Urban Livelihoods in an era of climate change: household adaptations and their limitations in Dhaka, Bangladesh

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Abstract

The threats posed by climate change in Dhaka city and their implications for the livelihoods of the urban poor speaks to the urgency of a better understanding of household livelihoods and of whether and how low-income urban households can make successful adaptations to the increased economic, social and health vulnerabilities that they will face. In-depth research across four low-income communities across Dhaka highlights the coping strategies available to the urban poor in the face of climate change, which affects them primarily in the form of increased heat stress and rainfall. Both extremes create difficulties in working lives and magnify the health insecurities of the urban poor. Crucial, however, is recognition of the limitations of the strategies available to them. Endemic insecurity means that low-income urban households are ill-equipped for household stability throughout the year, leaving them with little room for manoeuvre for coping or adapting during extreme weather events and periods. The paper finishes by highlighting the dangers of taking a narrow and depoliticised focus on the household, its assets and its livelihoods strategies, as this overlooks the broader community- and city-wide structural constraints that limit household agency and the opportunities for livelihoods diversification, adaptation and improvement available to them. Focusing on climate change adaptation to improve livelihoods security for the urban poor may highlight the increased urgency of taking measures to assist them, but simultaneously, such a focus on livelihoods may overlook some of the key drivers of their poverty and the key constraints households face to overcoming it.

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1. Introduction
Bangladesh’s rapid urbanisation has been accompanied by large increases in urban poverty, which is a distinctive and unrelenting feature of urban life in Bangladesh. Reports highlight that human development is either stagnating or actively deteriorating in urban areas (World Bank 2007). The tipping point at which Bangladesh’s poor population becomes predominantly urban is expected to occur within this generation (Banks et al 2011). While 35% of the urban population lived in low-income urban settlements in 2005 (CUS et al 2006), the country’s urban poor have remained largely ‘statistically invisible’ due to a number of measurement inadequacies (Rahman 2011). Climate change impacts will accelerate Bangladesh’s ongoing urbanisation, as well as deepen the scale and severity of urban poverty and the vulnerability of the urban poor (Banks, Roy and Hulme 2011). This paper focuses on its impacts on household livelihoods and the ability of households to cope or adapt to the additional challenges climate change brings.

The following section explores urban poverty in Bangladesh in greater detail and illustrates the changes that an era of climate change will bring to urban livelihoods. Using recent empirical research in Dhaka, Sections 3 and 4 explore the livelihoods strategies of the urban poor, and whether and how they are able to adapt these to cope in the context of climate change. We ask, given their limited resources, are households coping with or adapting to the threat and impacts of climate change? Following this, Section 5 moves on to highlight one important limitation to viewing household livelihoods as the central focus of climate change adaptations for urban poverty reduction. Doing so overlooks one of the biggest drivers of urban poverty, and one which places significant constraints on household livelihoods for the majority, namely the informal systems of governance that dominate resource allocations in informal settlements and create and reproduce inequality across households. Consequently, opportunities for adaptation are vastly constrained to those within these closed social networks constituting the bustee elite. Section 5 then concludes.

The analysis draws upon research conducted in Dhaka between September 2008 and July 2009. The research was carried out across four low-income urban settlements in central and peripheral Dhaka, using a variety of methods that included 22 focus group discussions, community surveys covering a total of 420 households and 77 in-depth interviews with ‘coping’ and ‘improving’ households.3

2. Understanding Urban Poverty in Bangladesh in an era of climate change
In Bangladesh, low-income informal settlements, or bustees, are places where physical, social, economic and political vulnerabilities collide, creating a multi-layered blanket of vulnerability for their low-income residents (Banks 2012). Frameworks for understanding urban poverty encapsulate these multiple vulnerabilities by viewing it as an accumulation of asset deprivations (See, for example, Moser’s 1998 Asset Vulnerability Framework adapted specifically for use in urban areas). Similar to rural-focused sustainable livelihoods frameworks, these frameworks highlight urban poverty as a result of: limited, irregular and insecure incomes (a lack of financial capital); unsanitary and environmentally hazardous environments (a lack of natural capital); sub-standard and poorly-serviced housing with insecure tenure, often as rental tenants (a lack of physical capital); limited skills and education, and chronic illness, malnutrition, and routine health shocks (a lack of human capital); and limited social networks for support and assistance (a lack of social capital).

2 See Banks, Roy and Hulme (2011) for a detailed illustration of the ways in which existing data and measurements underestimate the scale and severity of urban poverty in Bangladesh. For other international case studies see Mitlin and Satterthwaite (2012) and Carr-Hill (2013).

3 Banks (2010) gives a full overview of this research and its methodology.
When set against a backdrop of the urban context, these deficiencies mean that livelihoods for the urban poor are characterised by ongoing insecurity. The commoditisation of the urban economy means that households can rarely depend on their own production for survival, be it for food or shelter and must rely upon cash incomes to meet all of their basic needs (Moser 1998). Urban living brings new costs of living to place pressure on low household incomes, including water and fuel, transport, clothing, and social services, amongst others (Mitlin and Satterthwaite 2012). The high cost of living mean that income generation is critical to survival and places employment at the centre of livelihoods strategies (Amis 1995; Moser 1998; Mitlin and Satterthwaite 2012).

The urban poor face multiple obstacles to securing steady employment on good terms. High levels of informality and casualised labour, the limited absorptive capacity of formal and informal labour markets, fierce competition and subsequent low wages, and strong rigidities in the labour market by social status, education and neighbourhood are all obstacles to better employment outcomes (Amis 1995; Rakodi 1995; Mitlin and Satterthwaite 2012). At the household level, limited skills, qualifications and experience and regular health disruptions further limit the ability of the urban poor to access more or better employment (Pryer 1993; Amis 1995; Rakodi 1995; Moser 1997; Mitlin and Satterthwaite 2012).

Three main categories of employment are available to the urban poor in Bangladesh: unskilled labour (rickshaw-pulling and unskilled day labour), small business, and formal sector or skilled work that requires some level of qualifications, skills and experience (Banks 2012). Urban livelihoods can be distinguished by these occupational categories in terms of security, stability, prospects for advancement, and subsequently, the perceived desirability of these jobs (Pryer 2003; Banks 2012, Zingel et al 2011). Unskilled labour offers little stability and few opportunities for mobility, while formal sector jobs are viewed most prestigiously by focus groups, as well as revealed to increase a household’s likelihood of doing better over time (Banks 2012).

Figures 1 to 4: Employment opportunities for the urban poor in Dhaka (Clockwise from top left: daily construction labour, rickshaw-pulling, small business, day labour unloading boat cargo)
Unskilled labour dominates employment opportunities for the urban poor, illustrating the limited barriers to entry into this sector and the opportunity this offers to those lacking skills, qualifications and experience to join the urban labour market. With the exception of the daily incomes these opportunities provide – making it easier for households to balance incomes and expenditures – unskilled labour offers few other benefits. Low incomes and work irregularity provide little scope for household advancement, generating instead uncertainty and risk amidst problems of work irregularity and a dependence on physical labour. Many day labourers report securing only 10 to 15 days work each month. It is no surprise, therefore, that only seven percent of households in the four communities were headed by a day labourer, illustrating that this is unviable as a household’s core economic support (Banks 2012). Rickshaw-pullers can work more regularly and flexibly according to needs and abilities, but physical exertion dampens long-term prospects for their mobility given the context of poverty and malnutrition in which they work (Begum and Sen 2005).

For those able to accumulate sufficient capital, starting a small business is a preferable option, accompanied by greater prestige and not dependent on physical labour. Difficulties accumulating capital when supported by irregular and insecure work, however, prevent the majority of workers from pursuing this dream. It is also important to look more closely at the opportunities arising for successful small business, which requires a deeper understanding of a context of severe overcrowding of high turnover and low returns trading (Wood and Salway 2000). Small businesses vary considerably in size and profitability, highlighting the dangerous misconception that small business is a viable route out of poverty for all. Only one in four households in our survey reported household improvements supported by small business, and the research also revealed many households struggling to recover from failed business (Banks 2012). With most businesses in the bustee setting characterised by low-management capacities, businessmen and women can rarely separate business and household cash flows. This means that when businesses struggle, household incomes suffer too, and vice versa, with business capital often depleted as a means to bridge income gaps. Largely serving poor clientele raises additional obstacles, with businesses operating largely on credit and facing large fluctuations in prices and demand due to seasonal change and other co-variant shocks.

The third option for low-income workers for diversifying their livelihoods opportunities is through gaining skills or qualification and moving towards formal sector employment. This pathway is viewed as largely inaccessible by bustee residents, however, with most lacking the qualifications and social contacts necessary. Furthermore, we must look beyond access towards the terms of access on which such jobs are secured. While perceptions of formal sector jobs suggest relative stability and job prestige, most busteebashees accessing jobs in this sector access informal ‘temporary’ contracts characterised by low salaries, long working hours and job insecurity. While the lucky few accessing these jobs on formal contracts benefit from high salaries (including lunch, travel allowances, and sick leave), job security and scope for promotion or salary increases, access to these jobs on these terms is strongly mediated by social connections (Opel 2000; Banks 2013). As one respondent explained,

For bustee people there are high-profile jobs available. The problem is people cannot find them [...] You need a mamu (uncle) to connect you to jobs. This person can be inside or outside the bustee, they can be relatives or friends, political or non-political. I don’t know of any way you can get a job without this.
We will return to this, and its implications on understanding urban poverty and adaptive capacities in Section 4. First, we must look more closely at household livelihoods, providing the background against which we must assess the impacts and effects of climate change on urban livelihoods.

3. Struggling for Security: Livelihoods Strategies of the Urban Poor in Dhaka
Given the pervasive economic insecurities that the urban poor already face in securing their livelihoods, are households equipped with the resources they need to cope with or adapt to the threat of ongoing climate change impacts? Before answering this question we need to look more closely at household livelihoods, so we have a better understanding of how climate change impacts threaten to exacerbate already vulnerable and insecure livelihoods. The reality is that low-income urban households in Dhaka have few weapons in their arsenal for coping, let alone adapting to the threat of climate change. The day to day lives of the urban poor are a constant struggle, leaving few resources to cope in the face of emergencies. As this section will discuss, low-income urban households deploy several strategies to help households cope or to reduce vulnerability. What is important to emphasise, however, is the limitations to their effectiveness in their day to day lives, let alone when the additional threat of climate change impacts is brought into question.

The previous section provided an overview of employment opportunities available to the urban poor in Dhaka. This highlighted that while households depend on income to meet all of their living costs they are largely dependent on irregular and insecure forms of employment for income-generation. High costs of living in combination with a hostile and uncertain labour market results in constant pressure on household incomes and expenditures. One survey found as many as 70 percent of bustee households in Dhaka unable to fulfil their daily income requirements (Salway et al 2003). Another survey highlights nearly one in three low-income households in Dhaka reporting a ‘severe’ financial deficit, 30 percent reporting a ‘slight’ deficit, and over one-third reporting a break-even situation. Only four percent of households in this survey reported a slight excess in income (Pryer 2003).

Our research confirms these findings. Figures 2 and 3 illustrate the large proportion of households with budget deficits across the four communities in Dhaka. Crucially, few households earn sufficient income to guarantee household stability. Households commonly describe this position as tanatani, a term that can be seen as synonymous with ‘coping’, and that highlights the financial tug-of-war of incomes and expenditures pulling constantly in opposite directions. Budgets may fluctuate in either direction if a household has additional expenditures (e.g. medical costs) or has earned a higher income (e.g. through more regular work).
Figure 5. Income surpluses and deficits in Dhaka bustees*

*(n=420 households) This includes monthly expenditures for food, rent, electricity, water and firewood, but excludes spending on education and health care (As of August 2013 1GBP=122 BDT) Source (Banks 2012)

Figure 6. Size of Budget Surplus and Deficit (% of households, in Bangladesh taka)

*(n=420 households) This includes monthly expenditures for food, rent, electricity, water and firewood, but excludes spending on education and health care. Source (Banks 2012)
These figures also highlight the small proportion of households with significant income surpluses. Not including the costs of education and healthcare, less than one in five households have a monthly surplus greater than 2,000 BDT. These individuals can be constituted as the bustee ‘elite’. With the housing market for the urban poor characterised by high levels of tenancy, this is one of the only other sources of alternative income available to bustee households. This is a lucrative opportunity for house owners, who earn between 47 to 200 percent higher incomes than tenants (Banks 2012). Section 5 will discuss this group – and the implications of this on the rest of the community – in further detail.

In contrast to this bustee elite, 55 percent of households experience a constant budget deficit even when taking into consideration only their basic needs (food, rent, electricity, water and firewood). Only one in three households have sufficient income surplus on top of these essentials to cover the average monthly expenditure on health costs of 863 taka without going (further) into a budget deficit, highlighting how ill-prepared the urban poor are to cope with chronic ill health, health shocks, and seasonal fluctuations in employment and income. Regular income shocks, primarily a result of ill health create further pressure on highly squeezed incomes, both reducing income and increasing costs. Dhaka-based surveys reveal 60 to 80 percent of bustee households reporting at least one adult falling sick in the two weeks prior to the survey, with the burden of adult illness disproportionately hitting more vulnerable households – those headed by unskilled workers and women as well as recent migrants acclimatising to new and difficult environments (Kabir et al 2000; Pryer 2003; Islam and Azad 2008).

Households adopt a variety of strategies to balance ongoing tensions between incomes and expenditures, all of which seek to generate additional income to that of the households core economic support (the labour of the household head). These include labour mobilisation, asset ownership, and financial strategies of managing complex portfolios of savings and loans. Most households face severe limitations in these strategies, however, making them unable to provide households with day-to-day security, let alone cope in the face of crises such as flooding, heat stress, or ill health.

i) Household labour mobilisation

Given the difficult and uncertain conditions and terms under which the urban poor secure employment, households are rarely able to survive on one income. This makes labour mobilisation strategies integral to household security, let alone advancement. For household heads, engaging in two jobs simultaneously is one strategy through which they can reduce or overcome structural and agency-related obstacles that limit the hours and days an individual can work (e.g. work irregularity, old age or physical weakness). Unable to work full-time rickshaw-pulling due to physical constraints, some household heads maximised the hours they work by pulling a rickshaw in the morning and running small hawking business in the afternoon. Household heads deploying this strategy would have preferred to be running the hawking business full-time but were unable to do this due to capital limitations.

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4 Only a handful of formal jobs provided a sufficient monthly income for supporting all household costs, and these were restricted to a close circle of better-off households with the right social connections that linked them with employers (Section 5 discusses this in more detail).

5 Household heads deploying this strategy would have preferred to be running the hawking business full-time but were unable to do this due to capital limitations.
capital limitations. Incomes remain low in both activities, preventing their transition into small business as a full-time option.

The reality is that few employment opportunities provide sufficient income to allow the household head’s income to cover all household costs. Consequently, the mobilisation of additional income earners is a common strategy pursued by around 60 percent of households across the four communities. Female employment is central to these strategies. Important to note, however, is that under these conditions of endemic insecurity, female employment is critical to survival and stability, let alone household advancement. As Gonzalez de la Rocha (2007) finds in Latin America, difficult urban labour markets has reduced the central role of adult men as breadwinners and meant that female labour is one of the few resources available for survival. While critical to household security, that the female labour force is subject to regular disruptions due to pregnancy, childcare, if women face harassment at work, or after daughters leave the household at marriage acts as a strong limitation on the ability of labour mobilisation strategies to provide the stability necessary for household improvement (Banks 2013). That only one in four household heads reporting household improvements have mobilised their wife’s labour also indicates that it is not female income contributions that play the primary role in household strategies for getting ahead. In fact, this brings the additional risk that female employment actually displaces longer-term prospects of household advancement, because the status, prestige and social networks most conducive to household mobility require households to uphold patriarchal norms that forbid women from working (Section 5). This means that the majority of urban poor households who are forced to prioritise the short-term economic needs of the household are in the process excluding themselves from the potential for long-term economic returns and mobility (Banks 2013).

ii) Asset ownership

The accumulation of physical assets through savings or borrowing is another strategy through which households minimise risk, diversify livelihoods opportunities, increase household resilience, and prepare for future crises (Jabeen et al 2010). The ownership of productive assets, however, is low across low-income urban households in Dhaka, and largely limited to house-owners. Less than one third of households own their own house and 30 percent own at least one productive asset, such as rental rooms, shops and equipment for small businesses, rickshaws, agricultural land and/or sewing machines. Nearly 70 percent of house-owners have productive assets, in comparison with only 12 percent of tenants. With the exception of rental rooms, assets owned tend to be associated with the employment of the household head (e.g a rickshaw, or equipment for a small business) rather than constituting a separate, diversified flow of income. Asset ownership, too, therefore, may increase incomes but is limited in its ability to provide additional income support to the household head’s employment. The assets which do provide alternative income streams – rental rooms – are limited to the bustee elite.

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6 The most important form of supplementary income is that of the household head’s wife. Incomes from other members (predominantly grown up children) is also an important source of income, but household heads commonly report that not all of this income is provided to the household – some is kept for personal expenditure or to support their own direct family’s living costs (Banks 2012)
iii) Managing financial portfolios

For most bustee households, incomes are insufficient despite their efforts to diversify or expand incomes through labour mobilisation and investing in assets. This means that households must find ways to bridge regular, and in some cases, severe income deficits. Dhaka’s urban poor have devised a number of strategies for coping with income shortfalls, including buying in small quantities (but at higher prices), skipping meals and purchasing foods of lower nutritional value (Zingel et al 2011). The depth of income shortfalls in many cases means these strategies are not enough, however. The need for finding alternative means of consumption-smoothing has led to the search for loans becoming the most common livelihoods strategy among Dhaka’s low-income households. Nearly three-quarters (72 percent) of households across our four communities have at least one loan or debt in their financial portfolio, the majority of which are informal (Banks 2012). For many households, this is a cyclical process, seeking loans on a monthly basis to bridge income deficits and repay previous loans.

Different types of loan play different roles in securing livelihoods, ranging from assisting with the daily struggles of survival and coping in emergencies, to investment and facilitating prospects for household improvement. Where loans are taken from (which dictates the interest and terms of the loan) and how they are spent differentiate between consumption-smoothing loans and those taken for productive purposes. This also dictates the household’s ability to repay them without placing further constraints on the household. Formal loans offer fixed interest and repayment schedules across a finite term. Where loans are invested productively, the returns to the investment can be used for repayment and then return to the household as additional income when fully repaid. The fact these loans have a finite term ensures that pressures on household income will ease after repayment. Three forms of informal lending are also available to the urban poor. Loans sourced from relatives or friends offer scope for low- or zero-interest and flexible repayment terms, enabling households to invest funds or to access more preferable terms for consumption-smoothing or coping in emergencies. Borrowing in the form of unpaid debt or credit in local grocery shops or rent was also found to be an important avenue for consumption-smoothing that does not necessarily further constrain future household finances.

The third and most devastating form of informal loan is that from moneylenders, or mohajons. Accessible quickly through these channels (hence their association with emergency finance needs) or when other funding sources are exhausted, moneylender loans play an important part of ‘last resort’ survival strategies, but come accompanied by onerous terms, including high monthly interest (up to 30 percent of the capital borrowed per month) and strict repayment criteria. Together, these trap borrowers into unending and escalating interest payments capturing large proportions of a household’s monthly income and eliminating a household’s prospects for improvement long after the immediate crisis is over. Given the pressures these loans bring, mohajons are portrayed as menacing and unyielding businessmen who take advantage of vulnerable households. They are often

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7 High rates of informal loans are in part due to the fact that microfinance operations in Bangladesh are limited in Bangladesh’s cities, despite their widespread coverage in rural areas (Ward et al 2004; Banks, Roy and Hulme 2011, Bashar and Rashid 2012).

8 This is not to say that all formal loans are used productively as intended. Some are used to pay for schooling or consumption-smoothing, but compulsory savings periods limit their role as a source of emergency finance.
described through illustrative terms such as ‘they are catching our blood’ or ‘cutting our throats’, given their ability to make their own strict rules regarding interest and repayment schedules.

Coping and deteriorating households are characterised by their dependence on multiple forms of borrowing. Over 70 and 80 percent of households reporting their status as ‘the same’ or ‘worse than’ five years ago have at least one loan, dropping to around 50 percent of those who have experienced household improvements (Banks 2012). Not only are improving households less likely to have taken loans, they are also much more likely to have accessed formal loans that have investment potential or loans from friends and relatives on preferable terms (See Figure 7). In contrast, half of coping households have resorted to moneylender loans. This can be seen as both a cause and consequence of household deterioration. Where households on limited incomes are vulnerable to health-related and other shocks, they are often driven to search for emergency finances, with little negotiating power over repayment terms. Their catastrophic terms prevent later household recovery due to ongoing interest payments that squeeze household incomes indefinitely. As one household head with a moneylender illustrates, “I’m only paying interest, and sometimes I can’t even manage this. I’m working hard and trying hard not to take more loans, but with the interest my struggles just keep increasing”.

Figure 7. Loan prevalence across households by coping status*

* ‘Households with loans’ shows the percentage of all households with loans. For formal and moneylender loans, this shows the percentage of borrowers within each category.

If households have accessible savings this can provide investment capital or a buffer to draw upon to prevent them from resorting to loans for consumption-smoothing or meeting emergency costs. The experiences of ‘improving’ households demonstrate the importance of both these ‘prevention’ and ‘promotion’ roles. Savings prevented health shocks from reversing household improvements and allowed them to consolidate capital and assets that lead to better jobs and higher incomes. Again, those able to save for these purposes tend to be the small house-owning elite with lower costs of living (not paying rent) and high and stable monthly incomes through their rental properties. Over half (54 percent) of house-owners have savings in comparison with only just over a quarter (27 percent) of tenants.
For the majority of households, the constraints to urban livelihoods we have discussed vastly restrict savings abilities, particularly for those on unstable daily incomes working as unskilled labourers or in small business.\(^9\) Not only do households face difficulties saving due to low and irregular incomes, accessible savings are also difficult for households because they lack places in which to save. Formal bank accounts are near impossible to access because of regulations requiring a legal address for account opening.\(^10\) Other means of savings included investing in land or agriculture in the village, purchasing gold, or saving in life insurance policies or fixed deposit savings accounts, the latter rendering savings inaccessible for the duration of the policy (in some cases up to 12 years). These savings, however, cannot be drawn upon in times of crises, making households still vulnerable to resorting to moneylender loans.

What we see when we look closely at household experiences in Dhaka, therefore, is that livelihoods are characterised by ongoing insecurity and that for the majority, household improvements tend to be small, incremental, and vulnerable to reversal (Banks 2012). The commoditisation of the urban economy poses a significant threat to low-income households who must devise multiple strategies of labour mobilisation and manage complex financial portfolios to meet staking income deficits, which are regularly exacerbated by income shocks due to ill health. As Rakodi (1995) highlights, in low-income urban settlements, the ‘reverse’ of poverty is not so much wealth as security, with households having sufficient command over their assets to guard against shocks and freedom from debt. The reality is that given the endemic insecurity the urban poor face they have little assets or resources to draw upon to survive, let alone succeed, in such a hostile environment. Against this endemic insecurity, future climate change impacts (which are already evident to Dhaka’s urban poor in the form of increased heat stress and rainfall) loom ominous.

4. Household livelihoods in an era of climate change: coping or adapting?

The impacts of climate change will create further instability in the livelihoods of the urban poor through their adverse impacts on health and employment. This section asks whether, given their existing livelihoods insecurity, low-income urban households in Dhaka are coping with or adapting to the additional challenges that climate change brings. ‘Coping’ focuses on survival today, a strategy that may deal with immediate insecurity but likely comes accompanied by higher future costs, such as high interest payments on exploitative moneylender loans and the other costs associated with entering into exploitative patron-client relationships. A more preferable solution is to improve the adaptive capacity of households, in which they can undertake actions that help them to avoid loss and speed recovery from climate change impacts in the short-term, as well as to reduce vulnerability and enhance resilience in the medium to long-term (Satterthwaite et al 2007).

Even without going into the science of climate change, it is possible to look at the impact of climate change on urban livelihoods, which is an increasingly important influence exacerbating an already complex and vulnerable livelihood context (Banks, Roy and Hulme 2011; Roy, Hulme and Jahan 2012). There are two major processes at play in this respect, which both increase the scale and

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\(^9\) Around one in five households headed by unskilled labourers, one in four households headed by small businessmen and one in three households headed by formal sector workers have savings (excluding the compulsory savings that are attached to NGO loans, and usually used to repay the loan at the end of the cycle rather than returned to the household).

\(^10\) Some households were able to overcome this obstacle either through their formal employment or through their contacts with locally elected officials. Both of these channels signify that they are amongst the ‘better-off’ bustee elite, as Section 5 discusses in more detail.
exacerbate the severity of urban poverty. On the one hand, the impacts of climate change in rural areas are leading to the loss of land and livelihoods and leading to further and aggravated poverty and destitution. Climate change will accelerate the process of urbanisation by displacing a greater number of poor rural households at a faster rate (Banks et al 2011). Bangladesh’s government acknowledges that six to eight million people could be displaced and in need of resettlement by 2050 as a result of climate change, many of whom will be low-income households migrating to urban areas (GoB 2009). Longer and more frequent periods of flooding and cyclones, land salination in coastal areas and land loss due to river erosion will all contribute to these processes, which are predicted to be particularly severe in Bangladesh’s South-West region (Roy, Hulme and Jahan 2012). Many such ‘climate refugees’ have little option but to migrate to the city to secure their livelihoods, thereby increasing the scale of urban poverty. Migrants ‘pushed’ to the city as a last resort are disadvantaged from their first day, with many unable to bring human or financial capital to invest in the urban labour market (Opel 2000). Consequently, while voluntary migrants tend to move to Dhaka or large urban centres, natural hazard-induced displaces tend to stay in smaller towns closer to their rural origins: uncertain of urban environments and with their livelihoods adapted to rural areas, they stay close to their land, livelihoods and existing social networks hoping to return after the hazard has passed (Hutton and Haque 2004; Roy, Hulme et al 2012).

As well as increasing the scale of urban poverty, more frequent, severe and prolonged weather events add an additional layer of stress by decreasing work opportunities and increasing the environmental and health hazards that low-income urban households face in a context of limited services and infrastructure and densely populated and environmentally-vulnerable habitats (Tanner et al 2009; Jabeen et al 2010; Banks et al 2011; Roy, Guy et al 2011; Roy, Jahan and Hulme 2012). Dhaka is particularly affected by climate change given its size and nature as an unplanned city in an environmentally vulnerable country prone to flooding and cyclones. Parts of Dhaka flood on a near-annual basis, and the city has been hit by three major floods in the past 20 years, leading to massive losses (See Rashid 2000 for a detailed example of how 1997’s flood impacted upon Dhaka’s urban poor). Climate-induced hazards affect the livelihoods of the urban poor on a near-annual basis, destroying houses and belongings, increasing exposure to disease through flooding and the inundation of sanitations facilities, and through disruptions to employment, amongst others (Rashid 2000; Rashid et al 2007; Braun and Abheuer 2011; Rabbani et al 2011; Haque et al 2012). These climate changes impacts will affect the poorest urban residents disproportionately, but are not necessarily distributed evenly. Some impacts – such as increased heat stress or food prices – will be universal, while others, such as flooding, will be more localised, with physical, tenure-related, socio-political and institutional factors making them more significant in some settlements – or even corners of settlements – than others (Jabeen et al 2010; Banks et al 2011).
While these impacts of climate change are neither the only, nor the primary challenges the urban poor face, they will (and do) compound and exacerbate the risks and challenges they face. Within this context, households and communities must find coping and adaptation strategies to minimise their risk to these threats, in ways that embed these within the other difficulties and priorities they face (Tanner et al 2009; Ahammad 2011; Roy, Jahan and Hulme 2012). Here we look in more detail, given the centrality of employment to urban livelihoods, at how households are affected by and deal with the work disruptions brought by the challenges of increased heat stress and rainfall that they perceive to be the greatest risks to their livelihoods (Jabeen et al 2010; Banks et al 2011).

Increased rainfall and heat stress have severe implications on the working lives of unskilled labourers and small businessmen. Unskilled labourers face the most direct disruptions to their working lives, given their work is dependent on their physical labour and unsheltered from bad weather conditions. This means that even where work is available, all unskilled labourers face major seasonal disruptions in the face of gruelling conditions throughout rainy season and the hottest parts of the year that reduce the house that they can work. For day labourers, work availability grinds to a complete halt throughout the rainy season when construction stops, increasing demand for rickshaw-pulling, the closest substitute. However, such physical labour under extremely high temperatures or excessive rainfall has severe health implications, and these are particularly pronounced in rainy season. To some extent, rickshaw-pullers can cope with the highest temperatures by working fewer hours, choosing not to work throughout the hottest hours of the day, or taking advantage of higher fares during those hours and resting afterwards.

Options are more limited during rainy season. While rickshaw-pullers try to prevent falling ill by not working in torrential rains, this strategy is limited in time-frame, because households require a minimum income to meet rent, food and loan obligations. At some point, these costs force rickshaw-pullers to work despite the adverse conditions, making it nearly impossible for them to become ill. As one group of rickshaw-pullers illustrated, “For the rain, if I go to work one day, then for three days I am suffering from fever. But I have to work at least two days a week to meet household costs”. Higher fares during rainy season are not enough to make up for income losses, especially when combined with the additional burden of higher medical costs.

Households devise other strategies for dealing with reduced incomes, but these are all detrimental to the ability of the household to recover from the effects of rainy season when it is over. Another strategy is to rely more upon credit and other forms of borrowing throughout this difficult period, but this creates further obstacles for the household when the rain stops. As another group of rickshaw-pullers explained, “We rely on taking goods on credit in rainy season or by borrowing money, usually on interest. After that, when the good times come, we have to earn double our usual incomes so we can repay debts and loans. Otherwise we have to take even more loans just to repay them”. We see, therefore, that these seasonal vulnerabilities add an additional layer of stress to household efforts to secure their livelihoods. Few households are able to prepare for these periods by saving money or food given the difficulties of maintaining stable incomes and balancing household budgets throughout the rest of the year.

While small businesses do not face these same direct impacts on their income, they are indirectly impacted by the fact that the majority of their customers are unskilled labourers. Seasonal fluctuations that exacerbate their insecure livelihoods, therefore, reduces their demand for non-
essential items and their ability to pay cash for essential items. While the ability to buy goods on credit offers an important coping mechanism to households during these periods of crisis, it also leads to unrelenting struggles for businesses to maintain cash flows during these seasonal dips, slowly depleting profits and in doing so, draining the business’s capital. As one businessman explained, “When people are taking goods without paying money [...] the shop’s daily income needs to be spent on my household, so I am constantly losing capital for my shop”. Businessmen face a similar problem to that of rickshaw-pullers. They require a minimum income to meet obligations of rent, food and loan repayments, and where incomes are vastly reduced have to find other means of bridging this gap. Unlike rickshaw-pullers they have one other option to exhaust before turning to costly loans for this purpose, withdrawing capital from their business to meet their income needs. This too, however, means that businessmen emerge from rainy season weaker than before, having less capital invested in and less profits from their business.

We see therefore, that persistent economic vulnerabilities are central constraints on urban livelihoods, and that these are and will continue to be exacerbated by seasonal fluctuations in heat and rainfall that are predicted to get longer and more extreme in an era of climate change. Households have little means of coping, let alone adapting to these changes, as insecurity throughout the year leaves them poorly-prepared in cash or in-kind savings and the co-variant nature of this vulnerability reduces the ability of networks of reciprocity to be an additional source of support. As one household explained, “If we can save a little one month, it is quickly destroyed the next when we have illness costs. So when it comes to rainy season, we have no financial back-up”. As we have also seen throughout the discussion so far, a small group of bustee elite remain relatively insulated from the economic vulnerabilities faced by the majority of households. These broader social and political influences have profound effects on urban livelihoods in Bangladesh, as the next section investigates.

5. Social and political hierarchies in a bustee setting: Implications on household- and community-based interventions in an era of climate change

For the majority of households we have seen that year-round household livelihoods are characterised by precariousness and instability. Households face ongoing competing tensions between low incomes and high costs of living. The livelihoods strategies of households can be seen, at best, to allow households to cope with endemic urban insecurity, but this leaves little resources with which to cope with the exacerbated pressures they will face as climate change impacts accelerate and the seasonal fluctuations which cause such difficulties in coping with and recovering from become potentially longer, more frequent, and more extreme weather events.

Throughout these earlier sections we have seen a small group of households who who benefit from more secure positions. The high monthly incomes they receive from rent, in combination with their ability to secure high-paid formal contracts in formal sector jobs through their own connections with external businessmen or through their close linkages with bustee leadership means that these individuals have much higher as well as more secure monthly incomes. These same individuals also dominate informal service provision in the bustee, providing them with an additional lucrative

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13 Only businesses that were able to offset falls in demand were able to cope throughout rainy season. This was possible for businesses serving non-poor clientele outside the bustee environment. Such businesses make up the minority of businesses run by bustee residents, however, given the amount of capital necessary to operate larger businesses outside the bustee.
income-generating activity at the expense of tenants, who pay high prices for poor quality and irregular water and electricity supplies (Rashid and Hossain 2005; Banks 2008; Hossain 2013).

This bustee elite constitute the top levels of the social and power hierarchy within bustees and also act as the informal system for governance and resource distribution at the community level. Given their exclusion from formal systems of governance and service provision, this means that the urban poor have become dependent on supporting these clientelistic relationships in order to gain access to services and opportunities. Figure 8 maps the informal channels through which claims, rights and entitlements are negotiated in a bustee setting, which are controlled and mediated through a small group of local leaders and the closed circle of ‘well-connected supporters’ below them. These tend to be the large house-owners and long-term residents of the bustee that share political affiliation or kinship networks with the local leaders. Meanwhile, the majority of bustee residents remain dependent on these individuals for shelter, services and security.

Figure 8. Social hierarchies and patron-client relationships in a bustee setting

In the context of this research, these hierarchies have two important implications on programmes in an era of climate change, one on adaptive capacities at the community level, and one on the limitations to household agency in the face of this structural environment. These lessons may not be linked specifically to the impacts of climate change itself, but does lead to a warning regarding potential interventions aimed at strengthening household livelihoods and building resilience at the household or community level. Programmes that do not consider the implications of these power hierarchies may mean that their impact on asset-building at the household is limited, or that they have unintended consequences in terms of exacerbating inequality at the community level.

i) Adaptations to the built environment: Who adapts and who benefits?
Possibilities for climate change adaptation are restricted to the upper levels of these social hierarchies. Unlike the majority of households, this small group of houseowners have high and stable incomes that give them greater adaptive capacity to the impacts of climate change, both for themselves and their tenants. While there is little incentive for tenants to invest in physical adaptations that reduce risk and losses in the face of high temperatures and heavy rainfall, for houseowners there are a number of structural improvements that can be made to the built environment, including upgrading wall materials from wood or bamboo sheeting to corrugated iron, building in windows for ventilation, and building a concrete floor with raised lip at the entrance (Jabeen et al 2010; Roy, Hulme and Jahan 2012). Household repairs and upgrades are the responsibility of the landlord, and it is in the houseowner’s interests to carry out such adaptations when they can afford them, as this helps to minimise damage to properties and avoid recurrent repair costs after each rainy season. Improvements to the built environment also offer a financial incentive. With rents varying by housing quality and location, these adaptations allow the landlord to charge higher rents for their rooms. While this benefits the houseowner and tenants in terms of the improved resilience of living environments to climate change impacts, it has an adverse impact on the poorest households in particular. This means that the poorest households are also those most likely to face the brunt of climate change impacts and its repercussions on their health and employment: searching for the lowest rent they can find means they tend to live both in vulnerable areas (e.g. those in closest proximity to or above water bodies) and in the poorer quality housing less able to withstand extreme weather. This means that it is the poorest households who are most likely to face the brunt of climate change impacts and who have least resilience to them.

Houseowners and community leaders have also helped to improve the built environment through their role in NGO community upgrading and service provision programmes. Where NGOs operate in urban Bangladesh, they tend to operate through existing community leadership and institutions, facing heavy resistance unless they do so. In the process, however, providing services, selecting participants or distributing resources through these channels further increases the community’s dependence on them and further consolidates their power and income. NGOs that are operating across Dhaka face resistance in their programmes unless they operate through these channels. Subsequently, community-based organisations are mobilised through existing leaders and landlords, who in the process further consolidate their power and income. As one NGO participant joked at a ClimUrb dialogue held in Dhaka, “At least some are happy [with our programmes] – we have legalised the positions of mastaaans” (Local leaders, or musclemen). These individuals may be critical to community development, but unless they have the collective interests of the community in mind, its benefits are not distributed equally. These mastaaans are not altruistic individuals with the community’s interests at heart and are viewed by the community as a ‘necessary evil’, being the only channel through which the community is reached by services and through which problems within the bustee can be negotiated (Banks 2008). However, while recognising their necessity in mediating with officials and connecting informal settlements to service providers and political contacts, these individuals are also a source of fear among the urban poor, often using extortion or threats of

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14 There are several small investments households can make that do not entail permanent solutions or adaptations to the built environment, such as buying fans, hanging a chanda (long piece of cloth) in the roof space or planting ‘green infrastructure’ on the roof to absorb heat, or raising furniture and food storage off the floor. However, it is the landlord’s responsibility to make these structural improvements to the household that offer better protection.
violence to control the community (Banks 2008; Hossain 2012; Hackenbroch and Hossain 2012; Hackenbroach 2013). They have reason to fiercely protect their power given the resources they can accumulate through their leadership in terms of income from service provision, housing and capturing and controlling communal land for profit-making purposes. As Hackenbrock (2013) finds, these individuals are rich in assets and earning high incomes from the settlement. Even information is a resource they control distribution of, enabling them to use this, too, as an income-generating asset.  

Similarly to the effect of household improvements, community upgrading also increases rental prices across the community, particularly where legal access to water and electricity is negotiated. This has two-fold financial benefits for homeowners in the sense that not only do rental incomes increase significantly, but that the costs of providing services to their tenants is significantly reduced at the same time. In two neighbouring communities in peripheral Dhaka, for example, recently secured legal water supply meant that average rental costs were 1,000 BDT per month, in comparison with around 700 BDT in the neighbouring community. Not only were homeowners benefiting from increased income, legal water connections had greatly reduced water costs. Water bills were between 200 and 300 taka for up to 14 households as opposed to for each household, costs savings that were no passed on to tenants. This was a visible source of tension for tenants for whom there was no prospect for house ownership and who were spending large proportions of their monthly incomes on rent.

What we see, therefore, is that while local leaders and their networks of associates have been integral to community development and adaptative capacities, this comes at the cost of deepening the rest of the community’s dependence on them, and at the cost of increasing inequality within the bustee as costs of living increase for tenants and incomes rise concurrently for those controlling rent and service provision in the bustee. NGO programmes, despite the role they play in improving the living environment and the community’s adaptive capacity, unwittingly reinforce these power hierarchies and inequalities. While infrastructure improvement and better access to services undeniably improves the ability of communities to withstand extreme weather events, such investments have also had a negative impact in terms of increasing the living costs of those facing the most insecure livelihoods and with the fewest prospects of household improvement. Those worst off in this situation are the poorest households, who may get pushed out of better-quality housing or better serviced communities due to increasing rental costs.

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15 That these leaders have connections with politicians and other powerful stakeholders outside the bustee allows them to hear first about any dangers of imminent evictions. Prior to a recent eviction this was used to extort considerable sums of money from poorer households. Claiming family emergencies were forcing them to sell their assets, some homeowners ‘sold’ their rooms and rental rooms to tenant households in the community at high prices. Viewing this as a significant step towards asset ownership and household improvement, some households borrowed large sums of money to buy these rooms. However, shortly afterwards, the slum was evicted and they lost their full investment. Soon after the eviction, the original owners came back to the site to map out their original properties to claim ownership over them again. Thanks to Joe Devine for sharing this story, which gives important insight into the extent of these individuals’ power and self-interest.
ii) Limitations to household agency – no scope for moving from survival to advancement\textsuperscript{16}

There is one further danger of overlooking these informal systems of governance and resource distribution by focusing too heavily at the household level with a focus on livelihoods. The asset-based frameworks with which urban poverty is commonly conceptualised as and that view urban poverty as a result of an accumulation of asset deprivations, have within them an implicit assumption that the right strategy for urban poverty reduction is the expansion or protection of natural, physical, human, financial or social capital at the household level, better equipping the household to deploy strategies aiming for household stability and advancement. These perspectives may give an accurate understanding of how urban poverty is experienced, by solely focusing on the household as the unit of analysis overlooks these social and political inequalities that drive inequality and exacerbate the vulnerability of the poorest urban households.

The opportunities and obstacles facing the urban poor as they struggle to secure their livelihoods and cope or adapt to increased threats they face as a result of climate change are not only influenced by their ownership or their lack of different forms of assets: critically, they are also shaped by social and political processes and institutions at the community level.

(There is little they can do to overcome the need for the ‘right’ social networks for advancement, and no means through which they can enter these closed circles i) because they do not have the financial resources to gain entry and ii) have to prioritise economic survival over social and political strategies for entering these networks, a further limitation in this). This means very little opportunity to access better jobs on terms that facilitate not just security but survival. Banks (2013) highlights that despite making large investments in skills development households are unable to move into more lucrative jobs that they had hoped for without the right social connections

Asset-based livelihoods frameworks have, therefore, been argued to overestimate an urban household’s ‘room for manoeuvre’ when it comes to designing and deploying their livelihoods strategies (Wood and Salway 2000).

As Gonzalez de la Rocha (2007) highlights, the centrality of employment to urban livelihoods means that conceptualisations of urban poverty that do not place this at the centre face serious problems recognising the extent of household constraints on livelihoods and survival strategies, and the factors underlying the different access and terms of access to employment across households.

In a political economy in which access to information, resources and opportunities is dependent on a household’s social networks, household heads also struggle to balance an incompatible trade-off, namely the need to balance the household’s immediate economic needs with its long-term strategic interests. Amidst endemic insecurity, this means that for the majority, economic necessity takes priority, regardless of the long-term sacrifice this entails. In terms of female employment, for example, while the majority of households need women’s work to survive, the subsequent erosion

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\textsuperscript{16} This section is based on Banks (forthcoming), ‘Livelihoods Limitations: The Political Economy of Urban Poverty in Bangladesh’.
of their social status and networks ensures that they are, in the process, excluding themselves from the social networks that provide the most effective means of mobility (Banks 2013).

Heterogeneity – the poorest households are worst off. High rates of tenancy. With rental prices varying by housing quality and location, the search for lowest rents means poorest households live in lowest-quality housing and most risk-prone areas.

6. Conclusions

The reality is, urban poor households have very few weapons in their arsenal for coping, let alone adapting to the threat of climate change. Their day to day lives are a constant struggle, leaving little resources to cope in the face of emergencies. Labour mobilisation, asset ownership, patterns of savings and loans, and social support networks all play a role in helping households to cope and to reduce their future vulnerability. What is important to also emphasise, however, is the limitations to their effectiveness. Strategies of labour mobilisation, asset ownership, savings, loans, and social support networks all offer some potential to contribute to adaptive strategies, but the reality is that households use these to cope in the short-term, rather than to advance their interests in the medium- to long-term. Crucially, ongoing insecurity reduces the ability of households to build and consolidate upon their assets, making any household improvements incremental and vulnerable to reversal.

The distribution of power, resources, and opportunities within the bustee setting is confined to a relatively small elite circle.

A climate change lens perspective on urban poverty offers both strengths and weaknesses. On the one hand, it offers urgency to the pressing need to better prioritise and strategise urban poverty reduction across the developing world. The problems that the urban poor already face on a day to day basis are becoming more frequent and severe, and the urban poor are ill-equipped given the endemic insecurity of their urban livelihoods to cope with these changes. However, a climate change lens also serves to reinforce existing perspectives that urban poverty is driven and realised at the household level, and that the current predominant focus on asset-based frameworks for understanding urban poverty are the most appropriate.


Banks, N., 2013, Female employment in Dhaka, Bangladesh: Participation, Perceptions and Pressures, Environment and Urbanization


