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Abstract
The global pandemic of Corona Virus Disease of 2019 (COVID- 19) has affected many sectors including small scale farming. This study assess the effect of Covid-19 in agriculture and identified Small Scale Farmers' (SSF) information sharing platforms and its efficiency level used for agricultural activities during the pandemic for the sustainability of human life and economic survival. Katsina state government has taken some measures that include luck down, restriction of movement, market closures, social distancing and self-isolation in majority of local government areas to stop the spread of the virus. Three research questions were developed to guide the study. Survey design was adopted and 700 small scale farmers in Katsina state were the target population. A total number of 280 respondents were randomly sampled using cluster sampling technique. Data were analyzed using descriptive statistics. The medium and platforms used by farmers to share agricultural information include traditional and modern methods. During the Pandemic the finding revealed that farmers used modern methods which include; Agric Dealers, Facebook, WhatsApp, Phone calls and SMS plat forms. But prior to the pandemic, farmers mainly used traditional methods that include; farmers' association, farm visits, personal relationship, family house and market day plat forms to share their agricultural information. The study also recommends that Government and banks should provide non interest loans, financial support and free android phones that can be accessible to small scale farmers with less assessment criteria to invest in their farming to address COVID- 19 challenges and improve agricultural knowledge sharing.

Keywords: COVID-19, Knowledge Sharing and Small Scale Farmers

Introduction

COVID-19 pandemic has negatively affected the world and caused widespread disruption to most of the human activities not only small scale farmers. The COVID-19 pandemic, restrictions on travel put farmers in severe economic consequences. Farmers cannot meet to markets or places because of the lockdown to share knowledge for their farming activities and they have suddenly found themselves in desperate conditions. In the backdrop of Covid-19, various ICT tools can significantly help farmers for knowledge sharing, like agricultural knowledge portals, mobile Apps, and online advisory help lines among others.

Agriculture is one of the important sectors for world economy and badly affected due to Covid-19 pandemic. Farmers were encouraged to work harder, to cope up with the challenges of Covid-19. Closure of many markets, has notably reduced the market space for agricultural products. Farmers' cooperative associations have lamented the bad consequences of the lockdown on the farming sector. FAO has estimated that more than 60% of the world population relies on agriculture for survival. Therefore, at this present scenario of global COVID-19 pandemic, it is important to investigate the impact of COVID-19 on agriculture and knowledge sharing as reported by World Farmers Organization recently.

Knowledge sharing is very critical for agricultural development as farmer's needs to have timely and relevant agricultural information during critical stages are very important for the farmers. Extension services in Katsina are largely based on traditional methods and neglected Information and Communication Technology (ICT) initiatives to access and share agricultural information. Covid-19 has taught us many lessons and one of the lessons is increasing use of technology particularly in agriculture. Agricultural knowledge is very important from early to final stage of farming.

Statement of the Problem

Agriculture remains a key sector for economic survival of small scale farmers and has a significant role in the overall state development, food security and employment generation. The government of Katsina has started various programs and equipped extension workers for the development of agriculture. During Covid-19 pandemic farmers used modern technologies than traditional methods ways of getting and sharing agricultural knowledge. The traditional ways are not much effective due to large farmers and shortage extension workers ratio in Katsina. Many developed and developing countries have shifted from traditional to modern ways of information sharing including Information and Communication Technology. Use of ICT in agricultural knowledge sharing has started for a long time in various places but in Katsina the progress in this regard is very slow, why?

In many Countries, farmers are using virtual platforms to share information and even to sell their products through some platforms that have been created during the Covid-19 pandemic outbreak, to help farmers cope up with social distancing measures (World Farmers Organization; 2020). Why in Katsina farmers are bearing the society costs of COVID-19 pandemic on their own shoulders and having big losses in their income? This seriously affects the economic conditions of small scale farmers in the study area and which is not sustainable. There are various reasons behind this situation, especially during the COVID-19 luck down and closure of markets in some local government areas. Consequently, one is forced to ponder whether the small scale farmers have no strategic platforms that could assist them for agricultural information sharing. Or could it be that the plat forms used in knowledge sharing is not in any way useful or the facilities adopted

are not efficient? This study is set to investigate that and suggest the way forward for economic survival and agriculture development in the area of study.

Objectives of the study

The objectives of this study are:

1. To determine the traditional platforms small scale farmers used for information sharing.
2. To determine the modern platforms small scale farmers used for information sharing.
3. To determine efficiency level of the modern platforms small scale farmers used for information sharing.

Literature Review

Pandemic is not a new scenario to a mankind as there are number of various pandemic in the world. Every pandemic have affected the human activities and economic growth of the world. Currently we are facing COVID-19 (corona virus disease of 2019). COVID-19 is an infectious disease caused by Severe Acute Respiratory Syndrome. The first confirmed case of COVID-19 was found in Wuhan city of China. The disease is spreading between people at alarming rate. WHO has declared COVID-19 outbreak as global pandemic on March 11, 2020. The virus has affected the lives of many people and global economy seriously. (World Farmers Organization; 2020)

In this period of COVID 19 pandemic outbreak, farmers throughout the world are in trial time and need to take measures of using sanitizers, face masks, gloves and social distances which are difficult for them. Many countries especially in the Europe were already hovering just above a recession prior to the viral outbreak and this event is likely to push them over the edge. The U.S. farmers have enjoyed strength in the economy but are now also paying the price of this pandemic. This is also due to the lockdown of industries which is making the price going down. In Italy,

significant losses are due to the transports' slowdown, which cause the perishing of products. (World Farmers Organization; 2020)

In rural areas the lockdown was very difficult and some villages that are usually quite distant from cities. Farmers Organizations' worldwide have been working hard to provide the farming community with tips on the way to manage their work and ensuring the health of every farmer. The organization is using a messaging app to share information with its member to keep them safe and far away from the crowd. (World Farmers Organization; 2020)

The Impact of Covid-19 Pandemic

Farmers` union has been working continuously with the government to get solutions to the impact of Covid-19 pandemic. Many governments set up agreements with agric companies to allow workers to get into the state territory and reach farms. To face workers' availability challenges, Farmers' organizations have provided their members with platforms to match demand and supply of labour for the farms. This is the case, for instance, in Austria Italy and the United Kingdom. The majority of farmers in developed nations are losing their products as they are not able to harvest due to the lack of workers, social distancing, lack of access to inputs, fuel for the machineries among others. Farmers' markets are closed. (World Farmers Organization; 2020)

Under these circumstances, it is good to know how to support rural farmers by demonstrating serious commitment in helping the most affected parts of the society with several initiatives for human development and economic survival. The major impact of Covid-19 Pandemic According to World Farmers Organization (2020) includes the followings:

1. **Shortage of agricultural inputs**: There is shortage of agricultural inputs like seed, fertilizer and pesticides. China is one of the major fertilizer producing company and exporter in the world. The lockdown in China have severely affected the international market of fertilizer.

Pandemic have affected the planting of many crops like maize, sunflower, spring wheat, barley, vegetable among others.

2. **Transportation restriction:** Restriction of movement and transportation had affected every stage of businesses in agricultural sector. The travel ban in many countries has affected delivery of agricultural inputs and animal feeds. For instance, The International Poultry Council (IPC) has warned that there will be no breeding stock and hatching eggs if such travel restriction prolonged. Fishing activities have been reduced in different part of Africa, Asia and Europe as a result of movement restriction. Agriculture produce are mostly perishable in nature, so farmers are compelled to store their unsold produce for longer period of time which leads to reduction in food quality as well as increase in cost of production.

3. **Rapid increase in employment losses around the world:** Millions of common people loosed of daily work or paid up jobs due to luck down, closure of local markets and business premises because majority of rural and urban population depend on casuals and daily work for their economy and life survival. International Labour Organization (ILO) estimated that COVID-19 has affected the 81% (2.7 billion workers) global work force. Currently Food and Agriculture Organization (FAO) is working with a main aim to maintain food value chain and keep food supply going.

4. **Increased of food prices:** There are food prices increased due to COVID-19 which seriously affected the poorest and the most vulnerable segments of the population around the globe. At present, millions of people are facing chronic hunger and facing acute severe life challenges and insecurity. Around 10 million children depend upon the school meals to fulfill their nutritional requirement. But due to closing of schools and suspension of school meal programs,

these children are no longer receiving daily school meals which may reduce their capacity to cope with diseases.

5. **Decreased in income and revenue**: it was mentioned by many experts that, small scale farmers may face difficulty in selling their product which in turn cause decrease in their income and purchasing capacity as well as loosing revenue. Pandemic has affected the food availability, reduction in income and purchasing capacity in rural and urban areas.

6. **Food insecurity increased;** there are unavailability and inaccessibility of sufficient amount of nutritious food in consistent manner. Due to decline in international trade, disturbance in food supply chain and food production. Thus import dependent countries seem to be highly affected by pandemic and the high rate of transmission of COVID-19.

7. **Malnutrition increased**: Malnutrition increases in rural areas with lack of availability of farm products which lead to the consumption of unhealthy and cheaper food, with consequent higher exposure to diseases in general. In line with the present Pandemic, WFO suggested that governments, in collaboration with farmers' organizations and agricultural cooperatives, should think of alternatives ways to support farmers. Thus, the impact of COVID-19 has affected not only farmers in Katsina but rather a global pandemic and need to be addressed urgently.

Knowledge Sharing and Platforms Used by Small Scale Farmers

Knowledge sharing is an interactive process in which information, knowledge and skills, relevant for development are exchange between farmers, extension workers as well as advisory services and information providers and researchers either personally or through media. Fari (2015) stated that, information and knowledge sharing is an activity that requires the interaction, transfer and exchange of ideas and expertise among individuals, organizations and/or nations. Churi,

Malongo, Mlozi and Tumbo (2012) stated that, sharing of knowledge from farmer to farmer through personal contact has remained the main platforms of sharing information despite the inadequate reliability of information and experience shared among them. Bachhav (2012) opines that, if relevant and timely information is shared and effectively used by SSFs it will help them to make right decision for their farming activities.

There are varieties of ICT platforms that are currently being used to provide different types of information sharing strategies to SSFs. These include online PC based platforms, internet websites, mobile telephones, radios and televisions among others. In Africa, different ICT platforms are being used for exchange and dissemination of a wide range of information, There are online portals providing interaction platforms for agricultural researchers and SHFs. ICT information services can also serve as excellent entry points for farmers who have not previously had access to unbiased and timely information (Abcic: 2016). Therefore, information sharing platforms are of great importance to SHFs for their farming activities. Some methods that could be used by SHFs to create more platforms to share information for farming activities are: radio, television, newspapers, mobile phone, library and information centre. Communication that wants to reach a large audience of farmers needs to use radio, television, mobile phone and an appropriate media like newspapers, brochures, among others.

Methodology

Quantitative and survey research was used in this study. Leedy and Ormrod (2005) describe quantitative research as looking at the amounts or quantities of one or more variables of interest. They explain that quantitative researchers seek explanations and predictions that can generalize onto other persons and places. Cohen, Manion and Morrison (2007) believed that

quantitative data allows the researcher to compare different situations and its statistical analysis is considered advantageous that it helps to explain concepts using numerical analysis.

Bailey (1994) states that, if the survey is well conducted, using a representative sample, valid inferences can be drawn from the sample to make generalizations on the opinion attitudes and beliefs of the whole population on a specific topic. The rationale for employing the survey in this study is to have a bigger perspective through a bigger sample than what is usually obtainable through interviews. This design was chosen because it allows collection of large amounts of data in a highly economical way.

Demographic Data

The demographic data of farmers in the area of study include; gender which revealed that 85.1% of the respondents are males only 14.9% are females, age group, it demonstrated wide differences with few 5.10% of the respondents below 20 years of age, 22.8% are between 21 to 30 years, 19.2% 31 to 40 years. But 32.6% and 20.8% are between 41 to 50 years and 51 years and above respectively. Data also revealed that educational background that 37.7% of the respondents either possessed National Certificate of Education (NCE) or Ordinary National Diploma (OND), 25.5% obtained Secondary School Certificate. While the least are 4.31% and 12.9% who possessed Adult Mass Literacy and Primary School Leaving Certificates respectively, and 19.6% possessed other relevant certificates like Qur'anic, Hadith or Islamiyya certificates.

Information Sharing Plat Forms of Small Scale Farmers

Table 1.1: Traditional Methods of Information Sharing Platforms Used by SSFs

SN	Platforms used	Frequency	Percentage (%)
1	Farmers' association platform	194	76.08
2	Farm visits platform	204	80.00
3	Personal relationship platform	219	85.88
4	Family House platform	194	76.08
5	Market day platform	204	80.00
6	Other platforms	102	40.00

The traditional information sharing platforms used by SSFs as shown in table 1.1 indicated that personal relationships come first with very significant percent of 85.88%, followed by farm visits and market day plat forms with 80.00% respectively, farmers' association and family house plat forms with 76.08% respectively while other plat forms with insignificant percent of 40.00%.

Table 1.2: Modern Methods of Information Sharing Platforms Used by SSFs

SN	Platforms used	Frequency	Percentage (%)
1	Facebook platform	157	61.57
2	WhatsApp platform	152	59.61
3	Agric Dealers platform	194	76.08
4	Phone calls platform	204	80.00
5	Phone SMS platform	219	85.88
6	Other platforms	199	78.04

Efficiency Level of the Information Sharing Platforms

The modern methods information sharing platforms used by SSFs as shown in table 1.2 revealed that SMS and phone call plat forms come with very significant percentages of 85.88% and 80.00% respectively. Also agric dealers and other plat forms with very significant percentages with 76.08 and respectively, farmers' association and family house plat forms with 76.08% and 78.04 respectively while Facebook and WhatsApp plat forms with 61.57% and 59.61% respectively.

Table 1.3: Efficiency Level of Modern Methods Used by SSFs in Katsina

SN	Information sharing platforms used by farmers for farming activities	High		Low	
		Frequency	Percentage	Frequency	Percentage (%)
1	Facebook platform	77	30.20	178	69.80
2	WhatsApp platform	93	36.47	162	63.53
3	Agric Dealers platform	177	69.41	78	30.59
4	Phone calls platform	152	59.61	103	40.39
5	Phone SMS platform	178	69.80	77	30.20
6	Other platforms	143	56.08	112	43.92

Table 1.3, the efficiency level of information sharing platforms of SHFs in Katsina state indicated significant percentages in the low efficiency level of Facebook and WhatsApp plat forms with

69.80% and 69.41% respectively. Agric Dealers and SMS plat forms indicated a significant percentage in high efficiency level with 69.41% and 69.80% respectively while phone calls and other plat forms with 59.61% and 56.08% respectively. Thus, revealed that farmers were not efficiently use the modern methods of information sharing.

Discussion

The study showed that farmers preferred traditional method of getting information through oral communication strategies which brings more benefits. At the present time, there is a high-speed of cellular network, that multimedia files can be used to share information which needs to be improved. The use of face book, whatsApp and mobile phones to make calls or send messages have increased the effectiveness of information sharing strategies which gave assurance for effective and efficient communication that need farmers also to use and adopt. Though there are challenges on how to use smart phones and unreliable network connectivity, high costs of air time credit. This finding corroborated with the findings of Abbas (2015) who revealed that farmers in Nigeria share and disseminate information via mobile telephones.

The finding showed that, farmers in Katsina state had a variety of information sharing platforms. The major and most commonly used platforms included; farm visits, personal relationship and farmers' association platforms for knowledge sharing to enhance their farming activities. This finding also corroborated the finding of Abcic (2016), in his study conducted on Potential of ICT Mechanisms for Sharing Variety of Information in Africa, Malaango, Mlozi and Timbo (2012).

Conclusion

The researchers suggested that SHFs can use social media (WhatApp and Facebook) and mobile phone as platforms to communicate with extension workers, cooperative members,

agricultural dealers and fellow farmers conveniently in emergency situation. These can be an alternative way for effective information sharing among small holder farmers, because they can communicate with their local dialog through chatting, sending messages or phone calls. Farmer's should use and accept new technology and innovations being introduced than using traditional methods for information sharing which linked with the Information and Communication Technologies (ICT) for more successful farming.

Recommendations

1. Government should provide loans and credits available to small scale farmers with less assessment criteria and local conditions that can be accessible to the farmers.
2. Banks and financial companies should release fund for financial support to those farmers to invest in their farming to address COVID 19 challenges.
3. Katsina state should provide free android phones and encourage small scale farmers to use online plat forms for agricultural information and knowledge sharing for maximum productivity in farming system.

References

Abbas K. D. (2015) Knowledge Management Strategies and Practices in Nigerian Agricultural Research Institutes. Thesis Submitted In Fulfillment of the Requirements For The Award of Degree of Doctor Of Philosophy (Information Studies) In The School of Social Sciences, College of Humanities, University of Kwazulu-Natal, Pietermaritzburg Campus, South Africa.

Abcic, D. (2016) Potential ICT Mechanisms for Sharing Varietal Information in Africa; ISSD in Africa

Bachhav, Nitin Bhagachand (2012), "Information Needs of the Rural Farmers : A Study from Maharashtra, India: A Survey" . *Library Philosophy and Practice (e-journal)*.

Bailey, K.D. (1994) Method of Social Research. 4th ed. Newyork :The Free Press, p. 275.

Churi, A.J. , Malongo R. S., Mlozi, S. D. And Tumbo, R. C. (2012) Understanding Farmers Information Communication Strategies for Managing Climate Risks in Rural Semi-Arid Areas, Tanzania: *International Journal of Information and Communication T*echnology Research, vol. 2. No.11.

Cohen,L. Manion,L and Morrison,K (2007) Research Methods in Education 6th ed. Simultaneously Published in the USA and Canada by Routledge 270 Madison Avenue, New York, NY 10016.

Fari, S. A. (2015) Comparative Assessment of Information and Knowledge Sharing Among Academics in Selected Universities in Nigeria and South Africa: Dissertation Submitted in Fulfilment of The Requirements for the Degree of Doctor of Philosophy in Library and Information Science of The University of Zululand, South Africa.

Leedy, P. D. and Ormrod, J.E. 2005. Practical Research: Planning and Design. 8th ed. New Jersey: Pearson Education International.

Padam, B.P., M.R. Pouded, Gautam,A., Phuyal, S. (2020) Covid-19 and Its Global Impact on Food and Agriculture;*Journal of Biology and Today's World*, vol. 9(5) 221.

World Farmers Organizatio (2020) retrieved 27 October 2020 from https://www.wfo-oma.org/covid-19/farmers-challenges/covid-19-what-cambodian-farmers-are-experiencing.

World Farmers Organizatio (2020) retrieved 27 October 2020 from https://www.wfo-oma.org/covid-19/farmers-challenges/covid-19-and-the-austrian-solution-to-guarantee-workers-in-agriculture.

World Farmers Organizatio (2020) retrieved 27 October 2020 from https://www.wfo-oma.org/covid-19/coronavirus-cia-agreement-with-synergie-italia-to-find-agricultural-workers.