

Original Research Article

Effects of social media on youth involvement in livestock production in Oyo State, Nigeria

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Abstract

Youths are the highest consumers of ICT and they are currently using Social Media (SM) to stir interest, ask questions, and solve constraints in agricultural enterprises. Youths' participation in livestock enterprises through social media is increasing because they are not capital-intensive and can be practiced in their residences. Hence, the effects of SM on youth involvement in livestock production (LP) were investigated. A multistage sampling procedure was used to select 150 respondents, and a questionnaire was used for data collection and analysis using percentages, mean, standard deviation Pearson Product Moment Correlation (PPMC), and t-test at $p \leq 0.05$.

Findings revealed that respondents had 1–5 years of experience (47.3%), were efficient in computer literacy (53.3%), and involved in LP before SM utilisation (6.7%). Websites ($\bar{X} = 1.83$), YouTube ($\bar{X} = 1.69$) and WhatsApp ($\bar{X} = 1.65$) were the most available SM platforms. Many respondents (88.9%) were operating on a low scale of LP, while a few (11.1%) were on a medium scale before SM utilisation. The deployment of SM increased respondents with a medium scale of LP (from 11.1% to 53.3%) and decreased respondents with a low scale of LP (from 88.9% to 30.0%), while 10.7% of respondents were characterised by a large scale of LP. Power supply ($\bar{X} = 2.51$) and cost of data ($\bar{X} = 2.43$) were the major challenges to the use of SM for LP. A significant relationship ($r = 0.531$, $p = 0.025$) existed between the use of SM and the level of LP. Significant differences existed between the level of LP before (0.804 ± 1.021) and after the use (1.340 ± 1.000) of SM. Hence, SM boosted youths' involvement in agriculture, raised LP, and consequently decreased unemployment rates. Solar energy, cheap data, and favourable financial schemes for young farmers should be made available.

Keywords: Fish farming; social media utilisation; livestock production; poultry farming; rabbit farming; WhatsApp in livestock production; youths in livestock production

INTRODUCTION

Agriculture is one of the major and widely profitable enterprises in the world at large (Adelanke, 2019) and it is the engine of growth for most developing countries, including Nigeria. Aside from the provision of food and foreign exchange, its potential for job creation cannot be overstated; however, in Nigeria, the enterprise is left to the elderly (Okiror and Otabong, 2015), despite the high rate of youth unemployment (World Bank, 2019).

Meanwhile, youths have been reported to be the engine room that propels any society to greater heights (Sambo and Anpe, 2017). They are generally noted for their unique capabilities and could constitute a formidable force in agricultural production activities in any nation.

In Nigeria, according to Agumagu et al. (2017), youth participation in agriculture is a means to sustainable agricultural production and reduction

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of the unemployment rate. Thus, it is expected that youths use their potential to contribute meaningfully to agricultural production, particularly at this point in time when most rural households involved in agriculture-based livelihoods are elderly men and women, and the nation's needs to replace the ageing farming population for sustainable agricultural development. Similarly, Agba et al. (2017) stated that youths have the potential to overcome some of the major constraints to expanding agricultural production in the country because they are often more open to new ideas and practices than adult farmers. In addition, exposure of youths to modern technologies that give them access to information around the world will go a long way to changing their perception of agriculture, especially with the evolution of internet-based communication tools (social media), which are increasing youth's involvement in agricultural enterprises (crop and livestock). The increased use of social media (SM) among youths for discussion, interaction, and sharing of information implies that SM has the potential for agricultural extension. Corroborating this assertion, Yekinni and Akinbile (2014) reported that the application of ICTs has been noted to be capable of amplifying the activities of the few agricultural extension agents to achieve the development goal. Thus, the thriving of agriculture requires prompt and efficient extension service in order to meet the contemporary challenges of agricultural production globally, particularly social media.

From the foregoing, Oso (2002) opined that for the nation as a whole to enjoy the benefits of agriculture, the youths have to be effectively mobilised through communication, which is an important resource to any social organisation. Gans (2003) noted that when farmers have access to relevant information or messages, they will not only be informed but also foster in them the right kind of attitude change through knowledge acquisition and communication. Information is essential for facilitating agricultural and rural development and bringing about social and economic change.

Information and communication technologies are a diverse set of technological tools and resources used to communicate, to create, disseminate, store, learn, and manage information (Alkamel and Chathaiwale, 2018). These technologies include computers, the Internet, social media (SM), broadcasting technologies (radio and television), and multimedia. Among the vast variety of online tools which are available for communication, social networking sites (SNS) have become the most popular and attractive tools for connecting people throughout the world (Aghazamani 2010).

Individuals and organisations create profiles, share, and exchange information on various activities and interests through these platforms. An interesting aspect of social media is that it is not limited to desktop or laptop computers but can be accessed through mobile applications and smartphones, making it very accessible and easy to use. Examples of these SM platforms both on the web and in mobile applications include Facebook, Twitter, YouTube, WhatsApp, Instagram, etc. As long as there is an Internet connection, all SM platforms can be easily accessed. SM helps in disseminating the right information about farming practices on a daily basis. SM platforms have allowed the younger generation to showcase what they love about agriculture while also sharing a positive depiction of farm life. Agriculturalists can interact and glean new ideas that will help them improve their agricultural activities. According to Lathiya et al. (2015), knowledge shared can be used and re-used repeatedly by a large number of people at the same time, transformed with new ideas added to it, so that the output is in a stronger form than when it first arrived. Numerous studies have shown various aspects of SM use in agriculture; for example, Abuta et al. (2021) established the utilisation of SM among arable crop farmers in Imo state, Nigeria. Mamgain et al. (2020) also discovered the utilisation of SM (Whatsapp, Facebook, and YouTube) for information delivery and sharing across different agricultural subsectors (crop, horticultural, dairy, and goat farming) in India. The findings further discovered that SM enhanced and strengthened the relationships of agri-based communities and helped rural workers combat the segregation created by their work. Also Idu et al. (2022) reported that age, education, farm experience, income, and sex significantly influence the usage of SM by youth in agriculture. The use of SM (WhatsApp and Instagram) in the marketing of agricultural products was reported to significantly influence cost reduction and enhance efficiency in marketing as well as the turnover of farmers through increased demand for agricultural products by Inegbedion et al. (2020).

Youth are the highest consumers of ICT and the utilisation of SM is more prominent amongst them. Young people everywhere are key agents for social change, economic development, and technological innovation. They are currently embracing SM to stir interest, ask questions and solve certain constraints encountered in their various agricultural enterprises i.e. crops and livestock production. However, livestock farming, with a focus on rabbit, poultry, and fish farming, is less capital-intensive than other livestock and crop enterprises, making it suitable for young

people who are always short on funds. In addition, they have embraced these enterprises due to the fact that these can be practiced in their residences. Training is also being done via SM because it makes it easier for agricultural facilitators, no matter where they are located, to reach the trainees through various SM platforms. With the popularity of SM among youths, it is expected that its utilisation in livestock production will increase youth's involvement in the enterprise, with a consequent increase in livestock production and income. Given the foregoing, there is a need to ascertain the effect of SM on youth involvement in livestock production in Oyo State. The specific objectives of the study were to: describe the personal characteristics of respondents involved in livestock production; ascertain the level of livestock production before and after the use of SM; ascertain the livestock production-related use of SM; identify the challenges militating against the use of SM for livestock production; examine the level of youth involvement in livestock production; and determine the perceived effects of SM use on youths' involvement in livestock production. The hypotheses of the study stated that utilisation of SM and constraints to utilisation of SM by youths have no significant influence on livestock production and the level of livestock production does not differ significantly before and after the use of SM by youths.

MATERIAL AND METHODS

The study was carried out in Oyo State. It lies between latitude 7°N and 9°N and longitude 2°E and 4°E, and has a land area of about 42,862 square kilometres. The state comprises thirty-three local government areas (LGAs) with two distinct climate seasons, namely: wet and dry seasons. The vegetation of Oyo State ranges from rainforest to derived savannah interspersed with trees covering the northern part of the state. Food crops grown include tomato, maize, yam, cassava, and pepper whereas cocoa, plantain, oil palm, and kola nut form the bulk of the cash crops, while livestock such as cattle, sheep, goats, pigs, poultry, etc. can be reared in the area.

A purposive sampling technique was used to select three different groups (i.e., poultry, fish, and rabbit farming) of livestock farmers because they constitute the common livestock production in the study area, coupled with the high involvement of youths, and the establishment of identifiable social media groups such as WhatsApp platforms (e.g., fish farmers, poultry farmers, and rabbit farming). The estimated numbers of farmers in each of the livestock groups were ascertained (poultry – 353, fish – 300, and rabbit – 113). Random sampling was used to select 20% of the members in each

of the livestock groups to give a total of 150 respondents (i.e. poultry– 70, fish - 57, and rabbit – 23). The major variables of the study were measured as follows:

Livestock production-related use of social media was measured on a 3-point scale of "always", "occasionally" and "never", which were respectively assigned scores of 2, 1 and 0. The mean scores for each use were computed and used to determine the important purposes for which social media is used.

Constraints to the use of social media were measured on a 3-point scale of "severe constraint", "mild constraint" and "not a constraint", and were respectively assigned scores of 2, 1 and 0. The mean scores for each of the items were obtained and used to rank them in order of severity.

The level of livestock production was measured in line with the quantity of animal products produced by the respondents: live weight of rabbit (kg) for rabbit farmers; fish weight (kg) for fish farmers; eggs (crates) and chicken weight (kg) for poultry farmers; and the number of production/sales per year. The quantity of animal products produced was thereafter multiplied by the number of products produced, and the values for each livestock category were standardised to unify the scores. The mean score was obtained and used to categorise them into high, medium, and low production levels.

The level of youth involvement in livestock production was measured by ascertaining the extent to which the respondents were involved in livestock production activities. It was measured on a 3-point scale of "frequently", "occasionally", and "rarely", and respectively assigned scores of 3, 2, and 1. The composite score of the various livestock production activities was obtained and the mean score was used to categorise the respondents into high and low-level involvement in livestock production.

A Likert-type scale was used to determine the effects of social media use on youths' involvement in livestock production. The scale ranged from not at all (0), very little (1), little (2), large (3), and very large (4). Scores for each item were pooled and a composite score was derived. The mean score (22.8) was used to categorise the effect of social media on youth involvement in livestock production into low and high levels, such that respondents with scores below 22.8 were categorised as low level, while respondents with scores within and above 22.8 were considered as having a high level of involvement.

RESULTS AND DISCUSSION

Personal characteristics of respondents

Results in Table 1 show that most (42.0%) of the respondents fell between 31 and 35 years of age, while the mean age was 35.05 ± 8.44 years. This rightly categorises them as youth, characterised by their vivacity and capability to engage in economic activities to earn a living for themselves and their families. Youth are more technologically savvy than any other age group, and

Table 1. Personal characteristics of respondents

Variables	Frequency	Percentage
Sex		
Male	136	90.7
Female	14	9.3
Age		
<20	3	2.0
20-25	3	2.0
26-30	61	40.67
31-35	63	42.0
>35	20	13.3
Mean ± SD	35.05 ± 8.44	
Marital status		
Single	34	22.7
Married	116	77.3
Level of education		
Secondary	16	10.66
HND	28	18.67
B.Sc	58	38.66
Master's degree	48	32.0
Household size		
1-3	50	33.3
4-6	71	47.3
7-9	26	17.4
>9	3	2.0
Mean ± SD	4.62 ± 4.00	
Livestock enterprise		
Fish farming	57	38.0
Poultry farming	70	46.7
Rabbit farming	23	15.3
Years of Livestock experience		
<1	35	23.3
1-5	71	47.3
6-10	30	20.0
11-15	3	2.0
16-20	7	4.7
>20	4	2.7
Scale of production		
Large	19	12.7
Medium	42	28.0
Small	89	59.3

they use social media more than any other age group to have fun and engage in financially profitable activities such as farming (Onwuemele, 2011). It was observed that 90.7% of them were male, a confirmation of male dominance in agricultural activities. This agrees with Mudege et al. (2017), who in a related study reported male dominance in livestock production. Additionally, their educational status showed that the majority (89.3%) had tertiary education. This infers the respondents were literate and possessed a good knowledge of social media tools for livestock production activities. Literacy can help people develop better skills for the use of ICTs such as social media (Deen-Swarray, 2016). With respect to livestock enterprise, it was revealed that 15.3% were involved in rabbit farming, 46.7% were poultry farmers, and 38.0% were fish farmers. Most respondents had between 1-10% years of experience in livestock farming, suggesting they were fairly new to livestock farming. The submission that they are fairly new to livestock production is further reflected in the size of their enterprise, as most of them operated on a small production scale. Being young, however, is not expected to limit the extent to which they deploy social media for livestock production activities. They use social media to pass information to one another and to seek help about problems they face on different farms, which should be the work of extension services.

Distribution of respondents based on the availability of social media for livestock production

Table 2 presents the order of social media used for livestock production with respect to their availability. Websites, YouTube and WhatsApp were the most available social media platforms to the respondents. The high availability of these platforms may be attributed to the fact that they easily promote the visibility of

Table 2. Distribution of respondents by availability of social media platforms

Social media platforms	Mean	Rank
WhatsApp	1.65	3 rd
Facebook	1.30	6 th
Twitter	0.86	10 th
News App	1.01	8 th
Website	1.83	1 st
Blog	1.43	5 th
LinkedIn	0.90	9 th
Telegram	1.45	4 th
YouTube	1.69	2 nd
Instagram	1.05	7 th

any business through advertisement placement, thus creating awareness of such business to the populace. Similarly, their popularity could be a result of the frequency with which they carry relevant information on livestock production as well as the ease with which the respondents have access to them. For instance, WhatsApp is reckoned to be a primary choice of media when it comes to seeking information on livestock production in Himachal Pradesh in India (Thakur and Chander, 2017). Ummunnakwe et al. (2018) reported WhatsApp as one of the most widely used applications in the world, due to its simplicity, instant messaging ability, and affordability in terms of data usage. It is also commonly used across most digital devices and doesn't require a constant sign-in to use it, unlike most other social media platforms. Adekunle (2016) generally noted that the use of any technology for a particular purpose will be determined by its availability to individuals.

Respondents' level of livestock production before and after the use of social media

As shown in Table 3, 88.9% of respondents were operating at a low level of livestock production, while 11.1% operated at a medium level of livestock production, and none of the respondents were at a high level of livestock production. The experience or knowledge through which they operated their livestock production at that time was that which they acquired from working with their parents. That is through observation or imitation of their parents, which may not be scientific enough to translate to increased production. It was revealed that they started learning livestock production from their parents before attaining the youthful age to start their own farms.

Table 3. Respondents' level of livestock production before the use of social media

Level of livestock production	Frequency	Percentage (%)
Low	133	88.9
Medium	17	11.1
High	0	0.0
Minimum	9.80	
Maximum	113.00	
Mean	56.076	
Std Dev.	21.9670	

Source: Field Survey, 2018.

The level of production of respondents subsequently increased upon the deployment of social media, as shown in Table 4. It was revealed that the proportion of respondents operating at a medium level of production had increased while those who had a low production

Table 4. Respondents' level of livestock production after the use of social media

Level of livestock production	Frequency	Percentage (%)
Low	54	30.0
Medium	80	53.3
High	16	10.7
Minimum	40.00 kg	
Maximum	760.00 kg	
Mean	316.0435 kg	
Std Dev.	60.80918 kg	

Source: Field Survey, 2018.

level decreased. Furthermore, upon the deployment of social media for livestock production, 10.7% of respondents were characterised by a high production level compared to zero percent before the use of social media. These findings point to the fact that social media has contributed to promoting and encouraging youth involvement in livestock production in the study area. Social media were instrumental in helping them venture into livestock farming, as many of them may have found it difficult to attend any form of livestock training to gather the necessary knowledge needed to successfully run a livestock farm due to the time and cost required. But through the use of social media available to them on their smartphone devices, they were able to access the latest and relevant information on livestock production. Consequently, social media is a potential goldmine (Suchiradipta and Saravanan, 2016) which can be used to encourage youth involvement in agriculture.

Livestock production-related use of social media by respondents

Table 5 presents the purposes for which the respondents use social media in livestock production. Findings indicate that sourcing production input

Table 5. Respondents' livestock production-related uses of social media

Uses of social media	Mean	Rank
Marketing of livestock produce	1.84	10 th
Record keeping	2.00	9 th
Share information	2.47	2 nd
Source for inputs	2.48	1 st
Training	2.31	3 rd
Address emergency situations	2.28	6 th
Pen construction	2.10	8 th
Learn management practices	2.31	3 rd
Agricultural cooperatives	2.17	7 th
Learn about new technology	2.30	5 th

Source: Field Survey, 2018.

foremost on the list, after which was sharing livestock-related information about their enterprise, while undergoing online training as well as learning livestock management practices were both ranked third. These findings together allude to the fact that the respondents see social media as an essential tool for boosting their livestock enterprise. For instance, information on current market prices of agricultural inputs and linkage to markets is all facilitated by mobile phones, therefore reducing the manipulative actions of middlemen. This is because they can directly access information on agricultural inputs through social media.

ICTs have enabled an increasing number of young people to connect to training opportunities and have provided an effective gateway to entrepreneurship and improved livelihoods (UNDESA, 2016). Youths can choose to read texts, watch videos, or listen to audio, which is made possible by platforms such as WhatsApp, websites, YouTube, and Facebook. This will give them access more frequently to get the required information or training on livestock management. Concerning the learning of livestock management practices (Ajilore, 2014) quipped that youth through social media platforms have the ability to learn and improve practices with just a click. Marketing of livestock produce was observed to be the least livestock production purpose for which the respondents used social media. This could be due to their low production level, which makes their product supply less than the demand for them and hence less need to market such products through social media platforms. This notwithstanding, research indicates that ICTs have enhanced connections to markets for young people (UNDESA, 2013).

Challenges facing respondents in the use of social media for livestock production

Identified challenges affecting the use of social media for livestock production in the study area are presented in Table 6. The power supply was adjudged the most important challenge to the use of social media for livestock production. Unstable power supply (Kipkurgat et al., 2016), along with other factors such as ineffective internet and GSM services, insufficient funds, and a lack of skills, has been identified as a contributing factor to the non-use of social media in a related subject matter in Nigeria (NAERLS, FDAE, and P&PCD 2017). Electricity supply, particularly in local communities, is usually poor. The epileptic power supply in the study area, as a result, contributed negatively to social media use for livestock production by the respondents. In the same vein, the high cost of data was ranked as the second most important challenge, followed by low income. This suggests that the young livestock farmers’

Table 6. Challenges faced by respondents in the use of social media for livestock production

Challenges	Mean	Rank
High cost of ICT device	2.09	5 th
Low income	2.22	3 rd
Poor power supply	2.51	1 st
Poor network	2.20	4 th
High cost of data	2.43	2 nd
Theft of ICT devices	1.99	6 th
Poor durability of devices	1.87	7 th
Unavailability of repair services	1.85	8 th

Source: Field Survey, 2018.

financial status (Ummunnakwe et al., 2018) affects their use of social media, as they may not be able to purchase the necessary ICT devices and sufficient data needed to access livestock information. It points to the fact that capital is essential to acquire and use ICT devices. Thus, the mere availability of ICT devices is not enough (Afolayan and Oyekunle, 2014), and associated constraints should be addressed in order to facilitate their use for livestock production.

The extent of involvement in livestock production activities by respondents

Table 7 presents the different livestock production activities across the three enterprises (poultry, fishery, and rabbitry) from which the respondents were drawn. The activity in which all the respondents were regularly involved the most was the feeding of livestock. Other activities in which they were heavily involved included cleaning pens and ponds, marketing stock products, feed formulation, and record keeping. For every respondent to participate regularly in feeding their livestock underscores the importance of feeding in livestock production, in that feed is essential for

Table 7. Frequency of involvement in livestock production activities

Livestock production activities	Mean	Rank
Feeding	2.00	1 st
Record keeping	1.68	5 th
Marketing	1.95	2 nd
Cleaning of pen/ ponds	1.95	2 nd
Feed formulation	1.75	4 th
Vaccination	1.10	12 th
Pen/cage/pond construction	1.27	10 th
Training	1.23	11 th
Nursing/brooding	1.52	7 th
Livestock sales	1.43	8 th
Fish/meat processing	1.42	9 th
Hatching	1.67	6 th

the survival of farm animals. Feeding, in particular, accounts for the major expense in livestock farming and it is applicable to the three enterprises. The exigent nature of regular sanitation in order to maintain a healthy and neat environment justifies the high level of involvement in the cleaning of pens and ponds. Vaccination being the least ranked activity, suggests it is mostly applicable to poultry and thus performed by the respondents who are poultry farmers. Given that vaccinating farm animals requires a level of technical expertise, it may also be responsible for the respondents' low involvement in vaccination. Umeh and Odom (2011) rightly identified veterinary services as a challenge for youths in agriculture. Generally, in an attempt to create job opportunities for themselves, young people are increasingly engaging in livestock production activities with the aim of tapping into the various value chains (Akintayo and Adiat, 2013).

Table 8 shows that there is a significant relationship between the use of social media and the level of livestock production. This implies that the greater the use of social media, the higher the level of livestock production. Also, it was revealed that a negative and significant relationship exists between constraints on the use of social media and the level of involvement in livestock production. This suggests that an increase in constraints to the use of social media tends to reduce respondents' levels of involvement in livestock production. Table 9 shows that there is a significant

difference in the level of livestock production before and after the use of social media. This indicates that the use of social media increased respondents' level of livestock production.

Effects of social media use on youths' involvement in livestock production

Table 10 presents the effects of social media use on youth's involvement in livestock production. The result revealed that social media have enabled youth to acquire better skills in livestock farming. This is not surprising given that social media sites like Facebook and YouTube have developed into a bustling environment where young people can virtually access images and videos showing how to engage in livestock operations. The video content would improve their knowledge, and dispositions, and ultimately enhance their skills. Young people also attest to the fact that their scale of business has expanded since they began to access information via social media. In addition, social media have afforded young people the opportunity to link up with other livestock farmers, thereby providing them with the basis for social capital in relation to promoting their enterprise. Also, through active participation via social media, young people have been able to increase their market base. This result indicates that young people are enthusiastic about the use of social media as it has provided them with a wealth of experience, capacity building, economic gains, and social capital, all of

Table 8. Relationship between respondents' use of social media, constraints and livestock production

Variables	R	P
Use of social media and level of livestock production	0.531	0.025
Constraints and level of livestock production	-0.171	0.012

Table 9. Differences in respondents' level of livestock production before and after the use of social media

Level of production	Mean	S.D	S.E	t-value	Df	P
Before	0.804	1.021	0.150	2.084	149	0.043
After	1.340	1.000	0.147			

Table 10. Effect of social media use on respondent's involvement in livestock production

Effects of social media on involvement in livestock production	Mean	Rank
The use of social media has afforded me the opportunity to link up with other youth livestock farmers.	3.50	3 rd
I have been able to access soft loan/grant in supporting my livestock enterprise as a result of my active participation with other youth farmers via social media.	3.07	5 th
The scale of business has expanded since I began assessing information via the social media.	3.51	2 nd
The social media platforms have enabled me to acquire better skills in livestock breeding.	3.52	1 st
As a result of my active participation with other farmers via the social media, my market outlet has gone beyond my immediate locality.	3.43	4 th
I have been able to acquaint myself with modern livestock management skills as a result of accessing information via the social media.	2.75	7 th
The You-tube platform has provided me with guides of compounding livestock feeds.	3.00	6 th

Table 11. Categorisation of the effect of social media use on youth involvement in livestock production

Categorisation	Freq.	%	Minimum	Maximum	Mean
Low (<22.8)	58	38.7	4	27	22.8 ± 3.6
High (≥22.8)	92	61.3			

which may motivate or spur their involvement more in livestock production. In line with this assertion, Table 11 showed that most of the respondents fell within and above the mean score, thus suggesting a high level of involvement in livestock production as a result of the use of social media. This result is in consonance with Irungu et al. (2015) and Khumoetsile (2021) that the use of social media had an influence on youths' participation in agriculture.

Few of the farmers were into livestock production before they started using social media. This, however, subsequently changed as a majority of them operated on a medium scale after they started using social media. This is because the information needed to carry out livestock production activities was made available to them through social media platforms in the form of texts, pictures, and videos. Hence, they were able to use social media to source production inputs, share information, and even undergo online training, which boosted their involvement in livestock production.

CONCLUSION AND RECOMMENDATIONS

The use of social media positively influenced the involvement of youth in livestock production, Most youths operated their livestock enterprises on a low scale before the deployment of social media. Poor power supply, the high cost of data, and low income were the main challenges that limited the use of social media. It is advised that the government and organizations supporting the agriculture sector put in place favourable and dedicated financial schemes for young farmers and agricultural entrepreneurs who are seeking (micro) credit to invest in and improve their livestock production.

CONFLICT OF INTEREST

The authors declared no conflicts of interest with respect to the research, authorship, and publication of this article.

ETHICAL COMPLIANCE

The authors have followed ethical standards in conducting the research and preparing the manuscript.

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