

Role of social media in advancement of aquaculture in Bangladesh: Potentials and challenges

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Abstract. Aquaculture production contributes 56.24 percent of the total fish production in Bangladesh. The study was conducted to explore the role and feasibility of social media in advancement of aquaculture in Bangladesh and its potentiality and challenges. Nowadays internet is used by 57.2% of total population of Bangladesh. Social media has become ubiquitous and social capital allows a person to draw on resources from other members of the networks to which he or she belongs. To collect empirical data a number of qualitative and quantitative tools such as questionnaire interviews, focus group discussion and oral history from different stakeholders were employed. The study identified 40 communities about aquaculture techniques, systems and information sharing on Facebook, the most popular social media in Bangladesh. Bangladesh is a country consisting of different remote areas such as Haor regions, hilly regions are not easily accessible for physical extension work of fisheries and aquaculture. Establishing the social media as a bridge between extension organization and fish farmers can contribute to make more profitable and sustainable aquaculture sector. On the other way, social media can play important role in fisheries and aquaculture research field. Based on literature review, interview from different stakeholders the research analysis has proposed a conceptual frame work for potentiality of social media in advancement of aquaculture in Bangladesh. The study has also identified the challenges of establishment of social media as a tool for aquaculture extension service and prepared some recommendations. The study has found, Social media can be used to spread new techniques and culture practices to the field. Building community network, developing community infrastructure and community based fisheries management will be also easy to implement through the utilization of social media.

Keywords: Social Media, Aquaculture, Framework

Introduction

Bangladesh is a country of rivers and tributaries. These water bodies are abounding in fishery resources. Fisheries is one of the most promising sectors for Bangladesh. The economy of Bangladesh mostly dependent on fisheries for the last few decades. The overall growth performance from inland aquaculture shows a moderate increased trend due to dissemination of improved technology packages and supportive/need-based extension services at farmer's level. In comparison to 2008-09 FY production (10.63 lakh MT), the aquaculture production became more than double in 2017-18 FY (24.05 lakh MT) (DoF 2018). The Ministry of Fisheries and Livestock (MoFL), Department of Fisheries (DoF), Bangladesh Fisheries Research Institute (BFRI), and Bangladesh Fisheries Development Corporation (BFDC) are the main organizations for development of aquaculture in Bangladesh. Universities, organizations within other ministries, local and international NGOs are also involved in this sector. The total population of Bangladesh is 168,065,920 and 96,199,000 people use internet among them which is 57.2% of total population. Besides this 28,000,000 people use Facebook in Bangladesh (Internet World Stats). To achieve the current challenges, several socio-eco-friendly programs are being

implemented to increase the productivity of inland open waters. These programs include community based fisheries management, establishment of beel nurseries, stocking of fingerlings. Besides this social networking site can be good tools for the people of remote area in Bangladesh. The people easily can adopt the new technology and required information from here. It can also contribute to save endangered species, restoration of habitats, establishment and maintenance of sanctuaries, expansion of cage and pen farming in feasible water areas etc. The study was conducted to assess the present status of utilizing the social media for development of aquaculture in Bangladesh. The study also identified the role of social media in developing this sectors, its potentials and challenges.

Materials and Methods

Study site and period: The geographical areas considered in the study as potential for utilize social media as an extension tool where physical access is going tough. Sylhet, Sunamganj, Baniachong upazila of Habiganj and Bogra districts were the study sites. The study period was January to July 2019.

Data acquisition and analysis: Primary data were collected through in-depth individual interviews with different stakeholders. Hundred interviews were done with 70 interviews from fish farmers, 15 interviews from extension personnel and 15 interviews from academic personnel. Interviews were semi structured and also gave chance for free flowing chat. The empirical data were tabulated and analyzed through Microsoft excel (version 2016).

Results and Discussion

Present status of utilizing social media in advancement of aquaculture: The present study portrayed that majority (92%) of the fisheries extension personnel use Facebook as social media to connect with others. Beside this, 24% use Instagram, 2% use twitter and 89% use YouTube (Fig. 1). They share assorted contents of new technologies and practices of aquaculture on social media from their idiosyncratic accounts. Connected fish farmers show interest inquisitiveness on their shared contents and extension personnel tries to give them explicit information.

The analysis also disclosed that fish farmers also use smart phones as well as they use social media only for get updates and connect with others from the social system where they belong. Most of the surveyed fish farmers (67%) use Facebook as social media, 4% fish farmers use Instagram and 2% fish farmers use twitter and 24% of them use YouTube (Fig. 2). Even, it was also found that the fish farmer who live in the remote area also use the Facebook in a daily basis.

Fish farmers try to gain knowledge on technologies from social media. They are associated to different Facebook communities. The study found almost 40 communities for sharing information of aquaculture and problem solving on Facebook (Table I). In these groups both professionals from fisheries sector, researchers, students and fish farmers are belonged. These Facebook groups are an exclusive space for its users to interact, discuss and share information of common interest.

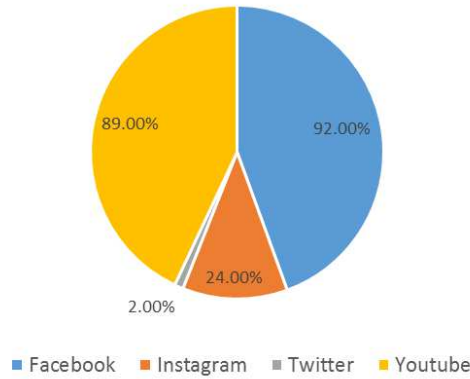


Fig. 1. Preference of different social media by extension personnel.

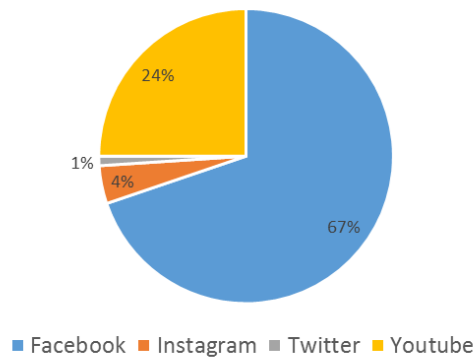


Fig. 2. Preference of different social media by fish farmers.

Perceived benefits of utilizing social media in aquaculture development: From the questionnaire interview of different stakeholders, the study identified beneficiary effects of utilizing social media for development of aquaculture in Bangladesh.

Useful in seeking solutions to these problems: a. Fish larvae matters, b. Health management issues of fish, c. Water quality issues, d. Feed affairs.

Aquaculture cultivation technique: (a) Preparation phase of aquaculture, (b) Feeding method (c). Water quality management, (d) Disease and parasite management, (e) Production control, and (f) Harvest.

Marketing facts: (a) Advertising (b) Promotion, (c) Selling

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Table I. List of aquaculture related platform on facebook in Bangladesh

Sl No.	Name	Type	Member	Activity (per week)
01	Biofloc fish farming Bangladesh Aquaculture and Hydroponic	Closed Group	2,000	70+ posts
02	Color Fish Association of Bangladesh	Closed Group	2,900	65+ posts
03	Nature Based Fish Farming	Public Group	19652	23+ posts
04	Kazi Abed Latif Online Fisheries Academy	Public Group	1981	14+ posts
05	Fishing Materials in Bangladesh	Public Group	466	16+ posts
06	Biofloc Fish Farming Support Bangladesh	Closed Group	254	28+ posts
07	Fisheries for sustainable Development	Public Group	136	17+ posts
08	Biofloc Technology Bd Technology Dependent fish Farming	Public Group	2079	6+ posts
09	BioFloc Agro Farm – Z&Z Agro Farm	Public Group	132	12+ posts
10	Fisheries Bangladesh	Public Group	17644	9+ posts
11	We are fish farmer Bengali!!	Public Group	8563	10+ posts
12	Nature and technology in fish farming	Public Group	776	4+ posts
13	Aquaculture in Bangladesh	Public Group	5784	8+ posts
14	Bangladesh Fish Farmer Association	Public Group	3137	9+ posts
15	Bangladesh Aquaculture and Fish Farming	Closed Group	5959	11+ posts
16	Fish Farming	Public Group	2861	10+ posts
17	Pond Fish Farming Entrepreneur	Public Group	4021	13+ posts
18	BANGLADESH AQUA ZONE (B.A.Z)	Public Group	11000	26+ posts
19	Biofloc Fish Technology Bangladesh	Public Group	152	4+ posts
20	Biofloc Product & Help Center	Public Group	229	4+ posts
21	Biofloc Farming System Official Group	Public Group	49	3+ posts
22	Fish Diagnosis & Consultation Center	Public Group	14	2+ posts
23	Biofloc Fish Farming	Public Group	59	4+ posts
24	Biofloc Problem and Solution	Public Group	160	3+ posts
25	Biofloc Project Discussion & Research Biofloc	Public Group	110	3+ posts
26	Technology-based fish farming	Public Group	1431	7+ posts
27	Rajibul's Biofloc Fish Farming group	Public Group	261	2+ posts
28	Borsi Market	Public Group	1119	6+ posts
29	Pond Fish Farming	Public Group	47828	51+ posts
30	Biofloc Bangladesh	Public Group	115	4+ posts
31	To Dream Angler BD	Public Group	710	5+ posts
32	Bangladesh Aquarium plant Buy and sell	Public Group	1721	3+ posts
33	Fishkeepers BD	Public Group	4354	6+ posts
34	Bangladesh Fisheries Community	Facebook Page	8895	10+ posts
35	Pond Fish Farming	Facebook Page	9878	12+ posts
36	Department of Fisheries (BD)	Facebook Page	6321	19+ posts
37	Fisheries in Bangladesh	Public Group	860	14+ posts
38	Bangladesh Aquaculture Group (BAG)	Public Group	1000	21+ posts
39	Aquaculture Business Bangladesh	Public Group	1800	6+ posts
40	Bangladesh fisheries forum	Public Group	99	5+ posts

Updated information sharing: (a) Aquaculture merchandise, (b) System and technology, (c) Current issues on aquaculture, and (d) Price variation

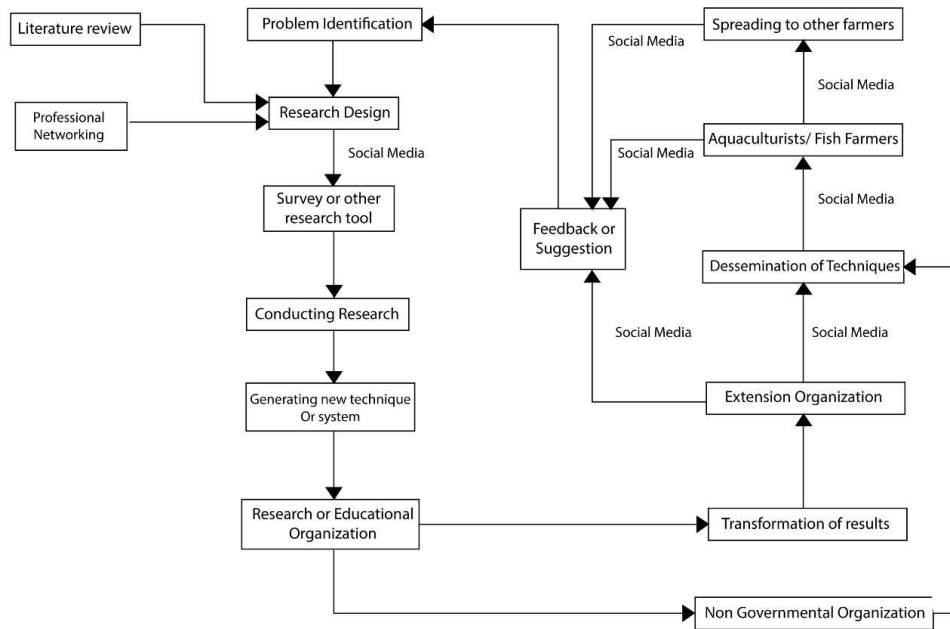
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Fig. 3. Conceptual framework on role of social media in advancement of aquaculture.

Role of social media in aquaculture research: Fisheries researcher utilize social media as tool for collecting empirical data as farmers share their problems and research needs on social media. Social media nowadays plays active role in transferring feedback of technologies.

Conceptual framework on role of social media in advancement of aquaculture: The study revealed information sharing and extension of aquaculture through social media is scattered in Bangladesh. A systematical approach is needed to implement social media utilization in development of aquaculture in Bangladesh. Based on scientific research and data, the research analysis has proposed a conceptual framework for the potential role of social media in advancement of aquaculture in Bangladesh.

Constraints analysis of utilizing social media in advancement of aquaculture: Based on empirical data, the research analysis identified some major constraints of present practice or utilization of social media in aquaculture advancement. These are: (a) Incongruous posts and content sharing, (b) Tardy internet connectivity, (c) High internet data requirement, (d) Lack of adequate connected fisheries personnel on social media, (e) Inconveniences in understanding and proper application of information, (f) Fake information sharing and rumor, (g) Lack of knowledge of farmers on using safe internet, (h) Lack of adequate platform and contents

regarding aquaculture problem solution issues, (i) Lack of systematic and authorized platform for technology transfer, demonstration and information sharing, (j) Lack of adequate administration on user's behavior and shared contents on social media.

Social media have become already popular in developed countries as an extension tool of aquaculture. In Bangladesh it is now utilized in a sporadic way. Ibrahima *et al.* (2018) found 58 aquaculture related communities on Facebook in India. The majority (88%) of scientists confirmed having a Facebook account, and 75% indicated that they used Facebook to follow pages that focus on science, while 33% indicated that they were administrators of a page that focuses on science (Collins *et al.* 2016). In the workplace scientists are using social media. And the feedback of technologies can be gathered through social media. As social media is popular in Bangladesh and many fish farmer nowadays can afford smartphone, then it could be the prime extension tool of aquaculture in near future.

Implementing proper strategies, highly systematic administration and establishment of authorized platform can ensure the sustainable utilization of social media in development of aquaculture in Bangladesh.

Recommendations: Based on literature review, observations, interview with relevant stakeholders, the following recommendations have been made to ensure secured and sustainable utilization of social media in advancement of aquaculture in Bangladesh: (a) Improvement of internet connectivity, (b) Establishment of authorized platform on social media and should be managed by authorized personnel, (c) Awareness raising and training should conduct on using safe internet among fish farmers, (d) Adequate demonstration of technologies and practices through audio-visual contents should be shared, (e) Minimizing the extent of irrelevant and fake information sharing, (f) Smart phone application can be developed for fish farmers to give solutions on their problems, (g) Collaboration of specialists from aquaculture, fish biology and genetics, aquatic resource management and fish health management for information sharing and problem solution, (h) Fish farmer's queries can be answered by utilizing live sharing services of different social media, (i) Scattered information sharing platforms on social media should be organized and authorized, (j) Build up the practice of feedback sharing of technologies through social media to the authorized platform

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