaller retailers and producers
hierarchical/captive value chain	Hierarchical governance describes chains characterized by vertical integration and managerial control within a set of lead firms that develops and manufactures products in-house. This usually occurs when product specifications cannot be codified, products are complex, or highly competent suppliers cannot be found.[2]
post-production/ post-harvest	The main stages or elements of the post-production/post-harvest system are logistics/transport, processing (e.g., drying. threshing), storage, and marketing.[3]
social agriculture	A set of practices that support agricultural livelihoods based on the use of social media platforms, including Facebook, Instagram, Twitter, TikTok, Twitter, WeChat, WhatsApp, and YouTube.[4]

1 FAO, "Agricultural Value Chain Development: Threat or Opportunity for Women's Employment?"
2 Marketlinks, "Value Chain Governance."
3 Grolleaud, "Post-Harvest System and Food Losses."
4 Schoemaker et al., "Social Agriculture: Examining the Affordances of Social Media for Agricultural Practices."

Executive summary

Social agriculture refers to a set of practices that support agricultural livelihoods based on the use of social media platforms, such as Facebook, Instagram, Twitter, TikTok, WhatsApp, and YouTube.[5] In parallel to dedicated digital agtech platforms, social media is increasingly being used by agripreneurs for three core purposes—information exchange, community building, and trade—digitizing and facilitating organic practices that have long existed in the agricultural sector.

As a sector sometimes seen as traditional, agriculture[6] is increasingly attracting youth through the functionality of social media. COVID-19 also ushered in more agripreneurs who are familiar with social media and interested in diversifying their income or experimenting with new futures. Participants in this study shared a sense of return to agriculture as they have parents or grandparents cultivating land.

5 Schoemaker et al., "Social Agriculture: Examining the Affordances of Social Media for Agricultural Practices."
6 Including farming, but also processing, marketing, and selling or exporting

This report is the result of a rapid (three-month) exploratory research in Senegal specifically focused on the post-production stage of the agricultural value chain. Post-production follows the inputs and production stages of agriculture and itself comprises the logistics of post-production, transport, marketing, and sales. This focus was suggested by the Mastercard Foundation Senegal team that is interested in understanding how to support value creation and retention within the country. The fork-to-farm strategy[7] aligns with the Ministry of Agriculture's ambitions to improve efficiencies within the sector, by selling before producing, as representatives from the Ministry's Portail Formation Professionnelle Agricole shared during an online experts workshop.

Drawing from a landscape analysis, interviews with 15 Senegalese agripreneurs aged 18 to 35, and an online discussion with a selected group of 14 agricultural experts in Senegal, including the Mastercard Foundation, we highlight ten key findings:

1. Social agriculture lowers the entry barriers to agriculture, particularly at post-production, but requires a variety of skills.
2. In traditional, hierarchical, value chains, social media plays a key role for aggregators.
3. In newer, less structured free market value chains, social media creates space for innovation.
4. Social media is critical for marketing and sales, and less useful at the logistics stage of post-production.
5. Social networks foster collaboration and learning which lead to new income streams.
6. Advisory services in social agriculture make jobs in the sector more profitable.
7. Crowdfunding and other financial practices are gaining popularity in social agriculture.
8. There are untapped opportunities for rural agripreneurs, but they face analog challenges.
9. Women social agripreneurs develop strategies to overcome gender-based challenges.
10. Agripreneurs navigate multiple trust issues, particularly financial, in social agriculture.

7 Randrianasolo, "Africa's Best Hope for Inclusive Growth: Employment Opportunities in Agriculture in Africa."

Each finding is also compared and contrasted against previous research on social agriculture in Kenya,[8] as well as our upcoming related research in Ghana and Nigeria.[9] As in Ghana and Nigeria, the research in Senegal looked at the use of social media by agripreneurs across a broad value chain, as compared to research in Kenya which focused on farmers and earlier stages of the value chain. The first four findings above therefore provide a new layer of understanding of the use and impact of social agriculture across hierarchical and free market value chains, as well as different stages of the value chain. Findings 5 and 6 confirm earlier findings from the study in Kenya, that by facilitating information exchange, social networks support agriculture productivity and lead to more employment. Finding 7 goes into more detail around how social media can be used as a financial mechanism, an aspect which the research in Kenya began exploring and that the study in Ghana also looks into, specifically crowdfunding. Finding 8 and 9 speak to untapped opportunities by rural agripreneurs in Senegal that resonate with experiences found in the other three countries. Finding 10 confirms challenges common to social agriculture but also more broadly to all platform livelihoods.

We end with five recommendations from agripreneurs themselves and a set of recommendations for a broader group of stakeholders to encourage the safe and efficient use of social media platforms to improve the productivity of agricultural practices.

8 Caribou Digital, Kilimo Source, Learn.ink, and Habitus Insight, "Social Agriculture-Project Page."

9 These studies will be published in early 2024 and will be available on the https://www.platformlivelihoods.com/social-agriculture/ page.

Introduction

Social agriculture refers to how agripreneurs, such as farmers and agro-processors, use social media to support their agricultural livelihoods. The above quote illustrates some of the affordances social media provides agripreneur[10]—the ability to support information exchange, buying, selling, and finally growth.

> *"Without social media, we would not be where we are today in terms of growth, visibility, and customer acquisition."*
>
> **Young female agro-processor (Dakar)**

This report draws on three months of exploratory research in Senegal to understand the following:

- At the post-production stage,[11] why and how do agripreneurs use social media for their livelihoods? Which channels do they use the most and at which stage of post-production?
- What skills do agripreneurs need to effectively use social media to improve their livelihoods?

10 For a detailed analysis of social media affordances for agriculture see Schoemaker et al., "Social Agriculture: Examining the Affordances of Social Media for Agricultural Practices."

11 Post-production stages include logistics, processing, sales and marketing. See Figure 1 for more details.

Within these overarching questions, we also asked:

- What knowledge and skills (trust, creativity, responsibility, etc.) do agripreneurs require to efficiently use digital tools?
- What does social agriculture look like for women, those with low digital literacy, and those who may face other inclusion challenges? How can these challenges be overcome, and what methods do these groups currently employ to do so?
- How can digital skills training be formalized for agripreneurs?
- What overall support (whether from policy or platforms) is needed to improve the social agriculturist experience?

We explored these questions through three methods: a landscape analysis, interviews (either in person or virtually) with 15 agripreneurs ages 18 to 35, and an online discussion with a group of 14 invited participants comprising ministry officials, representatives from the Mastercard Foundation, and agripreneurs. As this research also followed in-depth social agriculture research in partnership with the Mastercard Foundation in Kenya, Ghana, and Nigeria, we also reflected and built on the learnings from that research where relevant.[12]

Following our initial landscape analysis, discussed in the following section, we concentrated further in two sectors in Senegal—horticulture and poultry—for primary research and interviews. Both value chains are increasingly popular in Senegal for agripreneurs, as opposed to more hierarchical value chains such as cereals and groundnuts. The latter are seen as more institutional and structured value chains that are largely protected by the state. Poultry and horticulture, on the other hand, experience more participation by youth due to increasing urban demand. These value chains also allow for more opportunities for innovation, with lower existence of and adhesion to farmers' cooperatives for marketing. This implies that farmers need to find their own marketing channels—an ideal fit for social media.

The next section outlines the brief background of agriculture and post-production in Senegal, followed by a presentation of the research methods. We then introduce the ten key findings, each with insights from the interviews and the online discussion. Finally, we conclude this report with best practices from agripreneurs to other agripreneurs, as well as a set of recommendations for the Mastercard Foundation and other donors, governments, and social media platforms.

12 Caribou Digital, Kilimo Source, Learn.ink, and Habitus Insight, "Social Agriculture-Project Page."

Landscape analysis of social agriculture in Senegal

Senegal's socioeconomic factors and their impact on internet and social media usage

A young, urban population, with lower literacy rates compared to similar economies

In 2021, 49% of Senegal's population was urban,[13] compared to 28% in Kenya. A quarter of the population lives in the urban area of the capital city, Dakar, representing 0.3% of the territory.[14] This increasingly urban population is partly driven by the lack of economic opportunities in rural areas. Around 35% of the population is aged between 15 and 35 years, and unemployment rates estimated at 13% within that population.[15] According to the National Statistics and Demography Agency (ANSD), the overall unemployment[16] rate is higher in rural areas (25.0%), compared with 19.0% in urban areas in 2022. Unemployment significantly affects more women (37.4%) than men (10.2%).[17] This highlights the pressing issue of massive job creation. Finally, the literacy rate among the population aged 15 years and older is relatively low (56% in 2021), compared to Kenya (83%), Côte d'Ivoire (90%), and Ghana (80%).[18]

13 United Nations Population Division, "Urban Population (% of Total Population)."
14 World Bank Senegal, "Senegal Overview."
15 Mastercard Foundation, "Sénégal."
16 To the ILO definition of unemployment, the ANSD add people available for work but not seeking a job for reasons beyond their control are counted as unemployed. See INSEE, "Unemployed Person."
17 ANSD, "Enquête Nationale Sur l'Emploi Au Sénégal, 2022, Quatriéme Trimestre 2022."
18 UNESCO Institute for Statistics, "Literacy Rate, Adult Total (% of People Ages 15 and Above)."

A growing usage of internet and social media for entertainment and trade

Despite a low literacy rate, the increased access to mobile devices, improved connectivity infrastructure, and generally younger population have supported a growth in internet usage from 21% of the country's population in 2015 to 58% in 2021, representing 8 million users.[19] As in other countries in the region, social media platforms are a strong vector of internet usage—often considered synonymous with the internet—and serve as channels for communication, livelihoods, information sharing, and entertainment.[20]

Table 1 ▾
Social platform use in Senegal

Social media platforms (most to least popular)[21]	User profile	Use
WhatsApp (over 3 million users)[22]	Literate and illiterate population due its ease of use (audio and video exchange).	Convenient to finalize transactions and build customer relationships.
Facebook (between 2.5 and 3 million users)	Popular among the general population.	Primarily used to reach a larger audience through advertising and information sharing.
Instagram (approximately 1 million users)[23]	Popular across younger or tech-savvy audiences.	
LinkedIn (950,000 users)	Popular across young professionals and tech-savvy audiences.	Making professional connections and finding funding (e.g., grant) opportunities.
TikTok (656,000 users)	Popular across younger or tech-savvy audiences.	Selling directly to customers via live videos in an entertaining way.
X (formerly Twitter, 310,000 users)	Popular across young and most educated/tech-savvy audiences. Interviewees have suggested it is the least liked social media channel.	Primarily used for information sharing.

19 ITU, "Individuals Using the Internet (% of Population)."
20 Jimbira and Cissé, "L'usage d'internet Dans Les Classes Populaires Sénégalaises. Le Cas de Marabouts, Marchands Ambulants et Femmes de Ménage."
21 Estimates vary; these are derived from: Mohamed, "Chiffres d'Internet et des Réseaux Sociaux au Sénégal en 2023"; E2B Consulting & Training, "L'utilisation des Réseaux Sociaux au Sénégal, les Chiffres Clés en 2021."
22 Mohamed, "Chiffres d'Internet et des Réseaux Sociaux au Sénégal en 2023"; E2B Consulting & Training, "L'utilisation des Réseaux Sociaux au Sénégal, les Chiffres Clés en 2021."
23 Mohamed, "Chiffres d'Internet et des Réseaux Sociaux au Sénégal en 2023"; E2B Consulting & Training, "L'utilisation des Réseaux Sociaux au Sénégal, les Chiffres Clés en 2021."

Growth of online commerce and remaining challenges

These platforms are convenient and affordable alternatives for businesses unable or unwilling to bear the cost of brick-and-mortar shops. In some cases, the convenience of social media becomes the main reason to engage in trading and reselling activities. Indeed, online commerce activities have been gaining traction in Senegal, with more people embracing online shopping, particularly since the COVID pandemic. Social media and e-commerce platforms such as Jumia, Soumari, and Afrimarket have benefited from this. In addition to increased internet usage, the availability of mobile money and affordable delivery services such as PAPS, CAR RAPIDE EXPRESS, and Tex Courier has supported growth. Mobile money services like Orange Money and Wave are widely used for person-to-person transfers, bill payments, and online transactions. According to a 2022 GSMA survey, 82% of men and 66% of women of the total adult population in Senegal used mobile money in the 30 days preceding the survey.[24]

Trust in the quality of products (the difference between the product ordered and the one delivered, quality, the possibility to return the order) and the effectiveness of payments are major challenges faced both by sellers and customers.[25] Other more general issues include limited internet access in rural areas, logistical issues for delivery, and the limited capacity of sellers to effectively engage with their audience (creativity, content creation, reactivity).

24 GSMA, *State of the Industry Report on Mobile Money 2023.*

25 GAINDE 2000, "Le CEO de GAINDE 2000 Passe au Crible les Enjeux et Perspectives du Commerce Électronique au Sénégal."

The agricultural value chain in Senegal

Agricultural value chains in Senegal can be divided into **cereals** (rice, millet, sorghum, maize, fonio), **industrial crops** (peanut/groundnut, sesame, cowpea, cotton), **horticulture** (onion, potato, carrot, tomato, cabbage, sweet potato, watermelon, green beans, strawberries, mango), and **animal production** (cattle farming, ruminants, and small-scale and commercial poultry and dairy farming). Figure 1 illustrates the typical stages of the value chain, regardless of the product.

Figure 1 ▾

Typical agricultural value chain in Senegal

	Pre-production	Production	Post-production		
	Inputs	**Production**	**Logistics**	**Processing**	**Marketing**
Activities	• Land access • Seed and fertilizer	• Water access • Extension services • Digital tools for farm management	• Access to storage facilities • Aggregation • Logistics • Funding	• Packaging • Processing • Funding • Access to machinery	• Wholesaling • Retailing
Actors	• Private providers • Government subsidy schemes • Financial institutions such as la Banque Agricole	• National extension services agency (ANCAR) • Tech providers	• Farmers' cooperatives • Warehouse receipt system authority • Private providers • Middlemen • Processors • Retailers	• Industrial processors • Artisanal and informal processors • Semi-industrial processors • State companies	• Traditional markets • Informal wholesalers and retailers • Formal retailers and supermarkets • Exporters

Two key value chain governances

Within the agricultural value chain, there are different types of governance.[26] Certain cereals, industrial crops, and large-scale cattle farming are considered to belong to more regulated, hierarchical, institutional value chains, while horticulture and poultry are considered to belong to free market governance.

- **Hierarchical value chains** in Senegal typically operate with strong government and donor support (e.g., subsidized seeds and machinery and/or price setting); these include rice and groundnut. Farmers' cooperatives also tend to support aggregation, marketing, and/or access to finance. Farmers in these value chains tend to be older and have lower literacy rates: 38% are literate in French or local languages, including 27% who have finished primary school.[27]
- **Less regulated and more open market value chains**, such as those in the horticulture and poultry sectors, are experiencing growth and innovation, sometimes by those who never considered an agricultural career. More women also work in the horticulture sector (fruits, vegetables, greens, herbs); 34% of women-headed households report having grown horticultural products versus 17% of male-headed households.[28] Increasing growth of these sectors (including for women) could be due to the fact that horticultural products require less land to be profitable and can be produced after rainfed cultures, such as cereals and industrial crops.

Focus on post-production companies

At the post-processing stage, there are three categories of agro-processing companies in Senegal.[29] It appears that social agriculture currently has more traction and usage within the first group and, to a lesser extent, the second group.

- **A large number of artisanal and informal agro-processing micro-enterprises.** These are an important part of the non-agricultural economy and create jobs and income, especially for women. They are also important users of local agricultural products and produce affordable food for lower-income populations. These companies are likely to use social media for advertising and selling, as they often do not meet the requirements (quantity and quality) of established retailers.

26 Marketlinks, "Value Chain Governance."
27 The data in this section is based on an analysis of the Ministry of Agriculture's 2021/2022 Annual Agricultural Survey databases.
28 The data in this section is based on an analysis of the Ministry of Agriculture's 2021/2022 Annual Agricultural Survey databases.
29 l'Équipe FIDA Sénégal, *L'avenir de l'agriculture au Sénégal, 2030–2063*.

- **Small and medium-sized semi-industrial enterprises.** These enterprises are distinguished from the industrial sector by high proportions of manual operations and relatively low levels of investment and production capacity. A portion of these companies can sell through formal retail channels (e.g., Auchan), online grocery stores (e.g., Club Tiossane, Sooretul), and directly to customers via social media. Examples of companies include Ferme de Gandiole, le Lionceau, Senar, ACASEN, and Mandarine.
- **A growing number of formal industrial-scale agribusinesses.** These businesses are owned by domestic and foreign investors. They use imported inputs and local products to produce a range of processed products that meet the expectations of higher-income classes. Their manufactured products (fast-moving consumer goods) are often sold through informal (traditional open-air markets, neighborhood small shops) and formal (supermarkets, hypermarkets) retail channels. Such companies include PATISEN, SENICO, and SEDIMA.

Challenges at post-production stage and how social agriculture may help

In Senegal, around 60% of the workforce is engaged in food crop production. However, agriculture accounted for only 16% of the country's GDP in 2020.[30] This indicates challenges impeding the growth and profit of the sector. Participant interviews highlighted some of the main challenges at post-production stage: inadequate access to storage leading to increased post-harvest losses and low selling prices; logistics; aggregation; and unclear commercialization channels for actors that are not members of cooperatives. For processors, the main challenges include: inadequate supply (difficulties securing enough raw material at a competitive price, making them operate below their installed capacity); access to finance to secure supply, machinery, and working capital; management capacity; food safety standards; access to training and knowledge; and access to commercialization channels.

Early findings on the potential of social agriculture, in particular for informal and small-sized companies, suggest that social networks can be a great tool to overcome some of these challenges by: sharing information on how to manage post-harvest losses; providing marketing channels; and supporting access to finance.

30 MAERSA, "Atelier d'élaboration de la Stratégie de souveraineté alimentaire du Sénégal."

Examples of social agriculturalists in Senegal

A scan of agripreneurs on social media produced the following list of 16 prominent "social agriculturists," although this list is not exhaustive. The following phase of the research involved in-depth discussions with several of these agripreneurs.

Table 2 ▾

Prominent agripreneurs on social media in Senegal[31]

Name	Type	Product offer	Social networks and followers
Agriculture et l'Élevage au Sénégal	Private group	Information and expertise sharing, and support on business development, production, and marketing.	78,000 on Facebook
Agrosine	Farm and online market	Expertise selling, content creation, production and marketing of farm products.	56,000 on Facebook
JeufZone	Online farm market	Training, marketing, and fundraising.	19,000 on Facebook 17,500 on Instagram
Sunu Produits Locaux	Aggregator and retailer	Processing and selling of cereals.	14,000 on Facebook
BEPCO Senegal Agriculture	Farm	Production, aggregation, and marketing of rice and horticultural products.	4,000 on Facebook
Ferme Agricole Intégrée du Sénégal (SARL)	Farm	Dairy farming, milk production, and marketing.	1,100 on Facebook
Ferme Gandiole	Farm and processor	Production, aggregation, processing and marketing of agricultural, poultry, and meat products.	55,000 on Facebook
DIAARY	Farm	Production and marketing of milk.	5,000 on Facebook
Plateforme Nio Far/ MBORO Elevage	Cooperative	Input seller, project monitoring, staffing, and marketing support.	5,000 on Facebook
Les Délices de la Casamance	Processor	Processing and selling of local products into juice and jams.	3,400 on Facebook
Ferme Baneex	Farm	Information sharing, production, and marketing	1,800 on Instagram
Warwi	Community	Training.	2,000 on Facebook
Ferme du golf	Farm	Marketing of poultry, horticulture, and forestry products.	486 on Facebook
Lekketu Mame Ndiaw	Processor	Agro-processing cereals	210 on Facebook
Mame Ndeye Agro	Processor	Processing and selling of cereals horticultural products.	260 on Facebook
Ferme agropastorale batalba	Farm	Production and marketing of agricultural products.	34 on Facebook

31 Authors' research.

Demographic and methods

Methods

To discuss the research questions in the introduction, the following research methods were employed:

- A **landscape analysis of the social agriculture sector in Senegal,** as summarized in the previous section.
- An **interview guide** built on the gaps identified in the landscape analysis (see Appendix B for more details).
- **In-depth interviews** in person and via Zoom with 15 male and female agripreneurs in Dakar, Mboro, and Darou with a focus on post-production stages. These were divided into two groups: an urban/peri-urban group, and a rural group (see Appendices A and B for more details).
- An **invitee-only high-level online discussion** with representatives of the Ministry of Agriculture, youth training and learning centres, Mastercard Foundation Senegal, and agripreneurs to solicit feedback on initial findings (see Appendix C for more details).

Participants' profiles

The great majority (14) of the 15 participants were young (between 25 and 35 years old) and educated, with secondary education (on average, masters level) and with the means to grow their business using scholarships or self-funding. Most respondents' initial training was not in the agriculture sector; they completed additional training to move into the space. Therefore this research does not intend to be representative of the agriculture sector, nor of all youth invested in agriculture.

Research questions

As a result of the above landscape analysis, we mapped out the following research hypotheses against the initial research questions.

Table 3 ▾

Research hypotheses and sample of interview questions

Research questions	Research hypotheses	Sample of interview questions (see Appendix B for more details)
• At the post-production stages, how and why do agripreneurs use social media for their livelihoods? How does this help compare to traditional networks? • Which channels do they use the most and at which stage?	• Different platforms are used for different purposes, therefore require different skills and approaches • Social agriculture offers alternative means to overcome challenges in post-production stages. However, agripreneurs still need both online and traditional channels to optimize their revenues. • Constant efforts are needed to ensure online groups provide the right level of information and follow-up. • The recent internet outage and restriction of social media in Senegal has impacted social agriculturists' livelihoods.	• What are your needs (post-production) as an agripreneur? • Which online platforms do you use and why? • In your value chain, why do you think social media is particularly efficient post-production stage? Or particularly inefficient? Please give examples • What were the consequences of the recent internet outage and restriction of social media?
• What skills do agripreneurs need to effectively use social media to improve their livelihoods, as well as those of smallholder farmers (upstream)?	• Agripreneurs struggle to convert contacts and followers into actual business. • Agripreneurs struggle to effectively optimize their online presence (reactivity, content creation, customer relationship building, understanding of the platforms algorithms, etc.). • These challenges can be reduced through specific training to be delivered through young people and online. • Lack of trust and customer awareness of the brand can create barriers	• What challenges do you face maintaining trust, quality of information, and converting followers into actual business? • What are the skills needed to optimally benefit from social networks? • How do you build trust? • What is the best way to deliver the support needed (policy, platforms, training)? • Which organizations do you partner with in Senegal for upskilling programs?

Ten key findings

1
Social agriculture lowers the entry barriers to agriculture, particularly at post-production, but a variety of skills are required.

"Digital has given us fame … we rely on social media so much that demand outstrips supply."

Young male agripreneur (aggregator, processor, and seller) (Dakar)

All agripreneurs interviewed were positive about the role of social media in jump-starting their business and accelerating growth. As the quote above highlights, participants were convinced that without social media, their business would not have grown as quickly. Benefits of social media included cost-effective marketing combined with a wider reach, targeted advertising, and direct customer engagement. All these directly and positively impacted visibility, brand awareness, opportunities, and sales. Agripreneurs also felt they did not need to open physical shops with their related costs (rent, electricity, staff), which allowed them to focus their investment on the core business. Social media can therefore significantly reduce entry barriers to young entrepreneurs who want to engage in agriculture sector, removing capital and client-network obstacles.

This effect of social media movement towards social agriculture has seen a strong uptake within urban/peri-urban youth, represented by the research participants. Many of these agripreneurs did not have formal agricultural training but were curious about methods of post-production that could result in high-value products. In a majority of cases, their business was their first foray into agriculture. Decisions to enter the agricultural sector were influenced by a number of factors such as: unemployment during and post-COVID; inspiration to "return to roots"; the impact of social media itself; and the idea of entrepreneurship. (Similar motivations were expressed in our research Kenya, Ghana, and Nigeria.[32])

- The male founder of Agrosine, for example, was studying law, which he did not feel passionate about, and his parents were not initially supportive of his move into agriculture. While he was primarily interested in post-production for the value-add it generates, he felt it was best to oversee the entire value chain to ensure ownership and control.
- The female founder of Délices Casamançaises was a teacher, but when her son became ill, she could not combine her working hours with care-giving. Her parents were from Ziguinchor, where she noticed large losses in the mango value chain: *"fruit rotting on the ground after harvest, which also meant very low prices for sellers in market."* A combination of these circumstances led her to pursue mango preservation, such as powder, syrup, and jam.

These young urban agripreneurs present a new demographic to enter the market. In contrast, the rural group of interviewees in Mboro (120 km from Dakar) were largely smallholder farmers who had fewer options and lower levels of school completion. They worked with traditional value chains and were less comfortable with social media.

Finally, as captured by the quote at the start of this section, while social agriculture is attractive and lowers barriers to enter agriculture, it needs to be supported by a solid infrastructure. If agripreneurs succeed on social media, they need to be able to fulfil demand. Not being able to do so can severely affect their reputation.

32 Caribou Digital, Kilimo Source, Learn.ink, and Habitus Insight, "Social Agriculture-Project Page."

2
Social media enables agripreneurs to be more creative and innovative in newer, less-structured value chains, as compared to traditional, institutionalized value chains.

"On social networks, we share all the tests, news, and research to promote the strawberry industry, which attracts a maximum number of customers and people who want to learn how to start producing strawberries."

Young male agripreneur, (strawberry farmer, processor, and promoter) (Dakar and Bayakh)

As discussed in the previous section, in Senegal horticulture and poultry farming are considered free market value chains, less structured than the institutional value chains of cereals, groundnuts. Agripreneurs in less structured value chains typically possess smaller acreage and produce less tonnage than those in institutional value chains. As a result, they often have to source their own markets, particularly for business-to-consumer transactions. This is an ideal fit for social media. As shown by the quote above, in these less structured value chains, young agripreneurs found social media useful to sharing expertise(both providing and learning), which also leads to advertising, customer acquisition, sales, and access to capital and funding.

Similarly, as found in the upcoming study in Nigeria,[33] social agriculture is prolific in information exchange on snail and broccoli cultivation (the latter is not a staple African crop). One example of social media contributing to innovation is the way some entrepreneurs in Nigeria began manufacturing broccoli powder after learning how to do so from social media. This not only created a new opportunity, but also reduced the post-harvest losses of this highly perishable product.

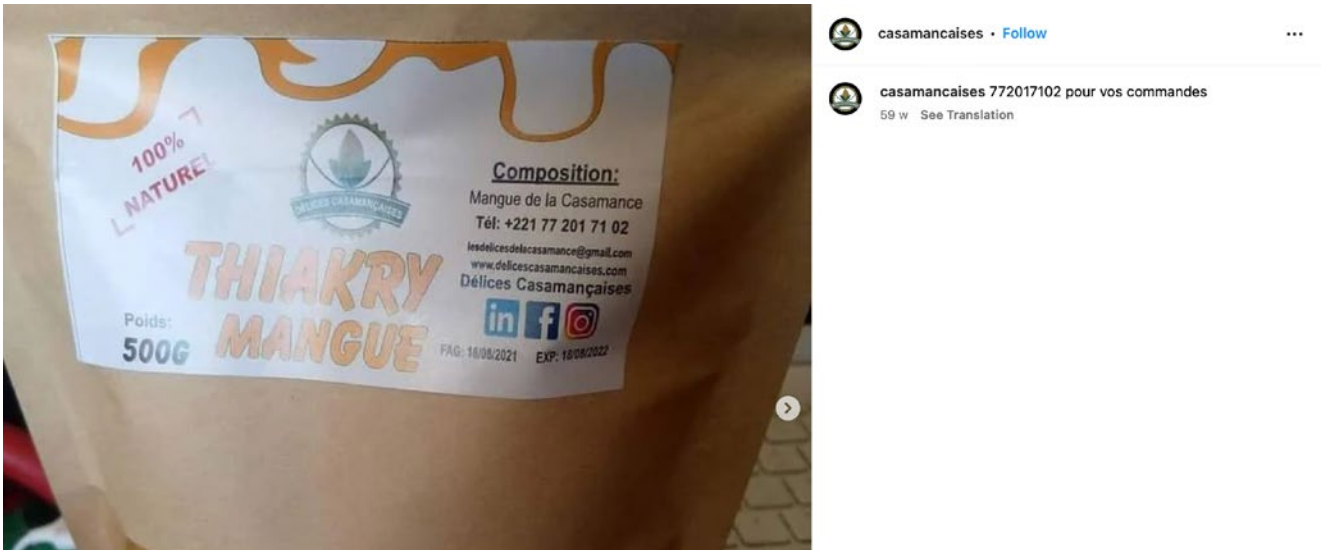
33 To be published on:, "Social Agriculture-Project Page."

3
Social media is critical for marketing and sales to individuals as well as big companies or hotels.

"Around 90% of my revenues come from social networks sales and the rest from my shop … that I had to open during COVID to solve storage issues."

Young female agroprocessor (Dakar)

Reflecting on the different stages of the agricultural value chain (Figure 1), participants agreed that the greatest value in post-production was in the marketing stage. At the marketing stage, interviewees described using social media to engage with customers, increase visibility, and build credibility for their companies. They use Instagram, LinkedIn, and Facebook to advertise their services and products, build brand awareness, and actively engage with potential customers. Sales are then usually concluded on WhatsApp due to its convenience.



Screenshot of Délices Casamançaises's online marketing of processed mango product: from TikTok to Instagram and a phone number to conclude transactions on WhatsApp or over a phone call.

Agripreneurs believe that social media platforms are convenient, efficient, and cost-effective channels for marketing compared to usual channels, including radio and TV spots, billboards, or flyers for marketing. Social platforms also support sales, offering alternatives to renting and maintaining a physical shop and hiring staff. Participants spoke of using visuals, live videos, and reels to make viewers more familiar with their products.

Marketing through social media has also allowed some interviewees to get bigger contracts with traditional players, such as supermarkets and hotels, as well as earn awards. Several interviewees reported large retailers contacted them online via their social media channels, leading to their current contracts. Those contracts allow them to sell greater tonnage in addition to continuing to do direct sales to individuals on social media. These uses of social media echo findings in Kenya and Nigeria, where social agriculture is highly used in marketing and selling agriculture products with the main goal of getting better prices and wider customer reach. A key feature is the use of images, critical in improving sales.

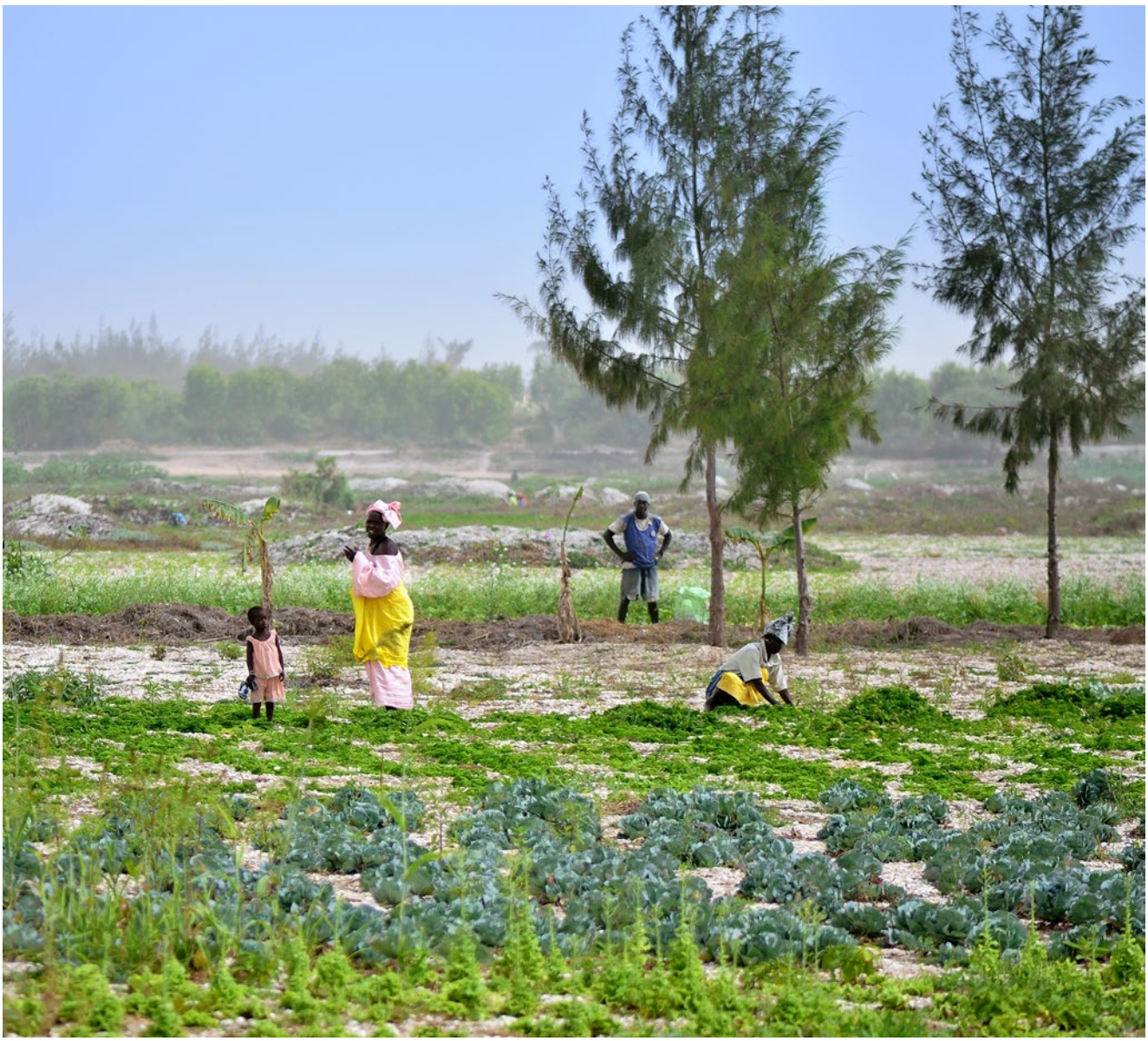
4
Social networks foster collaboration and learning across Africa which lead to new income streams.

"I learned from my Facebook contacts in Burkina how to process mango into powder. Since then, I have added it to my catalogue of products."

Young female agroprocessor (Dakar)

There is also an element of building community; for example, the founder of Fraisen spoke of building a "Made in Africa" brand. Agripreneurs address their own knowledge gaps through social media, using communities of practice and fostering collaboration and learning in Senegal and beyond (e.g., Côte d'Ivoire, Burkina Faso). Through these communities (e.g., Facebook groups), they learn new farming and processing techniques and can create new products. They can exchange information on agriculture-specific and business challenges, as well as develop a broader network for funding opportunities and partnerships (we elaborate on this point later). The geographic reach of social media also ensures these relationships can be far-flung. While some participants were more comfortable with learning and exchanging information with neighbouring Francophone communities, other agripreneurs specifically took courses in the United States or other countries they considered having more advanced post-production techniques.

These findings of learning through social media align with those from Nigeria and Ghana, where different actors along the value chains (both hierarchical and free market) are learning and refining techniques through social media, in particular how to process and preserve foods. In Nigerian traditional value chains such as tomatoes, knowledge on sun drying tomatoes is shared, while making paprika from fresh capsicums is recommended to reduce post-harvest losses. In the newer value chain of snail farming, where snails were previously harvested from the forest during the rainy season and then cooked fresh to make snail soup, social media has highlighted ways of processing and drying snails, which allows for longer shelf life. Such post-production knowledge is key in helping agripreneurs capture more value for their produce—instead of exporting time-bound perishable products, producers can time the market for best prices, gain more value, and earn more in the post-production cycle.



5
Advisory services in social agriculture make jobs in the sector more profitable.

"In addition to my farm, I provide consulting services on social media for entrepreneurs wishing to set up their farms in Senegal. My team consists of a hydraulic engineer, a financial analyst, and an agricultural technician … To date, we have accompanied five farms on their journey since the beginning of 2021."

Young male agripreneur (farmer and expertise provider) (Dakar and Toubacouta)

Agriculture can be perceived as a risky journey, especially for new agripreneurs. There are numerous challenges including, but not limited to, land acquisition, suitability of the soil, water and crops, scams, access to funding, human resources, and market volatility. The learning curve is a significant factor in their success. Therefore, young agripreneurs eager to embark in this sector rely on social media for expertise sharing and support throughout their journey to benefit from other people's experiences. Often, at least the initial advice is free or "crowdsourced."

This demand for knowledge has given rise to new entrepreneurship and employment opportunities including expertise and consulting services, either provided by farmers themselves or specialized consulting boutiques. The support they provide ranges from land acquisition, staff recruitment and management, soil and water analysis, extension services and support to marketing. The service providers use online posts (texts, visuals, testimonies) and webinars to tease their knowledge and advertise their services.

The founder of Fraisen, a major actor in the strawberry value chain in Senegal, recalled going from sharing online tips to building an expertise and services provision business (input selling, extension services and support to marketing). This business is now active in seven African countries. Now he feels they do not need to advertise—customers and learners come to him through social media or word of mouth.

This growth in advisory services through social agriculture was echoed in our Kenya research where social media was used to advertise consultancy visits by agronomists, training sessions on farms, or online and offline courses. Consultancy visits, training sessions, and sometimes courses are important sources of income for some agronomists and farmers.[34]

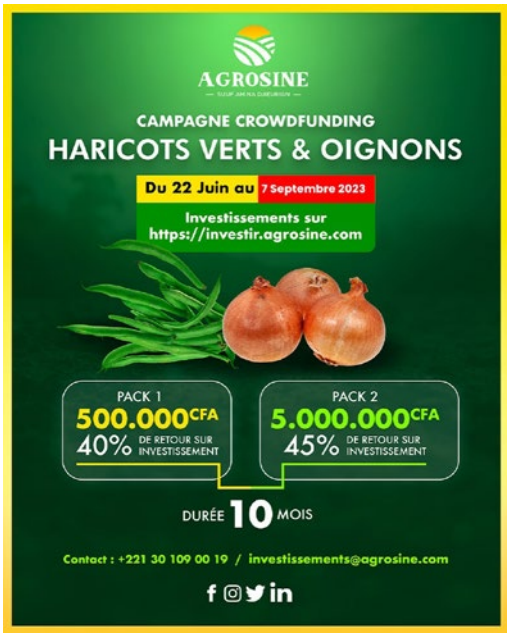
34 Caribou Digital, Kilimo Source, Learn.ink, and Habitus Insight, "Social Agriculture-Project Page."

6
Crowdfunding and other financial practices are gaining popularity in social agriculture.

"After securing a big contract via Facebook, I went to the bank to secure a loan, but the guarantee they were asking for was higher than the loan itself. So I turned towards social media to crowdfund; it doesn't require guarantees and the fund raising is fast."

Male agripreneur (farmer, aggregator, retailer, fundraiser, influencer) (Dakar, and Northern Senegal)

Access to capital is one of the key challenges for young agripreneurs. At the post-production stage, machinery (e.g., tractors) is expensive. Agripreneurs don't necessarily have enough funds or aren't able to obtain loans from banks to give their atypical or/and more risky profile, resorting to self and family funding to start off. To respond to this challenge, one participant, the founder of Agrosine,[35] turned to social media to launch and promote an online crowdfunding initiative and secure funding for their company growth.



Agrosine's crowdfunding campaign and packages.

Social media (LinkedIn, Instagram, Facebook, WhatsApp, and TikTok) are used to promote the crowdfunding campaigns, to rapidly recruit investors and to keep them regularly and easily informed of on-going campaigns' progress. Agrosine also leverages social media influencers to further build trust in Agrosine and share feedback on their experiences as investors. These channels have been successful; in the last 4 years, Agrosine has completed 12 rounds and currently has three new ones, growing their land from 5 to 250 hectares in four years and hiring 50 direct employees.

The use of social media for fundraising including crowdfunding was echoed in our Nigeria and Ghana research, where agripreneurs moved to social media to find financial help in the form of grants or investors. Other agripreneurs we spoke with had received grants from international institutions, including Mastercard Foundation, after being found through their online profiles—in particular LinkedIn but also Twitter. These grants enabled the agripreneurs to buy processing machinery that is expensive and get increased value from their produce by not exporting it before processing.

35 Agrosine, "Agrosine Crowdfunding."

7
The usage of social media at aggregation stage can be powerful but is still nascent in Senegal.

"We need to solve the issue of how to produce enough strawberries to meet demand [for strawberries]; this is why we created the Fraisen network, bringing together producers."

Young male agripreneur (Dakar and Northern Senegal)

While social media is relatively nascent, some agripreneurs interviewed have been using social media at the aggregation stage to identify producers and suppliers, in unstructured value chains[36] (strawberry, bouye, bissap). Two key benefits in doing so are to increase supply of these products and to improve flow of these products

The example of Fraisen illustrates this point. The 34-year-old founder (who says he is "the oldest in the team") leveraged social media to regroup producers who want to start producing strawberries, a nascent but in demand value chain in Senegal. As the quote above illustrates, their challenge is being able to produce enough to respond to the high demand. Through social media, they have been able to grow their network of producers, aggregating a network of 200 women working on the processing and transformation of strawberries as well as 450 members. Another participant, a 35-year-old female agripreneur leverages social media and a web platform, Sunu Produits Locaux,[37] to aggregate and promote Senegalese products (e.g., bouye, tol, ndiorni, bissap) and sell them directly to consumers. However, the experience shared by Sunu is that finding new suppliers remains largely offline—during fairs or from word of mouth—and then brings them on the online platform.

There is another, important, potential benefit of aggregation and that is the "fork-to-farm" approach: leveraging social media to identify the customers before production. The study in Nigeria showed that some agripreneurs use social media to first find customers and identify their demand for products, then find farmers and bring them together (via WhatsApp and Facebook). They finally regroup them (WhatsApp and Facebook) with the aim to buy in bulk and sell these farmers' produce. This fork-to-farm approach, leveraging social media, leads to higher sales and reduction of farmers' post-harvest losses.

36 The initial landscaping suggested that the role of social media at the aggregation stage may depend on the type of value chain. In free market value chains, where aggregation is less structured, agripreneurs sell directly to intermediaries or urban customers, making the use of social media attractive to reach sellers. On the other hand, in more hierarchical value chains such as cereals or tomato, where aggregation is often performed by the agro cooperatives, produce is sold to intermediaries then to established buyers such as state companies.

37 Sunu Produits Locaux, "Notre Concept."

8
There is an untapped opportunity for rural agripreneurs, but they face analog challenges, including lack of digital knowledge, infrastructure, and logistics.

"Overall, selling online is not part of our business practices yet, but it's the future. We need to start selling before harvesting to avoid post-harvest losses as marketing is our main issue … Selling on social media can help us get there and also saves time."

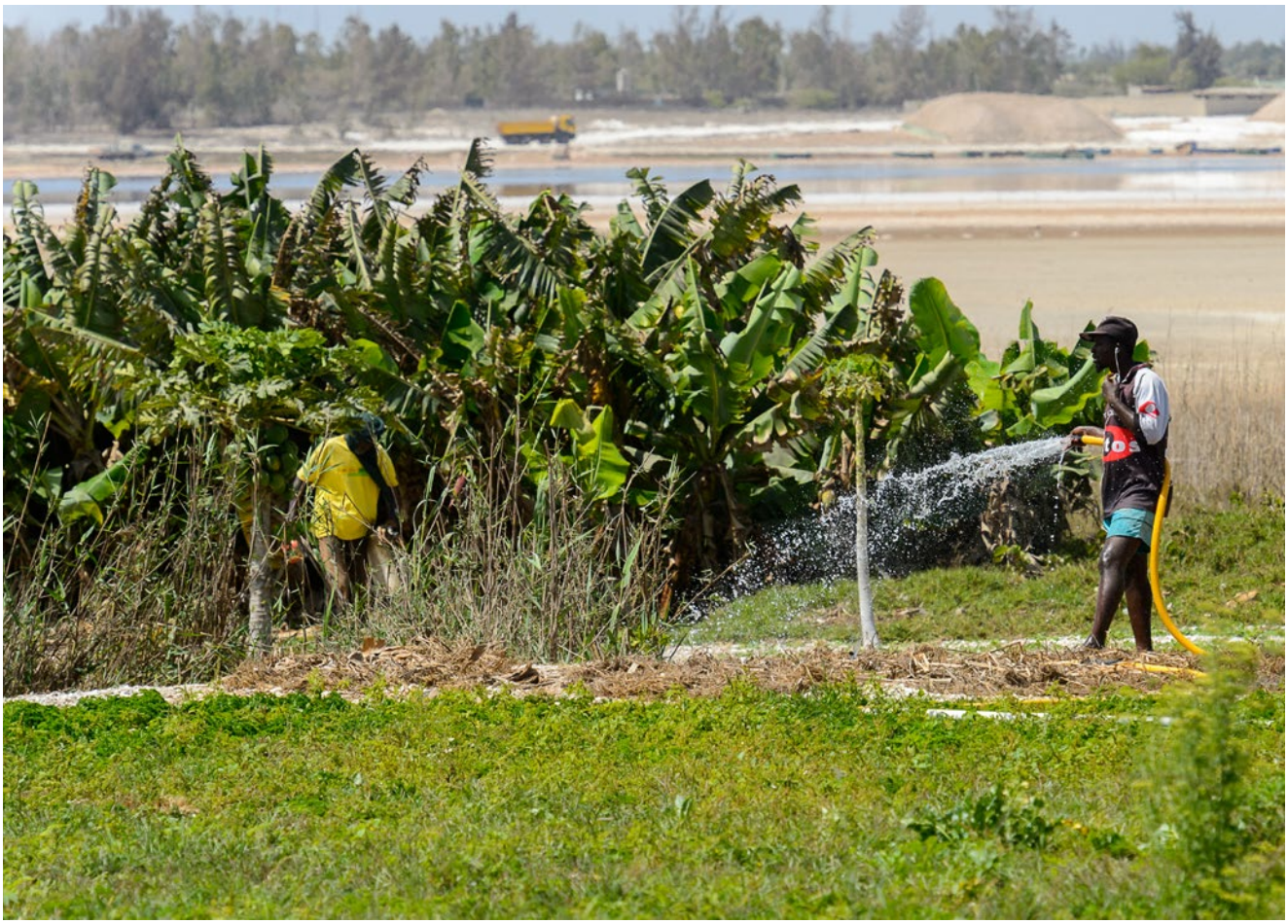
Young male farmer (Mboro)

Interviews in Mboro (120 km from Dakar) found that thus far, social agriculture in rural areas is mainly for pre and production stages of the agricultural value chain. Smallholder farmers use Facebook and WhatsApp groups to get information on inputs and agricultural practices, and to a lesser extent on prices. These groups are initiated or facilitated by government extension officers, agronomists, or cooperatives. However, at the post-production stage, rural agripreneurs still rely heavily on traditional channels such as auctions and open-air markets.

The relative lack of social media use at post-production stages reported by rural agripreneurs arises for a number of reasons. Most of the rural agripreneurs we worked with shared that they do not know how to advertise and sell online and what content they can trust, and/or they do not possess sufficient digital literacy skills. Further, social media requires minimum skills to be a *consumer* of content, but requires more skills to be a *producer* of content, so at most many agripreneurs may find it easier to consume content rather than search for potential buyers. Rural agripreneurs can also face poor connectivity or high data costs, particularly relative to earnings.

Finally, one of the biggest challenges is logistics. Even if a buyer can be identified through social media and is deemed trustworthy, the rural seller has to find reliable and safe transportation for goods, particularly given road conditions. One of the participants mentioned that she moved her production unit from Zinguinchor to Pikine (close to the marché Syndicat for fruit and vegetables), respectively ~500km and 12km from Dakar, to reduce her losses while transporting her finished products. The COVID ban on inter-city movement accelerated that move of her production unit too. During the expert online discussion, the issue of logistics was mentioned several times by experts. Social media can be a powerful tool in marketing and sales, but when the products are far away, they still need to be transported; social media hasn't been as helpful at that stage of the value chain. The ANCAR (L'Agence nationale de conseil agricole et rural) dound that social media is really helpful for sharing of information but logistics is the biggest challenge. They have had some success, connecting two far away zones of Kedougou and Niayes (723km) transporting onions.

The Nigeria research highlighted that, at post-production, extra investment was needed to support the cost of logistics, limiting the use of social media in rural areas, particularly with low-income demographics.



9
Women social agripreneurs have to develop specific strategies to counter social media's intrusiveness.

"I had to associate myself with my brand to attract more attention to my business. Compared to men, I feel like my professional social media posts receive less attention than my personal posts."

Young female agripreneur (farmer, aggregator)

Women we spoke with were as positive as men about the role of social media in their company's growth. However, they did acknowledge that they needed to develop specific strategies to protect themselves as women from the intrusiveness of social media. One participant mentioned that she felt that she got more traction when posting photos of herself, rather than her business, due to Instagram's algorithms. Another participant mentioned unwanted advances, vulgar behavior, and harassment such as receiving pictures of a sexual nature and unsolicited late-night texts. As with women's presence online in other platform livelihoods,[38] female participants struggled to find a balance between providing customer service and cutting the conversations in situations where a line have not yet een crossed. They have developed strategies to navigate this tension on social media, for example by posting what they consider "decent" photos, such as selfies with their produce when selling.

38 Caribou Digital and Qhala, "Platform Livelihoods Knowledge Map: Gender."

10
Agripreneurs navigate multiple trust issues, including financial, in social agriculture.

"I have to be the contact online. I'm afraid that the person doing the social networks may not have the same passion, and/or even the same patience, for the client. And one negative review can destroy the work of several years in an hour."

Young female agripreneur (processor and seller) (Dakar)

A high level of trust is needed in social agriculture. First, one must trust those hired specifically for a social media role. Agripreneurs, particularly those in their early stages or in smaller-scale companies, mentioned that handling social media can be time-consuming. The activities, including creating content, engaging with potential customers, and following up with orders and deliveries on different platforms, require time and resources. Most of these companies do not have non-technical staff to dedicate these activities to or are unwilling to outsource due to trust issues related to payment and the care their online audience needs. This echoed our other studies in Kenya, Ghana and Nigeria, where social agriculturists mentioned spending 15 to 20 hours per day online to ensure strong presence, post relevant content, and increase their followers. However, as the quote above suggests, even though hiring external social media managers is becoming popular, agripreneurs in Senegal also feared that letting other people manage their platforms could tarnish the good reputation they have built and decrease customers' satisfaction.

There is also a worry that their social media accounts or handles will be stolen from them. This is linked to a second trust issue, related to the reputational risk, that might affect their brand and image resulting from negative comments, customer dissatisfaction, controversies, or employee behavior. One company, using social media for crowdfunding, recalled a situation where there was a payment delay for clients that had invested in their recent agricultural campaign. The client negatively tweeted about his experience, which could have strongly impacted their fundraising efforts and their company's growth. However, their community management team was proactive in dealing with the situation, with the client removing the message and posting a more positive message later. Another poultry company respondent mentioned that at the beginning, the marketing manager oversaw social media accounts and replied harshly to a negative

online comment from a client, drawing attention. After that, they decided to hire external community management to handle their social media, except WhatsApp. Another processor (quoted above) made the recommendation to resolve issues privately and not be tempted into arguing online.

A third trust issue is with the broader online environment. One aspect of this is plagiarism and fake profiles. The founder of Fraisen noted that *"this intellectual property theft happens often, using our images as theirs."* Another is that of scams. A few participants mentioned that when they started they had been cheated and losing money. Financial fraud was considered a risk, though none of the study participants had experienced it. Dealing with all these issues requires a specific skill set.

In our Nigeria research, we found active processes in place to manage verification and trust. One method is to verify a potential member's involvement in the value chain and then validate the business or project via video calls or physical meetings. Many group administrators also charge a small registration fee of 2,000 or 3,000 Naira (US$2.50 or 5) to people who want to join the groups. They will then be given badges or certificates, which mark them as "verified" members. Other agripreneurs with highly visible and trustworthy profiles (influencers) are leveraging their position to facilitate verification processes and produce their own forms of certification for members in their social media groups. 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. They help foster a safer and more trusting business environment by ensuring authenticity and vetting members to facilitate transactions and limit the risk of payment fraud. This was noted specifically in relation to WhatsApp groups in the study, though it may well occur on other platforms. Sharing such methods might provide guidelines in social agriculture in Senegal.

Best practices and recommendations

There are two sets of recommendations to conclude this report: first, best practices suggested by agripreneurs themselves and, second, ways stakeholders can support social agripreneurs.

Participants suggested several best practices for those starting out on their social agriculture journey. However, agripreneurs in the social space cannot achieve success on their own; they need support from a community of stakeholders. The second set of recommendations is for relevant stakeholders who could accelerate the use of social agriculture at the post-production stage in Senegal to benefit agripreneurs. It is not exhaustive, but it does provide insights into initial stakeholders with whom the Mastercard Foundation and other funders could collaborate to achieve their agriculture livelihoods strategy for Senegalese youth.

Best practices for social agripreneurs

These best practices were described by participants.

1. **Choose the right social media platform depending on needs and audience**. Participants found Instagram valuable for communicating directly with business owners as well as converting customers (as opposed to Facebook). LinkedIn was mentioned as a good channel to communicate with traditional retailers and formal companies. Facebook's community aspect (for example, discussing business challenges) was seen as valuable. Each platform has its own strengths, but the crowd also keeps moving, so one has to keep up to date.
2. **Get into a routine of posting consistently.** Posting on a schedule (e.g., at beginning and end of the week) helps with visibility and algorithms.
3. **Understand and stay updated on the platform's algorithm.** Participants understood that Facebook and Instagram often change their algorithms depending on the type of content they want to promote. One agripreneur mentioned that she consistently follows pages and likes posts on funding opportunities, allowing her to get the latest news on the topic.
4. **Be creative, yet relevant.** Several interviewees mentioned they needed to learn to produce nice infographics, pictures, and videos to engage their audience. They also need to know what is more relevant and appealing to their online audience to build interest. While products, customer testimonies, and advertisements were important, agripreneurs also recognized the need to be "accessible." Not every post needs to be about success; showing failure is also important. All these strategies resulted in higher followers and views.
5. **Partner with influencers.** Participants mentioned intentional partnerships with influencers including renowned chefs to promote their products or their crowdfunding campaigns. This includes asking and paying others to post, reshare, and comment.
6. **Conduct effective due diligence before working further with online contacts**. Vetting contacts helps avoid scams and fraud. One interviewee shared her due diligence method of site visits and meeting in person before starting business.
7. **Know when and how to delegate your social media activities.** Delegating appeared to be the most fraught process. While agripreneurs struggled with social media activity, they were also careful about who to delegate to. Consider more investment (including financial resources) for hiring employees if possible or relevant (*"What is the trade-off of employing your first member of staff?"*).

Recommendation	Lead actor	Key supporters
Cooperatives should train members on social media use for post-production (including information exchange, marketing, advertising, aggregation, and transactions), as well as general social agriculture/social media use (safety online, reducing access costs, etc.)	Farmer cooperatives	Training organizations NGOs Government Donor organizations for initial funding (should become self-sustaining) Influencers Agripreneurs
Support access for better connectivity, especially in rural areas.	Government	Mobile network operators ICT/digital access NGOs
Extend functionalities of social media (e.g., WhatsApp for agriculture?) and protection mechanisms.	Platforms	Government NGOs Agripreneurs
Encourage large aggregators to create and facilitate Facebook and WhatsApp groups linking buyers, including processors, and smallholder farmers.	Large agriculture companies	Platforms Cooperatives NGOs Agripreneurs
Support access to delivery logistics in rural areas.	Ag delivery companies	Cooperatives NGOs Agripreneurs
Strengthen internal government knowledge on the value of media for social agriculture.	Ministry of Agriculture Marche d'Interet National	Cooperatives NGOs Agripreneurs Donors
Assist agripreneurs with payments knowledge, safety, and other expertise and training on digital financial services.	Digital financial service providers	Cooperatives NGOs for training

Table 4 ▲
Recommendations for social agriculture in Senegal

Despite challenges and limitations (e.g., efforts, losses, fraud, harassment, etc.), the study participants—individuals and organizations well placed to discuss their already strong use of social agriculture—unquestionably felt the benefits of using social media outweigh the negative experiences. These 15 individuals are not representative of the entirety of the agriculture sector in Senegal, which faces broader challenges outside of the scope of this report. However, it is clear that their experiences illustrate how some youth have been organically integrating social media to improve their agriculture practices, including at the post-production stage, enabling agripreneurs to retain more value within the country and drive more sustainable livelihoods in Senegal.

References

Agrosine. "Agrosine Crowdfunding." https://investir.agrosine.sn/vues/index.php.

ANSD [Agence nationale de la Statistique et de la Démographie]. "Enquête Nationale Sur l'Emploi Au Sénégal, 2022, Quatriéme Trimestre 2022." June 27, 2023. https://anads.ansd.sn/index.php/catalog/281.

Caribou Digital and Qhala. "Platform Livelihoods Knowledge Map: Gender." October 2020. https://www.platformlivelihoods.com/gender/.

E2B Consulting & Training. "L'utilisation Des Réseaux Sociaux Au Sénégal, Les Chiffres Clés En 2021." October 25, 2021. https://www.e2b-consulting.com/en/reseaux-sociaux-au-senegal/.

FAO [Food and Agriculture Organization of the UN]. "Agricultural Value Chain Development: Threat or Opportunity for Women's Employment?" Gender and Rural Employment Policy Brief #4. 2010. https://www.fao.org/3/i2008e/i2008e04.pdf.

Fraisen. https://fraisen.net.

Grolleaud, Michel. "Post-Harvest System and Food Losses." In *Post-Harvest Losses: Discovering the Full Story: Overview of the Phenomenon of Losses During the Post-Harvest System*. Rome, Italy: FAO, 2001. https://www.fao.org/3/ac301e/AC301e03.htm#Chapter%202%20-%20Post-harvest%20System%20and%20Food%20Losses.

GSMA. *State of the Industry Report on Mobile Money 2023*. 2023. https://www.gsma.com/sotir/.

INSEE [Institut national de la statistique et des études économiques]. "Unemployed Person (According to the International Labour Organization (ILO) Definition)." June 6, 2023. https://www.insee.fr/en/metadonnees/definition/c1129.

ITU [International Telecommunication Union]. "Individuals Using the Internet (% of Population)." World Bank Data Bank, 2021. https://data.worldbank.org/indicator/IT.NET.USER.ZS.

Jimbira, Mohamed Sakho, and Hadj Bangali Cissé. "L'usage d'internet Dans Les Classes Populaires Sénégalaises. Le Cas de Marabouts, Marchands Ambulants et Femmes de Ménage." *Réseaux* 2–3, no. 208–209 (2018): 173–93. https://doi.org/10.3917/res.208.0173.

l'Équipe FIDA Sénégal. *L'avenir de l'agriculture Au Sénégal, 2030–2063*. International Fund for Agricultural Development (IFAD), 2020. https://www.ifad.org/documents/38714170/43334911/Sénégal_IFAD+Futur+de+l%27agri.pdf/6ec32c0d-92c5-1038-0ba9-5bbdc0d8f83e?t=1625228825636.

MAERSA [Ministère de l'Agriculture, de l'Equipement Rural et de la Souveraineté Alimentaire]. "Atelier d'élaboration de la Stratégie de souveraineté alimentaire du Sénégal." November 26, 2022. https://agriculture.gouv.sn/atelier-delaboration-de-la-strategie-de-souverainete-alimentaire-du-senegal/.

Marketlinks. "Value Chain Governance." Value Chain Development Wiki. https://www.marketlinks.org/good-practice-center/value-chain-wiki/value-chain-governance.

Mohamed, Djaziri. "Chiffres d'Internet et Des Réseaux Sociaux Au Sénégal En 2023." Digital Discovery, February 7, 2023. https://www.digital-discovery.tn/chiffres-internet-reseaux-sociaux-senegal-2023/.

Randrianasolo, Dina. "Africa's Best Hope for Inclusive Growth: Employment Opportunities in Agriculture in Africa." Mastercard Foundation, March 9, 2016. https://mastercardfdn.org/africas-best-hope-for-inclusive-growth/.

Schoemaker, Emrys, Reem Talhouk, Catherine Kamanu, Eoghan McDonaugh, Chris McDonaugh, Eliza Casey, Adam Wills, Finn Richardson, and Jonathan Donner. "Social Agriculture: Examining the Affordances of Social Media for Agricultural Practices." In *ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS)*, 476–89. New York: Association for Computing Machinery, 2022. https://doi.org/10.1145/3530190.3534806.

Sunu Produits Locaux. "Notre Concept." https://sunuproduitslocaux.com/.

UNESCO Institute for Statistics. "Literacy Rate, Adult Total (% of People Ages 15 and Above)." World Bank Data Bank, October 24, 2022. https://data.worldbank.org/indicator/SE.ADT.LITR.ZS.

Appendices

Appendix A:
List of interviewees

Interviewees were divided into two groups:

The first group lived and worked in urban or peri-urban areas (with farms and processing units located either in urban, peri-urban, or rural areas). These agripreneurs were **between 25 and 35 years old, had completed secondary education and/or master's level, were tech-savvy**, and had a relatively good understanding of social networks. They also had the means to start their business using self-funding and/or funding from relatives. Most of these participants did not have initial training in the agriculture sector. These participants decided to move into agriculture due a variety of reasons, including its perceived attractiveness and profitability, a passion for the sector stemming from childhood memories, and search for new opportunities.

Profiles of the agripreneurs in the participant group include:

- A male farm and agriculture expertise provider, 29 years old, living and operating in Dakar with a farm located in Toubakouta (230 km from Dakar).
- A female agro-processor, 41 years old, located in Dakar.
- A male strawberry farmer, processor, wholesaler, and retailer, 34 years old, living and operating in Dakar with a farm located in Bayakh. (~50km from Dakar)
- A female farmer, agro-processor, and retailer, 29 years old, living and operating in Dakar with a farm located near Joal (120 km from Dakar).
- A male storage and logistics provider in the fish sector (previously in horticulture), 30 years old, living and operating in Dakar.
- A male large-scale farmer, retailer, and crowdfunder, 29 years old, living and operating in Dakar with farm located around the Senegal River Valley (300 km from Dakar).
- A male poultry farmer, 31 years old, living and operating in Dakar with a farm located in Dakar's peri-urban area.

The **second group lived in rural areas** (in and around Mboro, 120 km from Dakar), were **mainly smallholder farmers in horticulture, aged between 25 and 35 years, with different levels of education and literacy** (from illiterate to master's degree). They were active in agriculture (horticulture) because it is the main livelihood in their area.

In more detail, the participants comprised:

Table 5 ▾
Details of interviewees

	Category of participant	Participant's company (with permission)	Gender	Age	Location
1	Farm manager	Foroba SAS	F	29	Toubacouta, Fatick
2	Farmer, processor, expertise and advisory provider, retailer	Fraisen	M	34	Bayakh (Thies region)
3	Farmer, processor, and retailer	Mandabio	F	25–30	Mbodiene
4	Farmer, influencer, and fundraiser	Agrosine	M	29	Saint Louis
5	Logistics and storage provider	Verdura	F	30	Dakar
6	Producer and retailer	Sunu Produits Locaux	F	25–30	Dakar
7	Farmer (poultry)	Maana Productions	M	25–30	Dakar
8	Farmer (poultry)	Mbaye Faye	M	25–30	Mboro
9	Horticulture farmer and retailer	Siley Sow	M	25–30	Mboro
10	Representative from ANCAR (Agence Nationale de Conseil Agricole et Rural)	Momar Dieng	M	25–30	Mboro
11	Farmer	Mamadou Ka	M	25–35	Mboro
12	Farmer	Abdoulaye Diop	M	25–35	Mboro
13	Farmer	n/a	F	25–30	Mboro
14	WhatsApp poultry group administrator	n/a	undisclosed	25–30	Dakar
15	Agro-processor and retailer	Délices Casamançaises	F	41	Dakar

Appendix B: Discussion guide for interviewees

The purpose of this interview guide is to:

- Document interviewees' experience with social media platforms, their functionalities as these relate to their post-production activities (aggregation and logistics, processing, and marketing), and how these might be different to more traditional means of information and communication.
- Map out how the usage of social media platforms has impacted the interviewees' livelihoods and the overall configuration of the value chain.
- Understand what skills and overall support agripreneurs need to optimize their social media use.

In order to achieve the above, we will interview 10–15 participants (equal split of men and women) who are a sample of:

1. Logistics and storage providers
2. Agro-processors
3. Wholesalers and retailers
4. Farmers (who cover the complete value chain)
5. Input suppliers (optional)

Age range: 18–35 years old

Location: Dakar and surrounding areas

Value chain: Horticulture and poultry

Explainer to participants

In partnership with Mastercard Foundation to support their Young Africa Works program, we are conducting research on how agricultural entrepreneurs are leveraging digital platforms including WhatsApp, Facebook, Instagram, and TikTok to sustain and grow their livelihoods. We are interested in your experiences using these digital tools. Following research in Kenya, Ghana, and Nigeria, we are trying to build a more accurate picture of agripreneurs' experience, how the online platforms improve the experience, the challenges of using them. and the skills and support needed to optimize that use. 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 and policies are designed.

The process today will be Informal and open-ended. Each interview will last 45 minutes to 1 hour. 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.

Verbal consent

Please verbally let me know that you agree to this conversation being recorded. Recording this interview will allow us to listen to you fully. We will ensure that your name is kept anonymous and you can withdraw from the research process at any point.

General Profile questions:

Objective: Map demographics and smartphone and social media usage of agripreneurs

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

Your value chain and challenges questions:

Objective: Understand their post-production activities and the challenges they face.

5 Can you provide more information on your agricultural activities (name of the farm/platform location (personal/agribusiness), role, location, years of activities)

6 Can you please describe your overall activities (focusing on post-production), including actors, systems, and platforms?

7 What are your top 3 challenges at the post-production stage (prompt: in terms of efficiency and profitability …?)

8 How have you been able to solve for these challenges?

Use of social media, pros and cons, and impact on the agricultural livelihood questions:

Objective: Understand how and why they use social media, how it compares with traditional and other digital channels and the impact on their livelihoods.

9 How did you first become aware of the business uses of social media? (prompt: a friend, a parent, a radio ad?)

10 Tell us when and why did you start using social media for your agricultural activities.

11 For each stage, which social media do you use and why?
- a As a logistic and storage provider
- b as a retailer or wholesaler
- c As a processor

12 How do they compare to other alternatives in terms of costs, convenience, staffing needs:
- a compared to traditional and physical channels
- b compared to digital farming applications or platforms
- c compared to farmers' cooperatives …?

13 Do social media complement more traditional channels or do they replace them, according to you? Can you tell us a story of how social media has replaced traditional channels?

14 Did social media change what you were doing before in agriculture and how? (learning, advice online you applied, networking opportunities …)

15 What has been the impact of the use of social media on your business and livelihood, and the livelihoods of those around you (earnings, security, mobility, profitability, business costs, staffing, ability to pay smallholder farmers more …)?
   a As a woman, do you see a specific impact on your business, if so, please share how and why?

16 Share a positive and a negative social media business experience, and how has it affected your business?

17 To what extent is SM critical to your agricultural activities?
   a What was the impact of the recent internet outage and social media restriction on your activities and income? Did you have alternative options to rely on?

Platform use questions:

Objective: Understand the role social media groups and agricultural influencers and assess their impact on agripreneurs' livelihoods and their areas of improvement.

18 Are you a member of any agriculture-related groups on social media platforms (e.g., Facebook, Telegram, WhatsApp groups) or follow/subscribe to any social media agriculture/agribusiness-related accounts/influencers/channels?
   a If so, please name them and the platforms on which you are active?
   b Why do you find them useful? And how did it impact your livelihood?
   c What can these platforms improve?

19 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/As, live videos, sales, and badges]
   a Why? How can it be improved?

Challenges using social media, skills, and support needed

Objective: Understand the challenges and risks using social agriculture (with a focus on gender) and the skills and support needed to optimize its impact.

20 What strategies do you employ in conducting business on social media for your agribusiness, why and how?

21 What are the challenges and risks you face using social media for your agribusiness (do not cite: trust, lack of time to create content, building the brand, posting regularly, etc.)?

22 As a woman, are there specific challenges and risks are you facing using social media for your business (do not cite: harassment …)?

23 How do you mitigate them?

24 What type of skills and training do you think you need to optimize the impact of social media on your business?

25 Would you like any specific features in place in social media that would help your job?
   a Specific features you would like, as a woman,

26 How could this training and upskilling be best delivered to you and other agripreneurs?
   a Specific skills you would like to be trained on, as a woman

27 What support is needed (Policy, social media platforms ..) to optimize the impact of social agriculture?
   a Specific support you would like to see for you and your fellow women in the agri-business.

Final (wrap-up)

28 Is there anything else you would like to add concerning social media in agriculture?

29 Are there any questions you would like to ask me? What else do you think I should ask other interviewees? Are there others you think I should speak to and why?

30 If you were to recommend a friend to use social media for their agribuisness, what would you tell them? Do you have recommendations of people to speak with?

Thank you so much for your time.

Appendix C: Invitees for high-level online discussion

In July 2023, the research team organized an online discussion conducted in French to discuss preliminary findings and invite feedback. This included the following participants, in addition to the research team:

Position	Type of organization
Program lead, digital	Donor organization with a Senegal country office
Founder	Training organization
Head of digital	Training organization
Founder	Social agriculturist/farmer, processor, retailer
Founder	Social agriculturist/farmer, crowdfunder, wholesaler, retailer
Founder	Social agriculturist/agro-processor
Founder	Logistics
Founder	Farmer and retailer
Founder	Public company/logistics and storage provider
Director	Policy institution/Ministry of Agriculture
Director	Policy institution/Ministry of Agriculture

Discussants were positive about the timeliness of the research given the rapid use of social media. Further research was discussed, notably around financing solutions and the potential role of social media, the limitations of social media, notably at the logistics and aggregation stages of the agricultural value chain, and possible interventions by donors and key actors to support agripreneurs in leveraging social media for the benefit of their productivity and business.

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November 2023 • 1.0