

A Study of Hashtag Activism for Raising Awareness about Riverbank Erosion in Bangladesh

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ABSTRACT

Millions of vulnerable people around the world are suffering from intensifying climate-related disruptions that could be construed as limits problems. Because those who suffer the most are often the most marginalized, these communities are largely neglected by governments and national media. In rich countries, social media has enabled ordinary citizens to add their voices to the public discourse. In the Global South, access to Internet and social media technologies is extremely constrained. In this paper, we study how, despite these barriers, communities in Bangladesh that are chronically affected by riverbank erosion are managing to use Facebook to participate in “hashtag activism.” This activism makes some progress toward filling the information gap regarding the impacts of riverbank erosion in Bangladesh, and can inform the national media and government for taking action.

CCS CONCEPTS

•**Human-centered computing** → *Field studies; Empirical studies in HCI; Social media; Ethnographic studies;*

KEYWORDS

Social Media, Online activism, Limits.

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1 INTRODUCTION

A wide range of intensifying disruptions such as desertification, drought, sea level rise, soil erosion, riverbank erosion, and increases in soil salinity are symptoms of the Earth’s physical limits relative to human activity. For example, millions of people are affected by desertification [21] and vulnerable to sea level rise and coastal erosion [30]. These disruptions have profound consequences, but they

do not prompt the scale of humanitarian intervention and media attention triggered by the more dramatic and visible crises caused by acute events such as typhoons or military conflicts. In this paper, we focus our attention on riverbank erosion in Bangladesh as an illustrative instance of a disruption whose effects accumulate less visibly than the “disasters” that receive regular attention. Most of Bangladesh’s terrain consists of floodplains. It is thus one of the most vulnerable countries in the world to flooding and riverbank erosion, resulting in the impoverishment and forced displacement of millions of citizens. Riverbank erosion is projected to worsen through climate-related changes [1, 24, 25], yet it has been largely overlooked by government and non-governmental agencies and is rarely discussed in mainstream media. In this paper, we present a study of citizen participation that examines how a resource-constrained community is responding to the problem of riverbank erosion through digitally-mediated collaboration.

Social media can provide an alternative channel for communication and discussion of topics that fail to prompt the attention of mainstream media, and of government and non-governmental organizations. Hashtags (#) are used to index, order, and accumulate public dialog into coherent topical threads [6]. “Hashtag activism” has thus provided some ability to inject new voices into public discourse. For example, #Ferguson and #HandsUpDontShoot, hashtags that arose around the murder of Michael Brown in the US, gave marginalized citizens the opportunity to protest police brutality and media representations of their concerns [6]. Social media is also a tool for emergency and crisis response. This use has been a modal focus of “crisis informatics,” a branch of human-computer interaction [2, 17, 42].

Yet technology access is not consistent across all populations. Many disruptions occur in some of the most impoverished communities in the world among populations with limited access to technological infrastructure. These populations may also have low rates of literacy [18, 44, 47], compounding problems of access. Precisely how these communities are engaging with digital technologies for responding to ongoing disruptions is the topic of this paper. This work is preliminary, based on a small case study, but suggests some ways that digital media may come to play a role in disruptions even when technology access is limited.

Our case considers “limits” in two senses. The first sense concerns the stresses that human activity places on the Earth’s physical limits and the resulting disruptions such as climate change, extreme weather events, and loss of biodiversity. The second sense concerns limited technology, a common scenario in much of today’s world, but also a possible future scenario in a world of collapsed economies

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transitioning to new modes of production [41] (see also [35]). We studied a case of hashtag activism which began in Ramgoti and Kamalnagar, two “Upazilas” (administrative sub-units of a district) in the Lakshmipur district of Southern Bangladesh. Ramgoti and Kamalnagar are situated on the banks of the Meghna River, one of the three major river systems of Bangladesh. Lands within proximity of the Meghna are highly prone to erosion [16].

As in much of the Global South, technology penetration in rural Bangladesh is limited. Yet, in the summer of 2016, users native to Ramgoti and Kamalnagar began to discuss the issue of riverbank erosion on Facebook using the hashtags #saveramgoti and #savekamalnagar. The posters felt that the mainstream Bangladeshi media and institutional responses were insufficient. They began to fill an information gap by sharing pictures, videos, and stories of riverbank erosion on Facebook. As a result, a localized hashtag activism effort grew to bring increased visibility to the issue. The posters were from the younger generation who, with better education, employment, and technical know-how, were able to use digital technology effectively. Many of these hashtag activists were migrants living in urban areas of Bangladesh or abroad who posted on behalf of their friends and family still in Ramgoti or Kamalnagar, i.e., those directly affected by riverbank erosion.

There were three key outcomes of this hashtag activism. First, it made visible online, at least to some extent, local problems of erosion. Second, the activism prompted news coverage which provided exposure for the erosion problem in Ramgoti and Kamalnagar. Third, it eventually broadened collective participation to other aspects of community life. Though initially tightly focused on riverbank erosion, the Facebook activity gradually expanded to discussions of both trivial and non-trivial aspects of life in Ramgoti and Kamalnagar; in other words, a community formed, engaging the various things, great and small, that make up common social bonds.

2 RELATED WORK

Early work on online communication predicted the Internet’s potential to reformulate existing power relationships and transform society. In 1987, Rice and Love observed that computer-mediated communication could “change the psychology and sociology of the communication process itself” [36]. Even before that, Kochen called computer-mediated communication a “new linguistic entity with its own ... pragmatics” [22]. More recently, Nardi reviewed empirical studies of online activism, finding many instances of robust, effective activity [29]. Manovich discussed the continuing evolution of social media [27]. Downing described activist uses of social media as “radical media” that facilitate alternative opinions and expressions regarding policy, perspectives, and approaches, arguing that, “A proliferation of such media would be vital, both to help generate alternatives in public debate and also to limit any tendency for opposition leadership, whatever forms it took, to entrench itself as an agency of domination rather than freedom” [14]. Rosen wrote, “[P]eople formerly known as the audience are simply the public made realer, less fictional, more able, less predictable. You should welcome that, media people. But whether you do or not, we want you to know we are here” [37]. Asad et al. noted that social media can play an important role in facilitating civic

participation in the democratic process through the affordances of hashtags [3]; see also [12].

The notion of “slacktivism” [9, 23] looms as a deflating counterpoint to these optimistic portrayals of social media activism. Yet there is solid evidence indicating significant potential for social media. For example, Starbird and Palen studied Twitter use during the 2011 Egyptian protests, finding that posters were not only participating online but were also actively present and functioning “on the ground” [40]. In the 2010 earthquake in Haiti, volunteers organized a rescue operation through Twitter [38]. After the 2008 Sichuan Earthquake in China, people discussed relevant issues in Tianya, a popular online discussion forum [34].

3 BACKGROUND

Bangladesh is situated in the easternmost corner of South Asia. With an area of 147,610 square kilometers (roughly the size of Greece), it is home to around 171 million people [7], making it one of the most densely populated countries in the world. Economic growth is about 7% a year, primarily from the ready-made garment industry. While Bangladesh has made progress in reducing poverty [4], improving women’s rights, and in other important areas, it is challenged by widespread corruption [19], rapid population growth (the fertility rate has declined but the population is young with many women of childbearing age), deteriorating infrastructure, and vulnerability to environmental decline [5]. According to the 2007 IPCC report, a 40cm rise in sea level may permanently engulf 11% of the total area of Bangladesh, creating an estimated 10 million internally displaced persons [33].

Erosion is tied to sea level rise [33]. Riverbank erosion is the gradual attenuation of riverbanks due to the ongoing pressure of water flow. The intensity of the erosion depends on water level, volume of water, oscillation in water flow, trajectory of the river, and sediment quality of the river bank. In Bangladesh, an estimated 2,000-3,000 kilometers of riverbank are susceptible to chronic erosion [20]. Riverbanks of the large river systems consist primarily of loose and granular sands and silts, easily eroded by oscillation in water flow. The stream of water causes gradual disintegration in the bottom layer of the riverbank. Failing to uphold the weight of the upper layer, the land collapses into the river, becoming part of it.

Chronic land loss wreaks economic havoc in Bangladesh’s rural agriculture-based economy. It is responsible for an estimated \$500 million loss annually [31]. One of the most pronounced outcomes of riverbank erosion is widespread migration, both temporary and permanent [28]. However, government and NGO response to riverbank erosion is largely limited to structural engineering measures (as in many other developing countries) [15].

Digital technology use in Bangladesh is limited by lack of access to electricity, Internet, computers, and mobile phones. It is further limited by lack of technical knowledge, and even basic literacy. These circumstances are similar to those in other developing countries [8], particularly in rural areas [26]. In poor countries like Bangladesh, even applications such as Facebook are a luxury due to the cost of use [45]. Although 40% of Bangladeshis have mobile phones, penetration is much lower in rural areas.

4 METHODS

We first learned about hashtag activism in Ramgoti and Kamalnagar as a part of a larger study we conducted in South Bangladesh [46]. To investigate more deeply, we collected Facebook data from November 2016 to February 2017, searching posts set to “public.” We focused on Facebook since our ethnographic observations suggested that it is the most popular social network system among Bangladeshi Internet users. We searched Twitter, but came up with only five tweets pertinent to riverbank erosion. As we will report, there was a lively discussion of riverbank erosion on Facebook.

Facebook introduced the hashtag feature in 2013. Hashtags on Facebook facilitate topic-oriented communication just as they do on Twitter [12]. However, unlike Twitter, the Facebook search API does not allow programmers to search public posts with a set of search hashtags. Thus, we manually searched and archived Facebook posts, searching the following hashtags: #kamalnagar, #helpkamalnagar, #megnariver, #rivererosion, #saveKamalnagar, #saveKamalnagar-Ramgoti, #rivererosionInBangladesh, #saveramgoti, #saveLakshmipur. This list of search keys was generated iteratively beginning with three hashtags: #savekamalnagar, #saveramgoti, and #savelakshmipur. Through qualitative analysis of the posts and snowball sampling, that is, co-appearance of a relevant hashtag in a post that contains one or more keywords that have appeared in relevant posts already, we iteratively created the full search list. The snowball process continued until we compiled an exhaustive list. We identified a post as relevant if the post included information about riverbank erosion in Kamalnagar, Ramgoti, and/or Lakshmipur, or pictures, videos, news article, or blog posts related to riverbank erosion in these areas.

For each post, we archived the text, images, videos, external URLs, comments, geo-location information, and timestamp. User-generated data can be shared from either a private account or a Facebook page. Both individual users’ posts and Facebook pages were studied. For each user, we collected publicly available demographic information including current location, age, education, and profession. Almost all the posts were written in Bengali, the native language of the posters. The hashtags were in English even if the post was in Bengali. Quotes in this paper have been translated by the first author who is a native speaker. Posts originally in English are so noted. All the posts, news articles, and pictures were coded using Dedoose [13], an online qualitative coding tool. We iteratively coded the data to find emergent themes [11].

We omitted duplicate and irrelevant posts through manual screening of the data, consistent with the practice of other researchers studying social media (e.g., [43]). The corpus contained 159 unique Facebook posts posted by either individual users or by pages. It is possible that we missed collecting some other relevant data due to the privacy settings of posters. In addition to individual posters, we identified five pages and seven groups that posted about riverbank erosion related to Ramgoti and Kamalnagar. We also identified three online newspapers—Banglanews24, lakshmipur24, and coastalbangladesh—that published news articles reporting on these hashtags. Banglanews24 is a nation-wide news outlet while the other two are local.

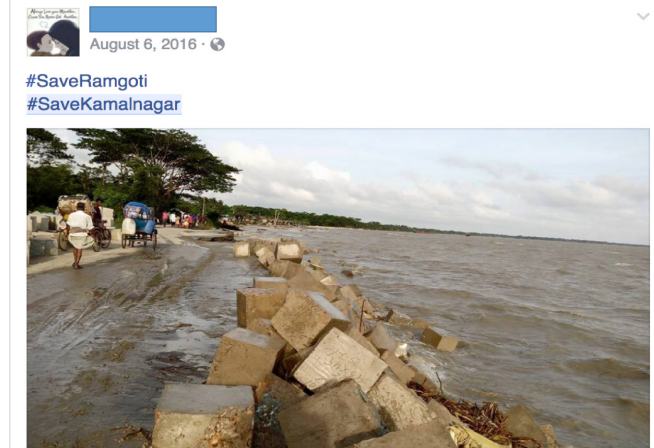


Figure 1: A Facebook post of a picture of an eroded riverbank in Ramgoti, with hashtags.

5 FINDINGS

Though the hashtag activism we observed started in a small geographic region of Bangladesh and reached a small audience, a surprising amount was achieved. In this section, we discuss who was posting, what they talked about, and some of the outcomes.

5.1 Hashtag Activism

Posters were between the ages of 16-34. Their education ranged from high school to college. All were native to Ramgoti and Kamalnagar. Many, however, were professionals and students based in the capital city of Dhaka, or abroad. For example, one poster whose native village was in Ramgoti, and who was educated in Dhaka, was living and working in Kashiwa, Chiba, Japan. He posted this Facebook post in English, arguing that the government should take necessary steps to stop riverbank erosion in Ramgoti:

“Government should take immediate step and allocate necessary funds to construct embankment in order to protect Kamalnagar and Ramgoti Upazila of Lakshmipur district from dangerous river bank erosion problem. #StopRiverErosion #SaveKamalnagar #SaveRamgoti”

The posts we analyzed primarily contained two hashtags: #saveramgoti, #savekamalnagar (see Figure 1). Some posts also contained #erosionLakshmipur. The rationale behind using the #erosionLakshmipur tag was that Ramgoti and Kamalnagar are administrative parts of Lakshmipur district, therefore, this hashtag would draw the attention of Facebook users around the district.

Many posters were learning to use the hashtag feature and did not yet have an understanding of the underlying dynamics of hashtags. They used the prescribed set of hashtags because their peers suggested them. For example, a news article that featured hashtag activism quoted a local journalist who himself participated in hashtag activism in Facebook to demonstrate how to use hashtags for activist purposes:

“Regarding how to use hashtags, a local journalist of Lakshmipur24, Mr. Sana Ullah Sanu informed us [journalists], ‘Facebook, Twitter, Google+, Youtube you can put #ramgoti before or after your picture,



Figure 2: A journalist posting in Bengali on a Facebook group.

status, or video. That's it. You don't need any extra knowledge for this.' He added that anyone can learn more about Ramgoti simply by clicking on the hashtag. To find out about Kamalnagar he simply clicks on #savekamalnagar. If you click #erosionLakshmipur you can learn about riverbank erosion in Lakshmipur district irrespective to Kamalnagar and Ramgoti." A college student in Lakshmipur described the hashtag as a way to reach government stakeholders responsible for carrying out riverbank protection measures. He asked his friends to post photos or stories relating to riverbank erosion:

"People of Ramgoti-Kamalnagar, I'm asking for your attention. This August 5, we all will post pictures of riverbank erosion in Ramgoti-Kamalnagar with slogans and draw the attention of people all over the country. I think in this way we can make our voices heard by the government. But you have to put hashtags in the posts. #saveramgoti #savekamalnagar. We have only one slogan—'Save us from the mighty Meghna.'"

The majority of the posts contained images. Among the 159 posts, only 21 were text-only. Images included pictures of eroded riverbanks, and damaged public infrastructure and private properties. Three posts contained videos. The pictures and videos were taken with multimedia mobile phones.

Posts included information about both public and private property damage. Individual loss, though very important for estimating the accumulated loss of property and infrastructure, has been almost entirely absent from mainstream media. However, only three participants reported damage to property owned by themselves or their families. Some reported damage to property belonging to peers. For example in Figure 2, a journalist working for a local newspaper, "Coastal Bangladesh," collected pictures to post on Facebook:

"On 19th July, I visited some areas on the Meghna Bank and collected these pictures. The mighty streams of the Meghna have washed away a house compound near the Nasirganj Fish Market. The land is about to collapse into the river. People, one after another, are losing their properties in this way. When should we raise our voices? Will we have budget once the whole of Kamalnagar is gone? #savekamalnagar #saveramgoti #erosionlakshmipur."

Many posts contained geo-location information like place names and road names. Such information in social media can facilitate relief and rescue efforts [32]. While the information may not be precise, for situations like riverbank erosion, it could help prioritize structural interventions in areas that are more intensely affected, documenting property damage. For example, this poster shared a picture of a location in Kamalnagar suffering from severe erosion:

"The most neglected, under-developed, and disconnected area in Kamalnagar Upazila is Kadir Panditer Hat. #savekamalnagar"

5.2 Creating Awareness

Two main ideas were represented in the posts: 1) public infrastructure is insufficient and poorly-maintained in Ramgoti, Kamalnagar, and nearby areas in the Lakshmipur district, and, 2) the local government should be held accountable. Thus, the objective of hashtag activism was to create awareness regarding the problems of erosion to make the government respond to the issues 3. Posters attributed insufficient institutional interventions to the negligence, inefficiency, and corruption of local government. For example, this poster accused the locally elected member of breaking an election promise:

"Chronic erosion is taking away everything from us. Everything! Where is our due allocation? Where are our leaders who promised a lot of things before the election? What benefits would our leaders have if we did not exist? Erosion is eating up approximately 1 square kilometer every month. The more areas we lose, the more they lose legitimacy. This needs to stop."

Posters noted lack of transparency in the riverbank protection initiatives. For example, one noted that budget allocations for building dams were not well-articulated and that people should demand follow-up through Facebook posts: "As we all know, government has already allotted a huge amount of money to avoid #rivererosion of Kamalnagar. Now it's our duty to follow up and demand that the local administration take necessary steps as early as possible; otherwise, the situation can get worse and can severely damage our lives."

Another poster explained why it was necessary to post about erosion within specific areas. He described social media as the only way to propagate news on riverbank erosion in Kamalnagar and Ramgoti:

"Friends, many would ask what would happen if we post? Some of us have to raise our voices. At least then people will know about the problem. The rest depends on our government. But we have to speak for our rights. What other options do we have but to write in social media? #saveramgoti, #savekamalnagar"

Collaborative community response towards riverbank erosion is part of social life in riverine areas of Bangladesh. In a separate ethnographic study of four district of Bangladesh, we observed a rich ecology of community collaboration in immediate and long

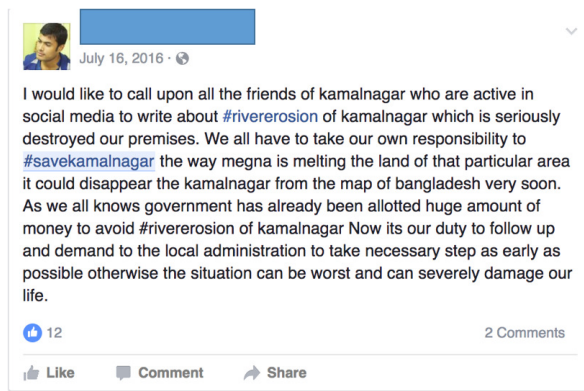


Figure 3: A Facebook user urges his Facebook friends to participate in hashtag activism and put pressure on the local government.

term response to riverbank erosion [46]. Likewise, peer collaboration played an important role in accelerating hashtag activism. Many posts contained invitations to others to post pictures and stories on erosion using the prescribed set of hashtags. In some cases, posters mentioned peers by tagging them. For example, one poster tagged the following post with four of his Facebook friends:

"I'm sharing this photo which I took three years ago in front of the Adalat Hospital. We used to play in this field. That is a memory now. This place is gone for good. Friends, what memories can you recall?"

5.3 Tangible Outcomes

The posters' primary objective, according to the posts, was to create awareness and promote transparency in the governments' riverbank protection infrastructure building process. A specific objective was a large allocation to build a dam in Ramgoti and Kamalnagar. Activists wanted to promote transparency in the spending of this allocation. Pictures, videos, and stories generated local context for the problem to raise awareness. Activists considered this a successful intervention in drawing the attention of the stakeholders responsible for carrying out the work. For example, one poster said:

"I think people's posts in social media on riverbank erosion have been successful in drawing the attention of the government. #saveramgoti #savekamalnagar"

Another poster who was a student in Ramgoti and a member of a Facebook group named "Ramgoti Bachao Chatro Songho" ("Save Ramgoti Student Union") posted that the local Member of Parliament agreed to meet a delegation from that group:

"Friends, our MP has agreed to meet us on Friday evening. We will pitch the problems of riverbank erosion in our area and urge him to present the problem in the parliament. Everyone please try to attend the meeting."

According to the posts, the activism was directly responsible for initiating involvement from the political machinery to address riverbank erosion. For example, another post in the same group shared the following story:

"This Monday (11-07-16) at 6.20 pm in the afternoon, our honorable MP Mr. Al Mamun and a team of officials came to Ramgoti to visit erosion-affected areas. The MP had the opportunity to talk people who were affected by erosion recently. He assured to initiate bank protection measurement as soon as possible."

The collective activities of hashtag activism resulted in the formation of several online communities concerning Ramgoti and Kamalnagar. During the initial phase, activists created a Facebook group named "Hridaye Ramgoti" ("Ramgoti in Heart"). Activists added their peers to this group which engaged in online open-forum discussion of riverbank erosion. By February 2017, this group had 10,000 members. Although it's easy to join such groups, this is still a significant number of people showing interest in a problem, potentiating further activism. As the activism unfolded, gradually other Facebook groups and pages were created. We identified five related groups and nine related pages. While individual posts were the basis of the activism, these online communities helped amplify voices and reach a wider audience than individual Facebook users.

Though initially tightly focused on riverbank erosion in Ramgoti and Kamalnagar, the groups gradually flourished as multi-purpose online communities. Members of these communities shared trivial and non-trivial aspects of life in Ramgoti and Kamalnagar. Posts included sharing news of political and civil activities, and information about government construction campaigns and relief and loan distribution. Posters reported damage to public infrastructure, job vacancies, and small crimes. They posted religious messages, questions about all kinds of things, the success stories of locals, and recreational memes. A student in Dhaka who was a native of Ramgoti posted in the Hridaye Ramgoti group seeking blood donors for an emergency patient in Ramgoti:

"Please someone help! A mother in Ramgoti needs 2 bags of AB+ blood tonight. She is admitted to Shorkari Karmachari Hospital, Dhaka. Please share the post. Those who are interested in being a donor, please contact the following number..."

A key success of the Ramgoti-Kamalnagar activism was triggering news coverage in both local and national news media. We found several articles after the hashtag activity began that referred to the hashtags used in the activism and directly quoted several participants. Within the relatively short time window of our study, we identified seven news articles on riverbank erosion problems in Ramgoti and Kamalnagar in three online newspapers. These articles reported precise information on the erosion problem in Ramgoti and Kamalnagar, and sometimes also the lack of government intervention.

For example, one article published in November 2016 in Lakshmipur24.com reported on a land-reclamation project for which the government had allocated 1,980 million Taka (Bangladeshi currency). Another article, published in July 2017 in Banglanews24, reported that erosion disrupted transportation between Hajirhat and Kadirpondit Hat, two neighborhoods in Kamalnagar. Such stories were unprecedented in Bangladeshi news media, and a success story for the activists whose Facebook posts stimulated coverage of the erosion problem in Ramgoti and Kamalnagar.

6 DISCUSSION

In Bangladesh, only about 40% of the population of 171 million has access to the Internet [10]. Despite such limitations, we observed people who did have access to technology, and with ties to Kamalnagar and Ramgoti, facilitating online discussion to create awareness and promote community participation. Lack of regional voices in a marginalized community was mitigated, to a degree, by participation in social media. Our observations suggest that social media not only has the potential to alleviate information gaps for disruptions ignored in mainstream media, but also to promote awareness and intervention. In a study of feminist hashtag activism, Stache et al. argued that though hashtag activism is a good tool for demonstrating solidarity with a cause, it may not be effective for educating people who are not directly involved in the advocacy [39]. We have seen, however, that the case of Kamalnagar and Ramgoti is a counterexample to the extent that mainstream media picked up on the activism and republished the information in article format for broader audiences.

Though hashtag activism is new to Kamalnagar and Ramgoti, we observed its significant impact. This impact was not in the usual social media sense of something going “viral”—the activism certainly did not draw the attention of large numbers of Facebook users in Bangladesh—but impact in terms of reaching a targeted audience. The expressed objective of the hashtag activists was to reach stakeholders directly responsible for riverbank erosion prevention, mitigation, relief, and recovery. In this sense, the activism was successful as it provided information on riverbank erosion that could not be found in mainstream media, and, in turn, generated media exposure. While other offline activities (e.g., community meetings) undoubtedly contributed to the political action, hashtag activism helped bridge geographic distances to raise a collective voice online. Posters acted from concern about their friends and families in their natal regions, expressing compassion and the need for action. These users generated data and commentary that had never been discussed in mainstream media.

Posters considered riverbank erosion a collective problem and attempted to address the problem in a collective manner. Gradually, the activism went beyond riverbank erosion. Participants built robust online communities, engaging in discussion of trivial and non-trivial matters regarding life in Kamalnagar and Ramgoti. The hashtag activism thus eventuated in bringing people together. While some scholars worry about slacktivism [9, 23], slacktivism is not an inevitable outcome of the use of social media for political purposes, and we must be careful to contextualize social media activity in its broader framing, making sure not to rush to judgment about what social media can and cannot do. In the case we studied, people drew on long-standing social ties, often natal ones, and used social media to further develop and deepen those ties for socially constructive purposes. Posters had strong community connections, and leveraged them to raise awareness about the issue of riverbank erosion, and then to build more broad-based online communities. We saw in Bangladesh that posters used the technology to draw from cultures of solidarity and compassion.

7 CONCLUSION

In this paper we studied a remarkable hashtag activism effort surrounding riverbank erosion occurring in a remote region of Bangladesh. This action is particularly noteworthy because the activists represent some of the most marginalized communities in the world, and have managed to overcome tremendous barriers to technology access to raise their voices online. We learned that the local communities accomplished these feats with help from their younger generation who, having attained better education and migrated to greater opportunities, were able to gain access to online technology. This young diaspora is using online social media to re-establish ties with their communities of origin and create awareness about the critical issue of riverbank erosion otherwise neglected by the mainstream media and national government.

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