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***Influence of Social Media on Agricultural Advisory Service: Analytical study
on the Agricultural Extension Specialists of Uttar Banga Krishi
Vishwavidyalaya, West Bengal***

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ABSTRACT

Since the introduction of social media, communication is becoming more and more dynamic every day. Communication has become more virtual than physical. More and more people – young and old alike – are fascinated by social media and it is a trend that is not going down very soon. For a long period in the future, social media will shape the way people interact, share information, form opinions, and lead individual and collective actions. India has been experiencing major changes in the agricultural extension system since the beginning of the 21st century. Social media can play a vital role in this kind of new and fast-changing agricultural extension system. Keeping the above fact in mind, the research was conducted to investigate the perception and use of social media by the agricultural extension specialists of Uttar Banga Krishi Vishwavidyalaya, Coochbehar (West Bengal). Structured questionnaires were used to collect data from 76 extension specialists. The major activity on social media was searching for news and events and sharing information. A major impeding factor for social media use was the lack of authenticity of the information shared online. The study found that most of the respondents were aware of social media and use these platforms to connect with friends and relatives. Overall, the survey found that social media is a very useful tool in agricultural extension and rural advisory services.

Keywords: Social media, ICTs, agriculture, extension, rural, advisory services, Information and communication technology, UBKV, West Bengal

1. INTRODUCTION:

Human beings have always lived in communities because they are social animals and the advancement of Information and Communication Technology (ICT) has greatly changed their interpersonal relationship, especially through introduction of the social media. The term “social media” refers to the wide range of Internet-based digital tools that allow users to participate in online exchanges, contribute user-created content, or join online communities. These digital tools allow users to maintain social relationships by viewing, visiting, and sharing their lists of social connections with other members (Dewing, 2010). These tools can be used to build community-based personal websites, online discussions forums, chat rooms and other social spaces accessible to users for exchange of personal content and communication. Enormous uses and advantages of social media applications make it relevant not only for large scale business and marketing activities, but it also opens the doors of opportunities for education, research & development and other academic fields at a low cost and at increased level of efficiency (Gupta, Gautam, Khare, 2014).

Agricultural extension is a generic term meaning the application of scientific research and new knowledge to agricultural practices through farmer education. The field of 'extension' now encompasses a wider range of communication and learning activities organized for rural people by educators from different disciplines, including agriculture, agricultural marketing, health and business studies (Veronice, 2015). Agricultural extension program can provide much-needed help in the form of practical field advice, innovations from scientists and practitioners, and sound commodity-marketing principles. On the other hand, Extension specialists are very important in agricultural development process. Specifically the basic role of extension personnel is that it helps in the improvement of those who are involved in primary food production. This is because it involves a shift from the traditional resource-based method of production to a new science-based method. The science-based methods involve the adoption of new varieties, new cultural practices, use of agrochemicals and other capital - intensive inputs. Before these new technologies are adopted, the farmers need to be aware of them and learn how to use them correctly in their farming environment (Pratap, 2016).

Social media is becoming a very important tool in farming because it has the ability to connect with farmers and agribusiness people from around the world over large geographical distances. The benefits of this can be as large or as small as the farmers choose, depending on how much time we wish to spend on it (Kipkurgat, Onyiego, Chemwaina 2016). Social media plays a very important role in enhancing interactions and information flows among different actors involved in agricultural innovation and also enhance capacities of agricultural extension and advisory service providers. A consensus exists that extension services, if functioning effectively, improve agricultural productivity by providing farmers with information that helps them to optimize their use of limited resources (Muyanga & Jayne, 2006).

Social media gives an opportunity to connect and interact with one's audience in agriculture, educate them and helps to know more about the industry. It makes promotion of extension programs easier, allows real time interaction with clients, helps extend outreach to new audiences, and promotes development of relationship among actors in Agricultural Innovation Systems (AIS).

Thus, it is the need of the hour to find out the adoption level, usage and perceived benefits of the extension functionaries of Uttarbanga Krishi Vishwavidyalaya, Coochbehar (West Bengal) towards IT in general and social media in particular, as a tool of agricultural advisory services.

2. AGRICULTURAL ADVISORY SERVICE & SOCIAL MEDIA:

A recent study shows there has been 100 per cent increase in the past year in rural social media users in India and many reported going online only to join social media (Bhargava, 2015). Farmers are becoming more and more innovative in using social media and farming selfies trending across social media platforms are a good example. Farmingselfie.com, (<http://farmingselfie.com/>) a blog by an Essex farmer @willwilson100 (<https://twitter.com/willwilson100>) collects all the recent farming selfies from around the world to showcase rural farm lives across the globe. Some other prominent examples of use of major social media platforms in agriculture are given in Table 1.

FACEBOOK				
Sl No.	Name of Group / Community / Pages	Description	Target users	Region

1.	Livestock Information and Marketing Centre (https://www.facebook.com/groups/Livestock.TN/)	Members (farmers, extension personnel, scientists, market functionaries, consumers, local leaders, <i>etc.</i>) of this group share information related to livestock production, management, marketing, <i>etc.</i>	Agricultural stakeholders related to livestock	India
2.	Turmeric Farmers' Association of India (https://www.facebook.com/turmeric.farmers)	This page was created by turmeric farmers to stabilize price of turmeric in the market. Till date, the farmers connect through the page and share information to keep turmeric price stable and increase marketing opportunities of turmeric.	Turmeric farmers	India
3.	Mkulima Young (Young Farmer) (https://www.facebook.com/mkulima.young)	This page is an information sharing platform for young farmers started by Joseph Macharia, a young farmer himself. Mostly agro-advisory and market information are shared.	Young farmers	Kenya
4.	Agricultural productivity Technology (https://www.facebook.com/-Agricultural-Productivity-Technology-573102049456267/)	This page was created by the progressive farmers of Bangladesh. This page basically shares information regarding the modern Agricultural Information Technology.	Progressive Farmers	Bangladesh
5.	Krishi Vigyan Kendra, Namakkal (https://www.facebook.com/Krishi-Vigyan-Kendra-Namakkal-144267712371910/)	Krishi Vigyan Kendra, Namakkal communicates information related to farmers' training programmes, availability of inputs <i>etc.</i> through this account	Subject Matter Specialists of KVK, farmers, agricultural stakeholders	India
6.	Global Forum for Rural Advisory Services (GFRAS) (https://www.facebook.com/groups/gfras/)	This page provides information related to advocacy and leadership on pluralistic, demand-driven rural advisory services.	Agricultural Advisory Service Professionals and others	Global
TWITTER				
1.	Agriculture INDIA (https://twitter.com/agrigoi)	This is official Twitter Handle of the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India.	Farmers, Agricultural extensionists, development practitioners	India
2.	ICAR (https://twitter.com/icarindia)	This is official Twitter Handle of The Indian Council of Agricultural Research. It is an autonomous organisation under the DARE, Ministry of Agriculture and Farmers Welfare, Government of India.	Farmers, researchers, policy makers of India related to ICAR	India
3.	AgChat (https://twitter.com/agchat)	The AgChat (Twitter online discussion group by the AgChat Foundation) started in 2009 by a group of American farmers is widely used in USA, UK, Australia, New Zealand and Ireland for facilitating discussions of industry	Farmers, entrepreneur, farm product consumers	Global

		issues between farmers and agribusinesses		
4.	eXtension4U (https://twitter.com/eXtension4U)	Twitter handle of eXtension.org, a research based learning network of cooperative extension of USA. Sound research based information is shared through the handle.	Farmers, researchers, policy makers of USA related to ARD	USA
5.	e-Agriculture (https://twitter.com/e_agriculture)	Twitter handle of e-Agriculture, a global initiative to enhance sustainable agricultural development and food security by improving the use of ICTs. Information shared is related to recent developments, effort, publications and stories of ICT use in agriculture.	Farmers, researchers, development practitioners, Extension specialists	Global
BLOG or WEBLOG				
1.	Smart Indian Agriculture (http://www.smartindianagriculture.in/)	This website is devoted to promoting science-based agriculture so that the country can sustainably meet its requirement of food, feed, fibre, and possibly fuel, while assuring prosperity to farmers and affordable prices to consumers.	Researchers, policy makers, Extension workers etc.	India
2.	Navdanya's Diary (http://www.navdanya.org/blog/)	Navdanya means Nine Crops, which collectively represent India's food security. Navdanya started as a research programme at Research Foundation for science, Technology and Ecology (RFSTE) to help support and guide environment activists. This website acts as the official blog of the Navdanya initiative.	Agricultural entrepreneur, Researchers, extension specialists etc.	India
3.	TNAU Agritech Portal blog (Tamil Nadu Agricultural University) (http://tnaue-agritechportal.blogspot.in/)	The blogs of TNAU Agritech Portal deals with everything agriculture – from sowing to harvesting, crop protection to crop management, weather, recent happenings in the agriculture industry, schemes and programs for farmers, ICTs, and many more.	Farmers, agripreneurs, extensionists, researchers	India
4.	Ecoagriculturist (https://ecoagriculturist.wordpress.com/)	The blog posts are related to sustainable agriculture, environment, youth involvement in agriculture, ICT4Ag, and other related topics. The blog was also a winner of the YoBloCO Awards of CTA in 2014.	Farmers	Nigeria
5.	e-Agriculture (http://www.e-agriculture.org/)	e-Agriculture is a global Community of Practice, where people from all over the world exchange information, ideas, and resources related to the use of information and communication technologies (ICT) for sustainable	Information and communication specialists, researchers,	Global

		agriculture and rural development.	farmers, students, policy makers, business people, development practitioners, and others.	
YOUTUBE				
1.	Green TV India (https://www.youtube.com/user/Greentvindia1)	Green TV is India's premier rural and agricultural television channel, dedicated to delivering content to rural and small town communities which is tailored for and targeted them, providing them with information, spreading greater awareness, supporting their growth and education and also providing them with relevant entertainment.	Researchers, Progressive farmers, extension specialists	India
2.	Farming First (https://www.youtube.com/user/FarmingFirst/)	This channel highlights the mission of the agricultural development coalition of the same name, founded in 2009. Made up of 131 organizations worldwide, Farming First prioritizes the protection of natural resources, knowledge sharing, local infrastructure, harvests, market access, and innovative research.	Policy makers, researchers, agricultural enthusiasts and practitioners	Global
3.	CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) (https://www.youtube.com/user/CCAFS)	The videos shared by the channel features stories of smallholder farmers, interviews with leading agricultural experts across the globe, and innovative information on climate-smart agriculture.	Researchers, farmers, policy makers	Global
4.	IFADTV (https://www.youtube.com/user/IFADTV/)	It is a well produced and highly engaging channel from the International Fund for Agricultural Development (IFAD). Videos feature news stories about smallholder farmers in addition to interviews with agriculture experts.	Policy makers, farmers, extension specialists	Global

3. ROLE OF INDIAN AGRICULTURAL UNIVERSITIES IN EXTENSION

Agricultural Universities in India are providing extension services to the farmers, agri-business persons and who are engaged in agricultural profession. The universities are providing right type of professionals, in-service training and providing literature and information through ATIC, radio talks, exhibitions, Krishi Melas, Krishi Vichar Manch, etc. The universities are also providing all types of information through training to the farmers in view of plant protection, seed, implements, soils, fruit trees and research on horticulture, marketing, price stabilization, animal husbandry, etc.

Now it is necessary to start agro-industries, to reduce the pressure of small land holdings and to generate employment opportunities for community development in collaboration with agricultural universities.

4. LITERATURE REVIEW:

The agricultural sector globally is embracing social media and utilizing it to promote knowledge within the industry as well as networking with other like-minded agricultural professionals. The communities and relationships that agriculture is largely based on are further extended through social media channels and rural workers have begun to use social media to combat the feeling of isolation which arises due to the nature of their work (Kipkurgat, Onyiego, Chemwaina, 2016). Social media gives an opportunity to connect and interact with one's audience in agriculture, educate them and helps to know more about the industry. It makes promotion of extension programs easier, allows real time interaction with clients, helps extend outreach to new audiences, and promotes development of relationship among actors in Agricultural Innovation Systems (AIS) (Cornelisse *et al.*, 2011).

Bhattacharjee and Raj (2016) conducted a major online study on Global survey on use of social media in agricultural extension and rural advisory services. From findings of the survey, it was clear that social media is fast becoming an integral part of agricultural communication and it is being readily accepted as the next big thing in Agricultural advisory service. Another study by Crowley (2013) reported that 54% of farmers in Canada were using social media for personal use and 30% were using social media to promote their businesses.

Social media gives farmers a voice and an opportunity to directly connect with their customers, which can help in direct marketing and increased profits alongside facilitating mass-personal communication (Carr and Hayes, 2015). Also, they don't need to depend on a single source for information anymore and with increased contact with peers, tried and tested information at the right time can prove to be a very important input.

For extension organizations, communication has become much easier and hassle free as the personal contact becomes uncomplicated with social media and platforms like Facebook, Twitter and Whatsapp which encourage high interaction among users benefiting everyone involved. Social media presence also increases the online visibility of extension websites (Arnold *et al.*, 2012) which is another big advantage for quicker information dissemination.

Facebook, YouTube, blogs, wikis and podcasts provide large potential for use to extensionists but the content and outreach needs to be determined based on users and content (Kinsley, 2010). For research and extension organizations, they also provide the opportunity of opinion mining to understand farmers' concerns, their problems and opinions, and evaluation of their attitudes towards agricultural aspects (Valsamidis *et al.*, 2013). LinkedIn, Academia.edu and ResearchGate have more users from researchers, academicians and other professionals to create a peer network.

Whatsapp groups of farmers in India are actively sharing information and seeking advice from experts when needed and are requesting the government to use Google Earth and Whatsapp for accurate and efficient information delivery (Chaba, 2015). In spite of the opportunities, the use of social media is still just beginning in Agricultural advisory service. More and more farmers are using social media around the world and find it effective on farm (LeBoeuf *et al.*, 2012).

5. UTTAR BANGA KRISHI VISHWAVIDYALAYA- A BRIEF PROFILE:

The northern part of West Bengal is endowed with varied natural resources like forest, economic plant resources, agro-ecosystem etc. and an extremely responsive rural community. Keeping this perspective in view, the state government of West Bengal established a satellite campus of Bidhan Chandra Krishi Viswavidyalaya (BCKV) at Pundibari of Cooch-Behar district in 1979. Later, the State Government strengthened this satellite campus of Bidhan Chandra Krishi Viswavidyalaya further, and ultimately decided to upgrade this campus to a full-fledged State Agricultural University in July 2000 covering the entire North Bengal. The "Uttar Banga Krishi Viswavidyalaya" or UBKV was established by West Bengal Act XX of 2000 and started functioning from 1st February, 2001. The university is comprised of three faculties, viz., faculty of agriculture, faculty of horticulture and faculty of agricultural engineering and 16 departments. The UBKV central library is one of the most important centres of the University, which facilitates the reading, teaching, consultation, study, research and extension programs etc. It also provides different services such as book lending, book bank, reference service, referral service, CD-ROM service, high speed internet facility, Online Public Access Catalogue (OPAC) etc.

At present, the University has 5 KVKs (Krishi Vigyan Kendras) in different regions of the northern part of the West Bengal. Extension education is one of the major functions of the KVKs of Uttar Banga Krishi Viswavidyalaya. The responsibility for planning, organizing, conducting and coordinating the extension education activities of the university in the northern part of West Bengal lies with the Directorate of Extension Education. Its main aim is to transfer the well proven/tested technology to the farmers (males and females), livestock owners, rural youth, field staff of State Government and other personnel engaged in developmental and professional agencies in the sphere of agriculture, animal husbandry, horticulture, home agencies and other allied areas through its well planned, skill-oriented and need-based programmes.

6. METHODOLOGY:

In the present study the universe is very small and specific (Extension specialists of Uttar Banga Krishi Viswavidyalaya, Coochbehar, West Bengal), so for sampling Census method was adopted, i.e. all the extension personnel of the university working at main campus and outstations (all 5 KVKs) were contacted. University extension personnel serving at main campus along with Extension personnel from outstations were taken as the sample. For data collection, a well designed questionnaire was distributed to all the extension personnel (total 76) and 71 had responded timely and positively with the overall response rate being 93.42 per cent. The data were analysed and inferences were made based on standard statistical methods.

7. DATA ANALYSIS:

Table 1 shows the personal profile of the respondents. There was a total of 71 respondents, with 67 males (94.37%) and 4 females (5.63%). Majority were in the age group of 36-50 (64.79%), followed by the age group below 35 years (23.94%) and age group more than 50 years (11.27%). It was found that majority of the respondents (73.24%) were Bachelor of Science in Agriculture (B.Sc in Agriculture) and remaining 23.94% respondents are Post Graduate (M.Sc.) and only 2.82% were

Doctorate (PhD). Out of total 71 respondents, 33.82% were in extension services for 6-10 years followed by 11-15 years (22.53%), 2-5 years (19.71%), less than 2 years (15.49%) and only 8.45% of the respondents were serving in extension for more than 15 years. The study clearly indicated that most of the respondents (91.55%) use social media extensively, where only 8.45% respondents do not use social media.

Table 1: Personal details of the respondents (n=71)

Personal Details	Classification	Frequency	%
Gender	Male	67	94.37
	Female	4	5.63
Age (In years)	Below 35	17	23.94
	Middle Aged (36-50 years)	46	64.79
	Old (More than 50 years)	8	11.27
Educational Qualification	B.Sc in Agriculture	52	73.24
	M.Sc in Agriculture	17	23.94
	Ph.D.	2	2.82
	Post Doctorate	0	0.00
Length of Service in Extension (In years)	Less than 2	11	15.49
	2-5	14	19.71
	6-10	24	33.82
	11-15	16	22.53
	More than 15	6	8.45
Use of Social Media	Yes	65	91.55
	No	6	8.45

Table 2 shows that the respondents were familiar with social media, majority (44.62%) having been using it for more than past five years, followed by those who have been using it for last three to five years (33.84%). Only few have been using it for last one to two years (12.31%) or less than one year (9.23%).

Table 2: Number of years using Social Media (n=65)

Years	Frequency	%
More than 5 years	29	44.62
3-5 years	22	33.84
1-2 years	8	12.31
Less than 1 year	6	9.23
Total	65	100

Table 3 reveals that connecting with friends and relatives (87.69%), sharing information (75.69%), and exchanging knowledge (66.15%) in the form of discussions are becoming major activities on social media sites, especially for agricultural professionals and practitioners as was evident from the responses in the survey. Other major activities on social media sites were finding out news and events (52.31%), share professional activities (47.69%) and find accounts of interests (36.92%). Only 27.69% indicated other different reasons for using social media.

Table 3: Reasons for using social media (n=65)

Place	Frequency	%
Find out news and events	34	52.31
Exchange knowledge	43	66.15
To share information	49	75.38
Connect with friends and relatives	57	87.69
Share professional activities	31	47.69
Find interests	24	36.92
Others	18	27.69

***Multiple answers were permitted**

There are different types of social media platforms, which are commonly used by the extension specialists. Table 4 reveals that consistent with the global trend, the study identified Social networking sites as a most preferred social media platform by all the respondents (100%); followed by Socially integrated messaging platforms (95.38%), Collaborative projects (83.08%), Video Content communities(80%), Professional networking sites (63.08%), Micro-blogs (53.85%), Blogs (41.54%), Forums, discussion boards and groups (35.38%), Photo Content communities (30.77%), Social gaming (27.69%), Social news (21.54%), Social bookmarking (20%), Audio Content communities (18.46%) and Virtual social worlds (7.69%).

Table 4: Use of different Social Media Platform (n=65)

Type of Social media	Frequency	%
Social networking sites	65	100.00
Blogs	27	41.54
Micro-blogs	35	53.85
Collaborative projects (e.g. Wiki)	54	83.08
Social bookmarking	13	20.00
Virtual social worlds	5	7.69
Social gaming	18	27.69

Video Content communities (e.g. YouTube)	52	80.00
Photo Content communities (e.g. Instagram, Flickr)	20	30.77
Audio Content communities (e.g. Soundcloud)	12	18.46
Forums, discussion boards and groups	23	35.38
Socially integrated messaging platforms	62	95.38
Professional networking (e.g. ResearchGate, LinkedIn)	41	63.08
Social news (e.g. Reddit, Propeller)	14	21.54

***Multiple answers were permitted**

Table 5 shows that personal mobile phones were the most used device by the respondents to access social media (95.38%) followed by personal laptop (81.54%), official desktop (49.23%), commercial cafe (49.23%), personal desktop (26.15%) and official laptop (20%). Though mobile phones are getting increasingly popular, globally laptops and PCs are still the most used devices to access social media.

Table 5: Place of accessing Social media (n=65)

Place	Frequency	%
Mobile phone	62	95.38
Personal laptop	53	81.54
Personal desktop	17	26.15
Official desktop	32	49.23
Official laptop	13	20.00
Commercial cafe	32	49.23

***Multiple answers were permitted**

Depending on how active an individual is on social media platforms in sharing information and communicating with others on a regular basis, four types of social media users were identified (Alarcon-del-amo *et al.*, 2011) – a) introverts (only update profile and mostly communicate through private messaging), b) novel users (updates profile, actively seek out information, spend time tagging photos, logs in between 1 – 5 hours a week), c) versatile users (updates profile, sends public and private messages, shares links, comment on discussion threads, mostly in social media for professional activities) and d) expert communicators (logs in several times a day, actively engaged in all social media / networking activities, stay updated and interact very frequently both professionally and personally). According to Table 6, a sizable portion of the respondents identified themselves as versatile users (35.38 %) followed by introvert (29.23%), expert-communicator (23.08%) and novel user (12.31%).

Table 6: Types of user (n=65)

Place	Frequency	%
Versatile user	23	35.38
Expert-communicator	15	23.08
Novel user	8	12.31
Introvert	19	29.23
Total	65	100.00

Global reach is considered one of the most important features in any development sector and it is same for social media use in agricultural advisory service (Table 7). Global audience for the information shared is considered the greatest advantage of social media (83.08%) followed by interactive and multimedia content support (80%), knowledge pool creation in real time (73.85%), discussion among local and global peers (66.15%), ensures better feedback (35.38%) and other advantages (20%).

Table 7: Advantages of social media (n=65)

Advantages	Frequency	%
Global audience	54	83.08
Knowledge pool creation in real time	48	73.85
Discussion among local and global peers	43	66.15
Interactive and multimedia content support	52	80.00
Ensures better feedback	23	35.38
Others	13	20.00

***Multiple answers were permitted**

But along with the advantages, social media has some perceived disadvantages too. Information being one of the most important inputs in agriculture, lack of authentic information can do more harm than good to the farmers. Table 8 reveals that lack of authenticity is considered the greatest disadvantage of social media (80%) followed by location specific nature of social media (67.69%), unproductive use of time (66.15%), lack of expertise in using social media (49.23%), absence of experienced old professionals (35.38%) and other disadvantages (32.31%).

Table 8: Disadvantages of social media (n=65)

Disadvantages	Frequency	%
Lack of authenticity	52	80.00

Unproductive use of time	43	66.15
Absence of experienced old professionals	23	35.38
Lack of expertise in using social media	32	49.23
Location specific nature of social media	44	67.69
Others	21	32.31

***Multiple answers were permitted**

Now the extension specialists were asked the question regarding the benefits of using social media in the specific field, i.e. agricultural extension and advisory service. Table 9 reveals that getting profession related current news is considered the greatest benefits of social media in agricultural extension (87.69%) followed by getting job alerts (70.77%), getting product review (64.62%), getting information on conference/seminar/workshop (60%), promotes new technology (55.38%), getting Business opportunities (49.23%), getting Information about new publications (35.38%) and other benefits (18.46%).

Table 9: Benefits of using Social media in Agricultural extension (n=65)

Benefits	Frequency	%
Get profession related current News	57	87.69
Conference/seminar/workshop etc	39	60.00
Information about new publications	23	35.38
Promotes new technology	36	55.38
Job alerts	46	70.77
Product review/information	42	64.62
Business opportunities	32	49.23
Others	12	18.46

***Multiple answers were permitted**

Agricultural extension practitioners are using social media to discuss a wide range of topics (Table 10). The respondents indicated that they mostly discussed about the information related to agricultural workshop (69.23%). This is followed by topics concerning Indian farming policy (66.15%), advocacy for agri-food innovation (66.15%), organic farming (64.62%), livestock wellness (53.85%), farm animal management (52.31%), awareness creation about agro-food industry (41.54%), Information for rural development (36.92%), crop and livestock entrepreneurial information (33.85%), information on specific farm community (32.31%), promoting new generation of farmers (29.23%), local food and sustainable farming (23.08%), ethical issues of farming (18.46%) and other topics (18.46%).

Table 10: Topics related to Agriculture discussed in different social media platforms (n=65)

Topics	Frequency	%
Ethical issues of farming	12	18.46
Farm Animal Management	34	52.31
Indian farming policy	43	66.15
Information related to Agricultural workshop	45	69.23
Information on specific farm community	21	32.31
Information for rural development	24	36.92
Local food and sustainable farming	15	23.08
Promoting new generation of farmers	19	29.23
Livestock wellness	35	53.85
Advocacy for agri-food innovation	43	66.15
Organic farming	42	64.62
Awareness creation about agro-food industry	27	41.54
Crop and livestock entrepreneurial information	22	33.85
Others	12	18.46

***Multiple answers were permitted**

Table 11 indicates that interaction between agribusinesses and with their customers was considered the biggest advantage of social media in market led extension (81.54 %). Attracting large number of customers through social media platforms (73.85%), flourishing of local farmers' markets (69.23%) and making market demand better (53.85) were also considered as important benefits.

Table 11: Advantages of Social media for market-led extension (n=65)

Advantages	Frequency	%
Interaction B2B and B2C	53	81.54
Attracts larger number of customers	48	73.85
Local farmers' market will flourish	45	69.23
Market demand can be better	35	53.85
Others	16	24.62

***Multiple answers were permitted**

Table 12 reveals the consequences of not using social media as an extension tool by the extension personnel. Loss of contact with timely information was the major consequence (81.54%), followed by inefficient and inferior service (75.38%), isolates extension personnel (70.77%), loss of

relevance, confidence and credibility (67.69%), loss of competitiveness (54.41 per cent), loss of production and management efficiency (43.08%) and other consequences (23.08%) respectively.

Table 12: Consequences of not Using Social media by Extension Personnel (n=65)

Consequences	Frequency	Percentage
Loss of relevance, confidence and credibility	44	67.69
Loss of contact with timely information	53	81.54
Loss of competitiveness	34	52.31
Isolates extension personnel	46	70.77
Inefficient and inferior service	49	75.38
Loss of production and management efficiency	28	43.08
Problems in near future	46	70.77
Others	15	23.08

*Multiple answers were permitted

Table 13 reveals that out of 65 respondents, most of the respondents were agreed (47.69%) or strongly agreed (32.31%) that use of social media has enhanced their practice of extension. Whereas 6.15% respondents disagreed and 4.62% per cent strongly disagreed. 9.23% per cent respondents were neutral to this statement.

Table 13: Enhancement of Extension Practice through Social Media (n=65)

Response	Frequency	%
Strongly agree	21	32.31
Agree	31	47.69
Neutral	6	9.23
Disagree	4	6.15
Strongly disagree	3	4.62
Total	65	100.00

The respondents were asked whether the social media has a positive influence on shaping the future of Agricultural extension or not. Table 14 reveals that out of 65 respondents, most of the respondents were agreed (44.62%) or strongly agreed (27.69%) that use of social media has a positive influence on shaping the future of Agricultural extension. Whereas 6.15% respondents disagreed and 4.62% per cent strongly disagreed. 16.92% per cent respondents were neutral to this question.

Table 14: Positive influence of Social media on shaping the future of Agricultural extension (n=65)

Response	Frequency	%
Strongly agree	18	27.69
Agree	29	44.62
Neutral	11	16.92
Disagree	4	6.15
Strongly disagree	3	4.62
Total	65	100.00

8. CONCLUSION:

From reviews and findings of the survey, it is clear that social media is fast becoming an integral part of agricultural communication and it is being readily accepted as the next big thing in agricultural extension service. Though agricultural organizations are slowly adapting to the changing scenario, faster actions are required to better utilize social media. Extension specialists need to take personal initiative to use social media as part of their job within the norms of institutional guidelines. Continuous engagement at individual level is needed for mass influence and to carry out fruitful discussions and encourage rural communities to get involved. Encouraging farmers, agricultural entrepreneurs, and agribusinesses to directly connect with consumers through social media can raise awareness about agriculture in the general public and increase income. The dramatic changes that have taken place in the last decade in ICT have touched almost every field of human activity, and agriculture is not an exception. Social media has tremendous potential to revolutionize the way information, knowledge and new technology is managed, developed and delivered to farmers. E-Agriculture can revamp the Extension Advisory Service with providing proper training to extension personnel on ICT and its application in agricultural extension.

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