Social networking in a digital and mobile world: the case of environmentally-related migration in Bangladesh

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ABSTRACT
This paper interrogates how the social networks and the networking of migrants, and through that their migration trajectories, are being shaped by mobile technologies. I examine this through the case of environmentally-related migration in Bangladesh. This case, and the issue of environmentally-related migration more generally, provides new insights as it has a different context to most of the cases thus far examined to study the implications of ICTs on migration. In contrast to those studies, it is about internal movement. Such movement is highly dynamic with people frequently visiting places of origin or even trying to move back, and with travel routes being relatively safe and well known. It is less about smart phones and social media, as many of the most affected only have access to a mobile phone without internet. In that context, this paper shows that the use of mobile technologies does not necessarily lead to a drastic shift of social network structure towards the proliferation of weak ties. Rather, in this case, the impact is on how (often existing) ties that are geographically dispersed are utilised to enable mobility in a more coordinated manner, making mobility decisions more reflected on and to an extent less risky.

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1. Introduction

Migrants do not make decisions in a vacuum. These are embedded within and shaped by interactions with their family members, fellow migrants, contacts in the employment sector, with NGOs, etcetera (see e.g. Boyd 1989; de Haas 2010; Ryan 2011; Schapendonk 2015). Indeed, much literature has been written about the role of social networks in shaping human mobilities. It demonstrates the various ways in which people’s trajectories are ‘relational, connected and embedded rather than individualised’ (Larsen, Axhausen, and Urry 2006, 268). Social networks are increasingly conceptualised as flexible and open to change (Schapendonk 2015). This opposes the concept of a migrant’s network as something ‘static and grid-like entity that links pre-defined sets of strong and weak ties’ (Schapendonk 2015, 810). Actors in the networks may make new links along the way or may lose some, or relations get reconfigured.

The increased access to, and use of, information and communication technologies (ICTs) can play a role in that dynamism of migrants’ social networks. It could make it
easier for migrants to reconnect with old ties, or to make new connections relevant for their travel and settling in a new place (e.g. Dekker and Engbersen 2014). Or it may strengthen already existing ties through connections with the home front, making it perhaps easier to move to a new place (e.g. De Bruijn 2014). Much change is expected from ICTs possibly giving greater access to new or weak ties from which new information and opportunities can arise. In this context, Dekker and Engbersen (2014, 402) go as far as to argue that ICTs ‘actively transform the nature of these networks’ that migrants rely on.

Uncertainties however remain as to what exact influence ICTs have on social networks and migrant’s decision-making. In that context, this article asks how the social networks and the networking of migrants, and through that their migration trajectories, are being shaped by ICTs. Rather than it necessarily leading to a fundamental change in the network nodes, for example through making resourceful weak ties more crucial, this paper particularly identifies the change in the content of relations, as in how they are utilised to enable mobility or for mobilising help in a well-coordinated manner. Through the use of ICTs mobility decisions become more reflected on and to an extent less risky.

Specifically, I examine this for internal migration dynamics taking place in the context of environmental change. The case-study’s focus is on coastal Bangladesh – a place heavily impacted by cyclones, erosion and salination. This is an interesting case in the sense of the migration being largely internal, with many migrants still going back and forth between their new homes and places of origin. The migration is also highly varied in terms of being short or long-distance, temporal or more structural, quick or gradual, depending on the environmental impacts and socio-political processes at play. This case, and environmentally-related migration more generally, therefore has a different context to most of the studies done on the migration-ICT nexus which often centre on diaspora and transnational movement (e.g. special issue by Oiarzabal and Reips 2012), of which in particular refugees heading for Europe (e.g. special issue by Leurs and Smets 2018).

On top of that, this case-study shows how studying environmentally-related migration means much more than studying movement. The actual physical moving to another location is in this case a minor and quick step of the migration process, unlike the case of political refugees fleeing to Europe for instance (e.g. Gillespie, Osseiran, and Cheesman 2018). Often people did not move very far away, took well-known routes, did not move in big groups, and it often goes gradually with some of the family members already in the new place. It is rarely the case that someone suddenly decides to move to a different place. The actual decision and timing of moving to another place has long been reflected on. The focus of this paper is therefore not so much on the movement per se but rather on how ICTs shape decisions about leaving or circumstances that may facilitate mobility or possibilities to stay.

Last but not least, this study does not just centre on social media and smart phones, as many studies do. The mobile phone has become widely spread in many developing countries, but the proliferation of smart phones and internet connections are lacking behind. It is thus still also much of interest to examine the impact that access to feature phones (without internet) have (Horst and Miller 2006; Madianou 2015).

The article is structured as follows. Section 2 provides a background into the study of environmentally-related migration, followed by Sections 3 and 4 outlining the methodology and methods used to examine the ICT-social networking nexus in
environmentally-related migration trajectories. Section 5 provides the case-study. Section 6 discusses the findings and concludes.

2. Environmental change and human migration

Since the 1980s the role of the environment is gaining attention in the study of migration. It particularly took off at the end of the 1990s when climate change was gaining a high profile image in science, politics and the media (for overviews see Morrissey 2012; Piguet 2013). One of the most influential publications is by Norman Myers (2002). He warned of 212 million environmental refugees by 2050. His work triggered much counter-reactions and critique. As argued by Black et al. (2011, s4) such ‘assertions are largely based on “common sense” rather than insights from theory or evidence’. Several have also critiqued notions and argumentations that seem to imply a direct causal relationship between migration and climate change, for which, they argue, there is little proof (Black 2001; Castles 2002).

Current scholarly work on the environment, climate change and migration nexus increasingly tends to emphasise the complex and multi-causal relationships associated with these issues, taking account of economic, political and social factors (Black et al. 2011; Morrissey 2013). Within this multi-causal context of migration, it seeks to single out what role the environment plays (e.g. Morrissey 2013). In doing so, it takes a ‘pragmatist’ stance in the debate which ‘without any claim or ambition to numerically forecast flows of migrants, questions the role and weight of environmental factors in already-occurring displacements and attempts to build scenarios for the future’ (Piguet 2013, 155). The focus is mostly on processes of displacement or migration within countries, as those worst affected by environmental impacts are often relatively poor communities with little resources and connections to move far away (Foresight 2011). On top of that, many people do not want to leave their homes due to attachment of place (Adams 2016), and thus try to move close by if they cannot stay.

The study conducted for this article also places itself within this pragmatist school of thought. Whilst actively accounting for wider socio-political dynamics, it is relevant to study how migration processes unfold, look like and take shape, around cases where the environment is amongst the core drivers. In analysing this, I focus on the central role that social networks play in shaping migrants’ mobility steps and on the decisions that migrants make in trying to cope with a deteriorating living situation. As social network literature has long argued for, migrating, and the decision to leave, is a relational process and cannot be examined as separate from interpersonal interactions:

People are enmeshed in social dramas wherein actions depend upon negotiation, approval and feelings, and have social and emotional consequences. Individuals are always part of networks that both enable and constrain possible ‘individual’ actions. They are immobilised and mobilised in complex relational ways. (Larsen, Axhausen, and Urry 2006, 268)

This brings me to the next section, conceptualising how the emerging role of ICTs intersects with that.

3. ICTs and migrant social networks

The ICT revolution has rapidly simplified and expanded options of information exchange from land-lines, fax services, to more dynamic mobile technologies. In developing
countries, mobile technology has given a boost for connectivity, especially given the lack of landlines (Horst and Miller 2006). For example, in Bangladesh, mobile cellular phone subscriptions have risen from 1 to 83 per 100 people between 2002 and 2016 (World Bank 2018), with prices for basic feature phones and credit being low making it widely affordable, combined with the increased use of solar panels in rural areas used for mobile charging. Access to phones with internet is much more limited, however, and network access in rural areas fluctuates (Boas 2017). There thus remains a divide between those having access to feature phones only (no internet) and those with smart phones, and between the illiterate who are able to use the calling function of a mobile phone and those who are able to use a variety of ICT-functions (Madianou 2015; Boas 2017).

Such divisions go beyond technological development, access, skills and digital literacy alone (Tsatsou 2011a, 2011b). They are shaped by political and socio-cultural contexts and the different needs for ICT-usage that arise from everyday life (Horst and Miller 2006; Tsatsou 2011a, 2011b). For instance, whether to use a mobile phone, and who uses it or can use it and how, is informed by ‘specific domains of the everyday (e.g. workplace, social life, daily routines, etc.’ (Tsatsou 2011b, 74). Moreover, as demonstrated by Madianou (2015) in an analysis of disaster recovery, digital inequality can reproduce and strengthen social inequalities. In a time where self-reliance is the norm in post-disaster settings, digital exclusion can keep ‘people trapped in delayed recovery’ as they miss out on the opportunities and support communicated via social media (Madianou 2015, 2). The ICT revolution is thus by no means free from inequalities, which can take on different forms (Tsatsou 2011a, 2011b) and can vary per context (Horst and Miller 2006).

Even so, the ICT revolution is rapidly unfolding, with profound changes in how we communicate and exchange information (Castells 2009), having implications for human migration (Oiarzabal and Reips 2012; Dekker and Engbersen 2014; Gillespie, Osseiran, and Cheesman 2018). Here I want to scrutinise further what these impacts are, how strong they are, and how these interact with the social networks and networking of migrants. Building on Granovetter’s thesis (1973, 1983), it is often assumed that the expansion of weak ties is beneficial for a person’s network. By connecting to people or agencies outside the close circle of family and friends, access to information is increased, allowing for more innovation and opportunities to unfold. However, as emphasised by Ryan (2011), Granovetter does not just mean any weak tie being helpful in that regard. They are less valuable when being from similar social locations. They can still be helpful for people to facilitate moving or in getting access to a job, but not so much in the sense of ‘upward social mobility’ and may risk reinforcing social marginalisation (Ryan 2011, 713, 721). It is about ‘getting by’ as opposed to ‘getting ahead’ (Putman 2000, 23; cited in Ryan 2011). In that context, Ryan (2011) proposes to differentiate between horizontal and vertical weak ties: the first is about linking weak ties from similar social locations, and the latter about bridging social distances providing access to new opportunities, resources, and can empower. This begs the question, do ICTs help migrants to more easily connect with vertical weak ties, and what types of contacts are these? Does it help to actually transform social networks in this way and how does this affect mobility-decisions? To what extent do existing network dynamics of in/exclusion and unequal access to ICTs prevent that?

And if it does not actively lead to other network nodes, what role do ICTs have? How does it impact on the constellation of, and engagement with, strong ties? As emphasised by
Larsen, Axhausen, and Urry (2006) and De Bruijn (2014), facilitating strong ties to stay connected equally has its value; it is crucial for a migrant’s well-being and for the maintaining the ‘glue of society’ (De Bruijn 2014). Moreover, if staying connected becomes easier, social networks that are on a distance could be made useful for particular mobility problems that people are facing. In that sense, ICTs may not just have implications for who is in the network, but also on how networking takes place and what networks are used for.

4. Methods

Environmentally-related migration is often studied at places of origin or destination with a focus on what factors cause people to move (e.g. environmental disasters, poverty) and what factors attract people to certain places (e.g. economic opportunities) (e.g. Black et al. 2011). Little attention has gone into how decisions about mobility are being made. To study this, and to move beyond this push–pull orientation, I build on mobile methods and trajectory approaches ‘towards the following of migrants through places’ (Schapendonk et al. 2018, 3) and the related communicative travel at play (Larsen, Axhausen, and Urry 2006; Büscher and Urry 2009). In particular, I study how mobility trajectories are embedded within the distant and proximate personal social network relations of the respective migrants and how these are shaped by mobile technologies. I trace the information that is exchanged between the nodes via mobile technologies, and the social networks central to that person’s migration trajectory. For example, if I met someone planning to move to a certain place via a geographically-distant network tie, I would go and meet the relation in that other place to better understand their connection and how they picture the shift to look like. In doing so, also inspired by Horst and Miller’s ‘anthropology of communication’ (2006, 5) as a method to study cell phone usage, I take particular note of the local context and the existing forms of communication and information exchange in informing the role of the mobile phone in environmentally-related migration in Bangladesh.

4.1. The fieldwork

I limited my study of ICTs in Bangladesh to the usage of mobile technologies including smart phones (with access to internet) and feature mobile phones (without access to internet). The fieldwork took place between August and December 2017, and consisted of two research steps.

The first research step focussed on the coastal areas of Bangladesh where migrants are moving away from or back to. I often sat in tea-stalls, which are central places where community members hang-out, to gather stories and histories about the area. After doing several scoping visits and explorative interviews, I selected a set of representative mobility narratives that I researched in more detail. For this first step, I focussed on two sites heavily affected by environmental impacts. The first is in the Central-South of Bangladesh where I studied the southern Upazilas (local political districts) of the island and political district Bhola: Lalmohan and Char Fasson. Here I concentrated on two villages named Moham-mdapur (in Char Fasson) and Patoarir Hat (in Lalmohan) affected by erosion, storms and cyclones, and on village and harbour areas around the local Unions Hajarigonj and
Jahanpur (in Char Fasson) vulnerable to cyclones but not erosion. The second site is the island and Upazila Kutubdia in the South-East of Bangladesh, where I researched two village areas: one in the local Union Uttar Dhurung in the North heavily affected by cyclones, daily floods and salination due to a breach in the embankment; and one in the local Union Kayarbil in West Kutubdia heavily impacted by sea erosion, storms and cyclones.

The second research step was about tracing the nodes and information exchange central to the selected mobility narratives, which also led me to places where people move(d) to, such as neighbouring rural areas or nearby cities such as Dhaka, Chittagong and Cox’ Bazaar (see Figure 1 of an overview of the different sites). By following this trail, I gained an in-depth understanding of how the local social networks function and are utilised, of what ties such networks consist, and in particular how this social networking was shaped by ICTs. While doing so, I remained in contact with the interviewees in other places via mobile phone, to update them, to ask for further information or numbers if needed, and to check whether they were still OK with me tracing these connections. In total, I conducted over 125 interviews (individual and group-based).

For the analysis, I do not rely much on direct quotes from the interviews. By working with a local translator, it was difficult to get these in an exact form, and, more importantly, a good understanding of the narratives often only emerged after speaking to the same person several times. The examples in the analysis below are therefore reconstructed on

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**Figure 1.** Research locations in Bangladesh, shown in Google Maps.
the basis of multiple interviews and observations. The real names of the interviewees have been replaced with pseudonyms.

5. ICT-enabled networks for environmental migration in Bangladesh

The introduction of the mobile phone has had a major impact on connectivity in Bangladesh, with many areas not connected via land-lines and with low-priced feature phones and mobile phone credit. Calling via mobile phone has become a key avenue of communication.\(^1\) People call each other frequently and often just briefly, just to check-in. It is not odd to have five missed calls from someone. Texting, on the other hand, is much less popular. Partly because still many cannot read and write, and cheaper mobile phones do not support the Bengali characters whilst only higher educated group master texting in Latin letters.

Facebook is highly popular amongst those having access to the internet on their phones.\(^2\) It is actively used amongst the urban elite and is emerging in rural areas, for instance amongst the college students. Sharing pictures, in particular selfies, is a central means of communication via Facebook – showing images of oneself and one’s own life. People at times also post pictures of problems, for instance of flooded areas – though usually these were the well-connected village members doing this.

Those who do not own a mobile phone do occasionally use those of others. For instance, women not always have their own mobile phones but could use the one of their husband or son. The husband would then leave the mobile phone behind when going to work, whilst borrowing other people’s phones if having to call his wife whilst away. A similar sharing dynamic exists with smart phones. Whilst in rural areas many did not own this, I would occasionally see someone (predominantly a male person) in a tea stall showing pictures or playing news videos from his Facebook account showing it to others.

This overarching context of mobile phone infiltration and user practice in Bangladesh is also well visible in the analysis below showing the different ways in which mobile technologies enable social networks that allow for particular mobility practices.

5.1. ICT-enabled networks shaping mobility

Environmentally-related migration can take on many shapes, ranging from short-term emergency displacement to seasonal migration or even permanent relocation (Black et al. 2011, 2013; Gill, Calétrio, and Mason 2011; Boas et al. 2018). Leaving one’s place can thus mean different things. It can be short-term if people forcefully leave their homes to stay in a shelter for a few days or it can be more long-term when having to move to another place. It can be short distance such as moving house a few metres further away from the river, or it can be more long distance when having to move to a new village or city (e.g. Ingham, Islam, and Hicks 2019). On top of that, the migration can be temporary, circular, repetitive, or more permanent and stable (Gill, Calétrio, and Mason 2011). As the examples below will illustrate in further detail, this very much relates to the environmental impact being sudden and temporal, or gradual or even permanent (Black et al. 2011; Boas et al. 2018).
This case-study will therefore not just focus on permanent migration to other places, but also on temporary mobility or displacement in cases of disasters, and on people moving back or trying to stay put. Environmentally-related migration is thus used here as a broad notion, including various forms of (im)mobility and decisions on mobility.

I will demonstrate how social network relations that are not proximate are made relevant to these varying forms of environmentally-related migration through access to mobile technologies. The ICT-enabled networks discussed below are derived from local narratives I traced in Bangladesh and are thus based on primary data (see Methods for details). These ICT-enabled networks include networks for micro-coordination in times of emergencies; networks enabling options to leave or to return home; and networks enabling collective action seeking to prevent migration. Most of these networks consist of relatively poor communities, living in highly vulnerable locations to environmental change, without much structural connection to more well-off groups or non-governmental organisations. They live close to the river or the coast protected by poor embankments and thus are most vulnerable to cyclones and erosion. Their ICT-access is mostly limited to basic feature phones (without internet). The exception is the final ICT-enabled network discussed below, being of a more collective nature led by the more affluent groups in Bangladesh. It is relatively more mixed in terms of ties from different social locations, and includes active smart phone usage.

5.1.1. Micro-coordination in times of emergency

Cyclones come suddenly. Warnings can start early on but may still reach areas late or only few hours before if directions of cyclones change (Lu et al. 2016), or when areas are cut off from proper information flows (Ingham, Islam, and Hicks 2019). In Char Fasson and Kutubdia, affected by some of the more recent cyclones that hit Bangladesh (Char Fasson – Cyclone Mahasen 2013, Kutubdia – Cyclone Roanu 2016 and Cyclone Mora 2017), this resulted in, one the one hand, people staying put to save their belongings or being stuck unable to move to safer areas, and on the other hand, people forced to leave their homes to take shelter or using their mobility to save livelihood resources several kilometres away. It was about temporary shelter and temporary mobility as people returned to their living areas after the storm had gone and water levels had gone down to fix or rebuild their houses.3

When temporarily leaving houses during the storm, quick information exchange was crucial to micro-coordinate coping strategies. The mobile phone is central to enable that (given the mobile towers are still functioning, which they did in case of Cyclone Mahasen, Lu et al. 2016). As argued by Ling (2000, 112), in introducing the notion of micro-coordination: ‘the mobile phone allows for a type of very precise adjustment of everyday activities’. Responding to a cyclone is no everyday activity, but does require very precise and frequent coordination between those affected. Being able to call each other makes it possible to find out quickly what the situation is like some kilometres away, which is crucial to make a decision about the most effective strategy to take. For instance, in Char Fasson many people reported to be calling each other actively during extreme storms (including Cyclone Mahasen) to coordinate actions to secure and protect the fishing ships at the harbour (Boas, Dahm, and Wrathall 2019).4 In this way, trade-offs between saving belongings, securing livelihoods, and protecting lives by going to the shelter, could more easily be made. People could quickly enquire whether it was
safe to go to the harbour and to coordinate what help was needed, and to check-in with the family whilst at the harbour. This includes a mix of existing strong ties and horizontal weak ties, as this mainly involved exchange amongst families, friends, boat owners and co-workers they already knew and worked with on a daily basis. For example, Zakir, a local fisher, reported to use his mobile phone when at the harbour, to advice other fishers to come whose boats were damaged. Along similar lines, another local fisher reported to have asked few of his crew members to stay at the ship during the storm to protect it. He constantly communicated with them via mobile phone to know whether all was under control or whether more support was needed. Also these crew members at the ship used their mobile phone to communicate with their families at home or in the shelter to check whether they were safe.

Another example of such micro-coordination in times of emergency are cases where part of the family resided in the shelter while another part of the family was elsewhere or unfound. For example, Sahana took shelter with her husband during the cyclone. The next morning her husband returned home to assess the damage, then calling her to say all got destroyed. Women married to fishers also reported to use their mobile phones (or those of others) to trace their husbands if still out on sea during a storm. They would try to call him first, followed by the other fishers on the boat. If no response, they would send someone to the harbour to wait for the husband’s return and to report back.

These examples show the central role of the mobile phone in allowing for community networks to exchange accurate and up-to-date information for decision-making in times of distress. This is particularly vital as many of the coping strategies involve some form of mobility. Families need to be in different places at the same time to protect their lives and livelihoods, whilst needing to stay in touch to remain up-to-date on each other’s safety.

5.1.2. Enabling options to move away

Most of the people I met did not move away to another village, region or city on a more permanent basis just because of a cyclone. It can play a role in such movement, but often combined with problems of economic-political nature and more gradual dynamics of environmental change with unmanaged long-lasting impacts, such as erosion or salination (see Black et al. 2011). In North-Kutubdia, for example, salination has become a key reason for people to move after the embankment got severely broken following several cyclones and storms whilst not being fixed.

Even under these circumstances, people try to stay as long as they can. Often people do not necessarily want to move away (Adams 2016), nor do they directly know how or what the possibilities are to do so. Over the years an increasing number of people from Bhola and Kutubdia have moved to urban centres, leading to high land and rent prices, with cities being full and slum areas often facing eviction threats to make space for roads, airports and middle-class urban housing. As such, several people I spoke to see their options as limited. A common strategy is to move more in-land – to move the house bit by bit away from the water. Others move to the side of the embankment, where land is often free (as it is government land). But embankments get increasingly full, plus people may be evicted if the government wants to make changes to the area. That is when the real challenge starts.

Whilst people take it step-by-step, the need of eventually having to move does not come as a surprise either. This is where mobile technology comes in – to facilitate the possibility
to move should the need arise. This took shape three ways: First of all, people raise the matter when meeting friends and family in other places, to explore possibilities, and they stay in active phone contact to better guarantee a potential move away. Second, people use mobile technology to create or (re)active a contact that can directly be of help. Third, people draw on mobile technology to keep the family well connected when having to move one by one.

The story of Morsheda from North-Kutubdia well typifies the first dynamic. Morsheda, together with her husband and children, lives in an area that is on a daily basis affected by tidal water, with many houses damaged and agricultural fields destroyed. So far they have not had the chance to move away. Thus whilst not an ideal situation, they have managed thus far. Her brother-in-law lives on the mainland facing Kutubdia, where the land is a hillier, fluffy and green. She has become very close to her sister-in-law – Kadiza (the brother-in-law’s wife). She regularly visits them with her children, also during times when the water level is too high for the children to stay home. When being there she actively asks around for opportunities to stay – in a temporary house on someone’s land or possibilities to get a new piece of land. Currently, Kadiza is also staying in a temporary house on someone else’s land, and actively helping to persuade others that Morsheda’s family can do the same. Thinking in the long-term, she is looking for land they could buy together, although for now they do not have the money to afford it. Morsheda and Kadiza, but also Morsheda’s husband and his brother, are in frequent mobile phone contact about this, calling each other frequently. After every severe storm or flood, Morsheda and Kadiza call each other about how ‘fed up’ they are with the situation that is becoming increasingly dangerous for Morsheda’s children.

Morsheda’s story well reflects that mobile phone technology has been central in maintaining social ties that can facilitate mobility for when the time comes. In this way, the relations are kept warm, the topic remains of urgency, making it a real possibility for Morsheda and her family to move to the same area, even if only temporarily, if the situation demands it. In most of such migration narratives traced, including the one by Morsheda, the ties people rely on are strong rather than the weak ones. Most of the people in the areas under study keep in close contact with family members or close neighbours who moved away – if not too far away they would visit each other especially during important festivals. This contact-frequency has increased with mobile phones as migrants and those still in places of origin reported to call each other a few times per week. In doing so, as Morsheda’s story exemplifies, people make some kind of promise or agreement to help each other out would the need arise. Such informal agreements stay active as people can continue to discuss this via phone.

Whilst Morsheda’s case shows the use of mobile technology to connect with strong tries to help secure possibilities to move away, the following case of Mofis well reflects the second role that mobile technology has played – namely in activating horizontal weak ties that can facilitate mobility. In the areas under research, several people – including Mofis – were searching for jobs as salt water had affected agricultural fields or as floods had destroyed the market area, including shops and stores where people work. This did not necessarily mean that they needed to move away with their families. It often meant that some members of the family, usually male members, needed to find work elsewhere. In these efforts, the family often actively helps in looking for work opportunities via their
wider extended family network who they could connect to via mobile phone. Mofis from Mohammadpur (Char Fasson) lost his tea stall due to river erosion and subsequently wanted to move to Dhaka for work. His grandmother (also living in Mohammadpur) provided him with the phone number of an uncle named Arif working in the garment industry at Dhaka’s harbour. This was an uncle he had never met before but could connect to because his grandmother secured the connection. She had done so by calling her daughter in Dhaka married to Arif to explain the situation and subsequently connected Mofis with Arif. As Mofis’ case highlights, mobile technology allows people to activate resourceful family ties who in the Bangladeshi culture are expected to help because of the family bond, even if they do not directly know the person in question (making the bond between Arif and Mofis initially weak, though they have grown very close after the shift to Dhaka). Without a mobile phone, this connection could still have been made – by just going to the area to find the person in question. But via mobile phone contact, the legitimacy of the connection could more easily be secured. Whilst this tie did not enable ‘upward social mobility’ for Mofis in Dhaka, his story does show how it has been crucial for him to quickly and safely organise a new job and to start a new life in the city, even if it was with people from a similar social location.12

Third, and finally, mobile technology plays an important role of in ensuring that the actual migration can take place step-wise. It helps in keeping everyone connected as the family often does not move at once but leaves in phases that may take months or even years. A typical example of such a step-wise migration process is based on a migration narrative from a family from Kutubdia.13 This family first had to move more in-land due to sea erosion, and then had to move again as the new house was too small for the whole family to fit. The oldest son of the family had left for Chittagong to find a better job and to find a place for his family to stay. His mother and youngest brother followed several years later. Two other brothers stayed in Kutubdia, and a sister went to Cox’s Bazaar to get married. By calling, the family has stayed well connected, could discuss when and how others could move as well, and continues to strategize about whether or not the remaining brothers should follow suit. As this family story resembles, in Bangladesh it is often a male family member that leaves first, to see how the new place is, to find a job and to see whether it is possible for the other female and older members of the family to join as well. Calling each other regularly is the main mechanism through which these distanced families stay connected and informed.

All in all, this shows how support networks of strong and horizontal weak ties are actively maintained or can be (re-)activated via the use of mobile phones (see also Horst and Miller 2006; De Bruijn 2014), and how this enables the option to migrate temporarily or on a more permanent basis or if wanting to migrate step-wise. It becomes easier to keep a support network alive allowing someone to move should the time come; it makes the choice to leave more informed; and it helps keeping family members informed about whereabouts and the relocation.

5.1.3. Enabling the return home

Just as mobility is dynamic, so is the Bangladesh landscape with its highly dynamic river delta where land is gradually disappearing, whilst reappearing in other places (see e.g. Haque and Zaman 1989, also on the associated politics and injustices).14 The eroded
areas in Bhola have seen numerous embankments, which get broken by erosion and are poorly fixed with temporary sand-based embankments, with many wholes remaining. Whether a stronger concrete-based embankment will be made depends on the existence and execution of a tender for a new or improved coastal embankment (and thus political will, available funds, and the level of corruption around the execution) (see also Ingham, Islam, and Hicks 2019).15

Once the concrete blocks for the embankment actually start to appear on the shore – which can be after years or even decades of waiting – people get excited. Hope returns. What is interesting to see in such instances is the dynamic of people wanting to move back, to resettle in their places of origin (see also Kuhn 2003 on processes of return in Bangladesh). Mobile phone communication plays a key role in facilitating this drive to return. By sharing photos, via Facebook or Messenger, and to spread the news that something is happening. Nonetheless, not many people actively used Facebook in the area where this embankment is being made (Mohammadpur, Char Fasson). It is an area with low 3G connectivity and many inhabitants do not own a smart phone. Simple calling came up more frequently during the interviews as a way in which people were spreading the news and were strategizing about the new situation.

A migration narrative representing this dynamic of return is from Babul, from Mohammadpur (Char Fasson). He lives in Dhaka to earn more income after his family experienced land loss due to the erosion and floods from storms, whilst his wife and children stay in Mohammadpur. However, he is gradually moving back to Mohammadpur on a more permanent basis. After years of waiting, the concrete blocks to make a stronger embankment had finally arrived, new strong sluice gates had been made, making the area better liveable (at least, in the near future). In this new situation, he got the idea to start investing in a family-run sweet water fish business in his home town, hoping that he could stop working in Dhaka. He has been buying pieces of land to make sweet water ponds – one already finished, and he has others in the making. Babul cannot do this alone. He is not the only member of the family who had to work elsewhere, now wanting to return to make a sweet-water pond fish business. So do his two cousins. This family network of young men is in active mobile phone contact (they call each other every 3–4 days) to update each other on the situation with the embankment, to discuss progress and problems and doubts about whether it is ever going to get finished, and of course their strategies and plans for their new business. They see it as a serious project and as a way to reunite with their families.16

Through such active mobile phone contact, part of the family network can maintain their jobs in Dhaka to produce income, whilst the others can focus on the new business in the home town. They can discuss their strategies, ensure a balance in responsibilities and tasks, and coordinate their mobility around this effort (when going to Dhaka, how long to stay in Dhaka, when to go back). Thus the fact that they can stay in active contact via mobile calls helps to ensure that moving back becomes something planned, organised, coordinated and most of all less risky.

5.1.4. Collective action to prevent further migration
The diaspora in new locations are not all relatively poor immigrants that had to leave their houses behind. Many are more wealthy and higher educated community members who
left to study at the university or to get a better paid job in the city. Particularly in the city of Chittagong there is a well-connected wealthy diaspora from the island Kutubdia organised via the Kutubdia Association.

The Kutubdia Association aims to better connect the Kutubdia diaspora in Chittagong – though limited to the richer and well-educated members of this community. On top of that, they actively try to help Kutubdia in becoming a safer and more prosperous island.\textsuperscript{17} In that context, the Kutubdia Association has organised a protest action in the form of a human chain in the streets of Chittagong city following cyclone Mora that hit Kutubdia in May 2017. They aimed to raise awareness of a broken embankment in Kutubdia that worsens with every cyclone and ongoing erosion, making some areas unliveable. They demanded supervision by the Bangladesh Navy of the reconstruction of the embankment to overcome the ongoing corruption scandals that have led to serious delays and poor quality construction work.\textsuperscript{18}

They were able to attract much attention to the protest and in this way succeeded in making the government promise to take action via the Bangladesh Navy – although the actual implementation remains to be seen. Facebook was a key channel to achieve that. This was led by a university student originally from Kutubdia. He made an event page and a Facebook group specifically for the action, and has actively been posting on the subject. In this way, he argued, ‘it is easier to reach people, to promote the event. I can even do it from sitting in my home, you do not need to go to all peoples’ houses for impact.’\textsuperscript{19} He was not just any student but a well-connected one, also vertically upwards to the political establishment, and in this way could use Facebook quite effectively in reaching a wide audience.

Via Facebook, the human chain action became something people in Kutubdia itself were talking about. To know and see via Facebook that people living in Chittagong are going to the streets to fight for their livelihoods and land, resonated. It made them feel connected and less abandoned. At the same time, however, most of the people on Kutubdia seeing such posts and images about the human chain action were those with access to Facebook: meaning, young college students in Kutubdia, and especially those groups being somewhat more middle or elite class such as businessmen and those active in government parties, Council Members, etc. These groups also post pictures themselves of flooded areas, damages to the embankment, salinated areas, to help raise awareness among the affluent diaspora in Chittagong, having connections to press, funders and government.

In that sense, via the photos shared on Facebook, some weak ties – including vertical weak ties – were made, but limited to those having access to Facebook. Many of the most vulnerable groups living closest to the coast and in the most dangerous zones are often relatively poor and do not have such access. They were less aware of these developments and less involved. In that sense, the enabled network remained relative elitist and activated horizontal weak ties within similar social circles, or expanded vertical upwards from the more affluent community members and diaspora to more powerful political actors such as members of parliament by sharing Facebook pictures. It did however not actively involve the most vulnerable groups, and thus forged no vertical weak ties with the more low-income or marginalised groups. Digital inequality in this way reproduces social hierarchies and strengthens certain support and information networks whilst excluding others from it (see also Madianou \textsuperscript{2015}).
6. Concluding discussion

To conclude I discuss these findings from two angles. First, I reflect on what the increased access to mobile technologies implies for the social networks and networking of migrants and in what way these are utilised to enable particular mobility practices. Second, I discuss the impact on the migration trajectories themselves.

6.1. Shifts in social networks

This case-study gives little indication of mobile technologies to actively transform the social networks towards a proliferation of vertical weak ties. Instead, existing strong ties – in particular (extended) family members, close friends and (former) neighbours who people are very closely connected with – remain central for decisions about moving and the stages beyond that. Especially on a village-rural level, there is often a very close interaction with the extended family and neighbours, and that often makes up the basis of the network. When connecting to weak ties, the case demonstrates these were usually of a horizontal nature.

Part of this can be explained by the particular context of this case, shaping what role of the mobile phone plays in ways of connecting and communicating (Horst and Miller 2006). This case-study is about migration within a country that has a strong hierarchical culture where it is difficult to arise from one’s social location particularly when being from a lower income group. As such, the digital divide and social inequalities can mutually reinforce each other (Madianou 2015), preventing social networks from becoming more vertical for some. In that context, many of the poorer and less empowered community members I spoke to did not seem to believe in their own ability to raise awareness and support for their community, for instance via collectively using Facebook to spread the word about their situation. Instead they frequently referred to the respected and connected village members or the government as the only avenues where action can come from. Thus whilst social networks ‘can move’ (Schapendonk 2015), there are limits, especially if wanting to connect to more vertical ties (Ryan 2011). Migrants and communities at risk face social and cultural obstacles that are not necessarily easy to overcome.

On top of that, the fact that environmentally-related migration is often internal and relatively localised also can make it less likely for networks to very actively open-up to new ties. Migrants do not get exposed to a very different socio-political context when staying relatively close to places of origin, also making it possibly less of a need to actively engage oneself in new vertical connections.

Despite these limits, the case-study does show its important influence on the way in which the geographically distant relations are used, even if being already existing strong ties. Via mobile technologies these are kept close and made relevant to facilitate or coordinate someone’s mobility – both in the sense of trying to stay, moving away and returning to places of origin. As distance becomes less of an issue, it becomes easier to collectively reflect on, or discuss, mobility strategies and to do so in a very precise and coordinated manner. In this way connecting with strong ties does more than what Dekker and Engbersen (2014, 407) have identified as a continued ‘feeling of intimacy’ amongst friends and families making moving away emotionally easier to do. It also does more than the ‘(re) celebration of belonging’ (De Bruijn 2014, 332). This is because the role, and thus the
content of these ties, becomes different when they are or become geographically distant, and particular if they have gone to similar processes of movement themselves. Through ICTs these ties can easily provide up-to-date information about a new place and on what is needed to get there. Close friends and (extended) family members already in other places are then vital nodes to connect with to enable mobility in a coordinated fashion. For example, for the case of step-wise migration of one family, the pioneering members can easily report back and keep the moving process informed by real-time information. Similarly, in the case of the friends and cousins returning back home, the ties in the various locations can easily exchange information about what is needed to organise this most effectively. In that sense, the fact that they are in different locales, affords them a particular knowledge, making them key agents of information exchange in facilitating human mobility.

6.2. Migration trajectories

The movement to a new place was in this case a small and familiar step. The routes taken are not new, and the places are not that far away. People frequently travel around in the region by public transport which is relatively affordable. I often took the same route, travelling by bus, boats, ferries, jeeps and tomtoms. Occasionally I would see people who I met earlier, heading somewhere for work or to visit family members, showing how much of a common and regular mobility that was. It is in that sense less of an adventurous journey that people have to take compared to refugees fleeing their country (e.g. Gillespie, Osseiran, and Cheesman 2018). It also does not mean that people have to say good bye to their place of origin, as it is possible to move back or to visit, and indeed people occasionally (especially around religious festivals) do return to visit family and friends who are still there.

In the context of internal migration in Bangladesh, other than perhaps expected when thinking about people on the move, mobile technologies play a very minor role in the actual travelling to a new place. Even when having a smart phone, people are not actively relying on Google Maps or other applications to find their way. The routes are well known, and if unclear, the norm is to simply ask around.

Instead, I very much focussed on the steps around the movement itself, and particularly on the decisions about staying or having to move or to return, and how access to mobile technologies enabled that. Also in this context, the analysis did not indicate a drastic change in the migration trajectories, in the sense of people going to new or further away destinations because of new information and opportunities they received. Bangladesh consists of a highly dynamic delta area, with areas of land disappearing and emerging from the water. Moving around and changing house, has therefore been a common practice for a long time. In that sense, the quick and coordinated communication afforded through (basic) mobile technologies well intersects with that culture of (forced) mobility.

The case did show how mobile technologies better enabled people to rely on mobility if the situation demands so. In this way, mobile technologies did not lead to a drastic change in migration trajectories in the sense of new routes and including other places, but did make these trajectories more coordinated.

In sum, access to mobile technologies does not necessarily lead to a drastic shift in the network structure. In this case of environmentally-related migration in Bangladesh it instead remains a constellation of mostly of strong ties and horizontal weak ties. But
there has been an active shift in how these ties, if geographically distant, are used. Precisely because of their distance and afforded assets (e.g. experience with migration; contacts in destinations; information about places) they become particular helpful to enable mobility, and the decisions around it, in a more coordinated and precise fashion. As a consequence, the decision to move becomes more reflected on and in that sense less risky.

Notes

1. This information is based on field observations and interviews.
2. What’s App is much less used. Twitter is not popular.
3. This account is derived from field observations and interviews.
4. Based on interviews, individual and group-based, with fishers, their family members, red crescent officers, head of the dockyard, boat investors, and other bystanders.
5. Interview 27-8-2017, Hajarigonj, Char Fasson.
6. Interview with crew members of the ship, 7-10-2017, Jahanpur, Char Fasson.
7. Women focus group, 23-10-2017, Hajarigonj, Char Fasson.
8. Women focus group, 23-10-2017, Hajarigonj, Char Fasson.
9. This account is derived from field observations and interviews.
10. Reconstructed from interviews with Morsheda and Kadiza on 19-09-2017, 21-09-2017, 28-09-2017, 15-11-2017, and from regular visits to their houses and surrounded areas, and regular phone contact with Morsheda.
11. Interview Kadiza, 28 September 2017.
12. Based on interview with Mofis in Mohammadpur, 9 October 2017, several visits to his work and living place in Dhaka in November and December 2017, and a visit to and interview with Arif on 27 November 2017.
13. Based on interviews with the family members in Kutubdia (in-depth interview on 13 September 2017 including frequent subsequent visits in September and November, and regular phone contact), in Chittagong (with interviews on 8 September 2017, 22 and 25 November 2017), and in Cox Bazaar (26 September 2017).
14. See http://aqua-monitor.appspot.com.
15. This account is derived from field observations and interviews.
16. Reconstructed from interviews with Babul and his cousins on 21, 23, 24 October 2017, 4 November 2017, and 3 December 2017 (in Mohammadpur and Dhaka), and regular visits to Babul’s house, the fishpond, and surrounded areas, including the workplaces in Dhaka.
17. Based on interviews with and visits to this association, 22–24 November 2017, Chittagong.
18. This account is derived from interviews.
19. Interview, 24 November 2017, Chittagong. Quote slightly altered to make it direct and correct English.
20. See http://aqua-monitor.appspot.com.

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